Drought Plan Option Name: **Customer Management - Drought Publicity Campaign**

Drought Plan Option Description: **Contribute to collaborative (regional and national) water conservation advice and campaigns for household and non-household water users. This includes WReN water companies and other stakeholders, neighbouring water companies, retailers and others if a national campaign is needed.**

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 To conserve 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.	Large	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The campaign to raise public awareness can be carried out in a number of ways using a variety of different types of media. This measure will have no adverse impacts on biodiversity, flora or fauna, or designated sites of nature conservation interest. However the measure will reduce consumer demand for water and thereby reduce the requirement for abstraction from Yorkshire Water's sources includng WReN and other water companies to enable a larger scale of effect, with the potential for positive impacts on flow sensitive habitats/species across a wider area.	None	Minor beneficial
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Large	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The campaign to raise public awareness will have no adverse effects on natural resources or ecosystem services. However, the measure will reduce consumer demand for water and thereby reduce the requirement for abstraction from Yorkshire Water's sources as well as WReN and other water companies to enable a larger scale of effect, with the potential for positive effects on sustainable natural resources. There is not expected to be any scope to provide or deliver biodiversity net gain.	None	Minor beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	n/a	n/a	n/a	n/a	n/a	n/a	Media campaigns are considered to have no impact on avoiding the introduction or spreading of INNS.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Large	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The collaborative campaign will result in water savings which will contribute towards improving the security of supply for customers in the Yorkshire Water, WReN, and neighbouring water company supply regions. The media campaign will also help raise awareness of the importance and value of water environment for health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	n/a	n/a	n/a	n/a	n/a	n/a	No impacts on recreation, tourism or navigation are anticipated as a result of the media campaign.	None	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The collaborative campaign will result in water savings in the Yorkshire Water, wider WReN, and neighbouring water company regions which will contribute towards improving the security of water supply for businesses in the region, therefore protecting the local economy.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	This measure will reduce the amount of water used in the region. It will not involve any increased waste production. The collaborative campaign will not involve any increased material resource use.	None	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The use of a collaborative media campaign will actively promote efficient water resource management and sustainable management of natural resources.	None	Minor beneficial
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Reductions in demand for water due to this drought plan measure would result in reduced requirement for abstraction from sources across Yorkshire Water, WReN and neighbouring water company regions, reducing associated abstraction impacts on surface water and groundwater 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	4.2 To protect and enhance surface and groundwater levels and flows	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The collaborative campaign is considered to have a beneficial impact on the water environment, acknowledging that reduced consumer demand for water will result in reduced requirement for abstraction from water sources across the Yorkshire Water operating area, wider WReN and neighbouring water company regions.	None	Moderate beneficial
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The collaborative campaign is considered to have beneficial impacts on water abstraction management, acknowledging that reduced consumer demand for water will result in reduced requirement for abstraction at sources across Yorkshire Water, WReN and neighbouring water company regions, reducing further impacts to ecosystem functions.	None	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Large	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The media campaign is considered to have a beneficial effect on water via reduced consumer demand for water. This may have long term effects on consumer behaviours and water usage through information provision and providing information to the public regarding water efficiency methods.	None	Moderate beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	n/a	n/a	n/a	n/a	n/a	n/a	No impacts on geology, geomorphology and quality/quantity of soils are anticipated as a result of the media campaign.	None	None
Air and Climate	6.1 To maintain and improve 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 the media campaign.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	n/a	n/a	n/a	n/a	n/a	n/a	The media campaign will not involve an increase or reduction in energy consumption or in associated greenhouse gas emissions.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Large	High	Short-term	Temporary	Medium (beneficial)	High (beneficial)	Demand management measures are a key component of Yorkshire Water's Drought Plan. The collaborative campaign aims to ensure the resilience of water supplies to drought which may become more prevalent due to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Large	Medium	Short-term	Temporary	Low (beneficial)	Low (beneficial)	The collaborative campaign is considered to have no direct impact on the historic environment, heritage assets and their settings and archaeologically important sites. There is the potential for reduced consumer demand for water to result in reduced requirement for abstraction at Yorkshire Water, WReN, or neighbouring water company sources, potentially reducing any impacts of drought-related effects on archaeology and cultural heritage assets.	None	Negligible beneficial
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Large	Medium	Short-term	Temporary	Low (beneficial)	Low (beneficial)	The collaborative campaign is considered to have no direct impact on landscape and visual amenity or any changes to access to the countryside or open space. There is the potential for reduced consumer demand for water to result in reduced requirement for abstraction at Yorkshire Water's, WReN, or neighbouring water company sources potentially reducing any impacts of drought-related landscape or visual impacts.	None	Negligible beneficial

Drought Plan Option Name: Customer Management - Agile Communication Strategy
Drought Plan Option Description: Promote water efficiency to domestic customers and non-household water users (agile communications strategy)

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 To conserve 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 (beneficial)	The campaigns to raise public awareness can be carried out in a number of ways using a variety of different types of media. This measure will have no adverse impacts on biodiversity, flora or fauna, or designated sites of nature conservation interest. However the measure will reduce consumer demand for water and thereby reduce the requirement for abstraction from Yorkshire Water's sources, with the potential for positive impacts on flow sensitive habitats/species.	None	Minor beneficial
Biodiversity, flora and fauna	1.2 To 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 (beneficial)	This measure will have no adverse effects on natural resources or ecosystem services. However the measure will reduce consumer demand for water and thereby reduce the requirement for abstraction from Yorkshire Water's sources, with the potential for positive effects on sustainable natural resources. There is not expected to be a scope for any impact to provide or deliver biodiversity net gain.	None	Minor beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	n/a	n/a	n/a	n/a	n/a	n/a	Media campaigns are considered to have no impact on avoiding the introduction or spreading of INNS.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The media campaign will result in water savings which will contribute towards improving the security of supply for customers in Yorkshire Water's supply region. The media campaign will also help raise awareness of the importance and value of water environment for health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	n/a	n/a	n/a	n/a	n/a	n/a	No impacts on recreation, tourism or navigation are anticipated as a result of the media campaign.	None	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The media campaign will result in water savings which will contribute towards improving the security of water supply for businesses in the region, therefore protecting the local economy.	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)	Medium (beneficial)	This measure will reduce the amount of water used in the region. It will not involve any increased waste production. The media campaign will not involve any increased material resource use.	None	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The use of a media campaign will actively promote efficient water resource management and sustainable management of natural resources.	None	Minor beneficial
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Reductions in demand for water due to this drought plan measure would result in reduced requirement for abstraction from Yorkshire Water's sources, reducing associated abstraction impacts on surface water and groundwater quality in drought conditions.	None	Minor beneficial
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The media campaign is considered to have a beneficial impact on the water environment, acknowledging that reduced consumer demand for water will result in reduced requirement for abstraction from water sources in the Yorkshire Water operating area.	None	Minor beneficial
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The media campaign is considered to have beneficial impacts on water abstraction management, acknowledging that reduced consumer demand for water will result in reduced requirement for abstraction at Yorkshire Water's sources, reducing further impacts to ecosystem functions.	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	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The media campaign is considered to have beneficial effects on water via reduced consumer demand for water. This may have long term effects on consumer behaviours and water usage through information provision to the public regarding water efficiency methods.	None	Minor beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	n/a	n/a	n/a	n/a	n/a	n/a	No impacts on geology, geomorphology and quality/quantity of soils are anticipated as a result of the media campaign.	None	None
Air and Climate	6.1 To maintain and improve 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 the media campaign.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	n/a	n/a	n/a	n/a	n/a	n/a	The media campaign will not involve an increase or reduction in energy consumption or in associated greenhouse gas emissions.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	High (beneficial)	Demand management measures are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure the resilience of water supplies to drought which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Low (beneficial)	The media campaign is considered to have no direct impact on the historic environment, heritage assets and their settings and archaeologically important sites. There is the potential for reduced consumer demand for water to result in reduced requirement for abstraction at Yorkshire Water's sources, potentially reducing any impacts of drought-related effects on archaeology and cultural heritage assets.	None	Negligible beneficial
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Low (beneficial)	The media campaign is considered to have no direct impact on landscape and visual amenity or any changes to access to the countryside or open space. There is the potential for reduced consumer demand for water to result in reduced requirement for abstraction at Yorkshire Water's sources, potentially reducing any impacts of drought-related landscape or visual impacts.	None	Negligible beneficial

Drought Plan Option Name: **Customer Management - Temporary use ban**
Drought Plan Option Description: **Restrictions on the use of hosepipes for a range of uses, including the washing of vehicles and boats, watering gardens and sports grounds and filling of paddling pools.**

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 To conserve 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 (beneficial)	A temporary use ban is considered to have no impact on biodiversity, flora and fauna, other than to acknowledge that reduced consumer demand for water will result in a reduced requirement for abstraction at Yorkshire Water's sources and, therefore, there is the potential for positive impacts on flow, sensitive habitats/species etc.	None	Minor beneficial
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	A temporary use ban is considered to have no adverse impact on natural resources and ecosystem services. Reduced consumer demand for water will result in a reduced requirement for abstraction at Yorkshire Water's sources and, therefore, there is the potential for positive impacts to support better use of natural resources and support ecosystem services for longer. There is not expected to be scope to provide biodiversity net gain.	None	Moderate beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	n/a	n/a	n/a	n/a	n/a	n/a	The temporary use ban is likely to have no impact on avoiding the introduction or spreading of INNS, with reduced abstraction requirements leaving more water in river systems.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	A temporary use ban will provide water savings that will contribute towards improving security of supply of water in the Yorkshire Water supply region. Drinking water quality will not be affected by the restrictions and the measures do not restrict essential water uses that are important in maintaining health and well-being of the population served by Yorkshire Water.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Medium (adverse)	Low (adverse)	Reducing the demand for non-essential water use is unlikely to have significant impacts on recreation, tourism and navigation. There may be some limited impact on domestic use, for example not being able to refill or maintain a domestic swimming pool.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Medium	Short to medium-term	Temporary	Medium (adverse)	Medium (adverse)	The principal impact will be on domestic customers as the ban would preclude the use of water for those use categories set out under the temporary use ban powers. The ban may indirectly adversely impact business which benefits from the sale of certain water-using appliances such as hosepipes and sprinklers.	Moderate adverse	None
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Medium	Medium-term	Temporary	Low (beneficial)	Medium (beneficial)	The ban will reduce the demand for water in the region, improving the efficiency of existing water resource use. It will not result in any increase in the generation of waste.	None	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The ban will actively promote efficient water resource management and sustainable management of natural resources.	None	Minor beneficial
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Medium	Low	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Reductions in demand for water would result in reduced requirement for abstraction at source, reducing the risk of associated impacts on surface water and groundwater 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	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Medium-term	Temporary	Low (beneficial)	Medium (beneficial)	The ban 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 from Yorkshire Water's sources, reducing the impacts on water levels and river flows in drought conditions.	None	Minor beneficial
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Medium-term	Temporary	Low (beneficial)	Medium (beneficial)	Reduction in demand for water will result in a reduced requirement for abstraction from Yorkshire Water's sources, helping to provide some protection for water-dependent ecosystems.	None	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Medium	Medium to long-term	Temporary	Low (beneficial)	Medium (beneficial)	This option 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 medium to long-term impacts on consumer water usage.	None	Minor beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	n/a	n/a	n/a	n/a	n/a	n/a	No impacts on geology, geomorphology and quality/quantity of soils are anticipated as a result of the temporary use ban.	None	None
Air and Climate	6.1 To maintain and improve 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 the temporary use ban.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	n/a	n/a	n/a	n/a	n/a	n/a	The ban will not involve an increase in energy consumption or associated greenhouse gas emissions.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Long-term	Permanent	Low (beneficial)	Medium (beneficial)	Demand management measures are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Medium	Medium	Medium-term	Temporary	Low (beneficial) Low (adverse)	Low (beneficial) Low (adverse)	There may be minor adverse impacts associated with the setting of some heritage assets, for example, visual impacts on registered parks and gardens and /or the grounds of listed buildings due to restrictions on the use of water for any non-essential purposes. Notwithstanding these impacts, the ban is considered unlikely to have any direct impact on the historic environment, heritage assets and archaeologically important sites. There is the potential for reduced consumer demand for water to result in reduced requirement for abstraction at Yorkshire Water's sources, potentially reducing the magnitude of any drought-related effects on archaeology and cultural heritage assets.	Negligible adverse	Negligible beneficial
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Medium-term	Temporary	Low (beneficial) Low (adverse)	Low (beneficial) Low (adverse)	There may be some localised adverse effects on townscapes and the setting of some visual amenities due to the ban on watering of gardens and grounds. However, 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. There is the potential for reduced consumer demand for water to result in reduced requirement for abstraction from Yorkshire Water's sources, potentially reducing the magnitude of any drought-related effects on landscape or visual amenity.	Negligible adverse	Negligible beneficial

Drought Plan Option Name: Customer Management - Non-essential use ban

Drought Plan Option Description: Prohibit or limit non-essential uses of water (non-essential use ban) - Drought order to restrict non-essential water uses to be applied for when reservoir stocks fall below the Drought Control Line

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 To conserve 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 (beneficial)	Prohibiting or limiting non-essential use is considered to have no impact on biodiversity, flora and fauna, other than to acknowledge that reduced consumer demand for water will result in reduced requirement for abstraction from Yorkshire Water's sources and, therefore, potential for positive impacts on flow, sensitive habitats/species etc.	None	Minor beneficial
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Prohibiting or limiting non-essential use is considered to have no adverse impact on natural resources or ecosystem services. It is acknowledged that reduced consumer demand for water will result in reduced requirement for abstraction from Yorkshire Water's sources and, therefore, potential for positive impacts to support natural resources and ecosystem services. There is not expected to be any scope for delivery or provision of Biodiversity Net Gain as part of this option.	None	Moderate beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	n/a	n/a	n/a	n/a	n/a	n/a	The ban is likely to have no impact on avoiding the introduction or spreading of INNS, with reduced abstraction requirements leaving more water in river systems.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Prohibiting or limiting non-essential use will provide water savings which will contribute towards improving security of supply of water in the Yorkshire Water supply region. Drinking water quality will not be affected by the restrictions and there will be no impact on essential water uses that are necessary to maintain public health and well-being of the population served by Yorkshire Water.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	There may be potential for moderate impacts upon recreational activities due to restrictions on filling of swimming pools, watering of sports pitches, etc. There may be moderate impacts associated with the setting of tourist attractions, for example, water features and parks/gardens associated with popular tourist sites.	Moderate adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	Prohibiting or limiting non-essential use carries the risk of some economic impact on businesses that benefit directly or indirectly from certain water uses that would be prohibited under the ban (e.g. sports and leisure facilities). The ban may result in some business loss if the water-related operations have to be suspended.	Major adverse	None
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Low	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Prohibiting or limiting non-essential use will reduce the demand for water in the region, improving the efficiency of existing water resource use. It will not result in any increase in the generation of waste.	None	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Prohibiting or limiting non-essential use will actively promote efficient water resource management and sustainable management of natural resources.	None	Minor beneficial
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Low	Low	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Reductions in demand for water would result in a reduced requirement for increased abstraction from Yorkshire Water's sources, reducing associated impacts on surface water and groundwater quality during 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	4.2 To protect and enhance surface and groundwater levels and flows	Low	Low	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Prohibiting or limiting non-essential use will not directly result in, or modify any abstraction (surface water or groundwater). Reduction in demand for water will result in a reduced requirement for abstraction at Yorkshire Water's sources, minimising impacts on water levels and river flows in drought conditions.	None	Minor beneficial
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Low	Low	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Reduction in demand for water will result in reduced requirement for abstraction from Yorkshire Water's sources, helping provide some protection for water-dependent ecosystems.	None	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	This option 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 medium to long-term impacts on consumer water usage.	None	Minor beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	n/a	n/a	n/a	n/a	n/a	n/a	No impacts on geology, geomorphology and quality/quantity of soils are anticipated as a result of the drought order to ban non-essential use.	None	None
Air and Climate	6.1 To maintain and improve 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 the ban.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	n/a	n/a	n/a	n/a	n/a	n/a	Prohibiting or limiting non-essential use will not involve an increase in energy consumption or associated greenhouse gas emissions.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Low	Low	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Demand management measures are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Low	Low	Short-term	Temporary	Low (beneficial) Low (adverse)	Low (beneficial) Low (adverse)	There may be minor adverse impacts associated with the setting of some heritage assets, for example, visual impacts on registered parks and gardens and /or the grounds of listed buildings. Notwithstanding these impacts, prohibiting or limiting non-essential use is considered unlikely to have any direct impact on the historic environment, heritage assets and archaeologically important sites. There is the potential for reduced consumer demand for water to result in reduced requirement for abstraction at Yorkshire Water's sources, potentially reducing the magnitude of any drought-related effects on archaeology and cultural heritage assets.	Negligible adverse	Negligible beneficial
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Low	Low	Short-term	Temporary	Low (beneficial) Low (adverse)	Low (beneficial) Low (adverse)	There may be some localised adverse effects on townscapes and the setting of some visual amenities due to the ban on watering of gardens and grounds. However, 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. There is the potential for reduced consumer demand for water to result in reduced requirement for abstraction at Yorkshire Water's sources, potentially reducing the magnitude of any drought-related effects on landscape or visual amenity.	Negligible adverse	Negligible beneficial

Drought Plan Option Name: **Distribution Management - Increased leakage detection and repair activity**
Drought Plan Option Description: **Increased leakage detection and repair activity – increased find and fix activity, pressure management. Ensure that all maintenance programmes are up-to-date and undertake additional leakage control, leading to demonstrable water savings.**

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 To conserve 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	Permanent	Low (adverse) Low (beneficial)	Low (adverse) Medium (beneficial)	Construction activities associated with leakage detection and repair activities may result in disturbance to local habitats and species during the works. The majority of works are anticipated to be in an urban setting. Assuming best practice construction methods, impacts of 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, potential for positive impacts on flow and sensitive habitats/species.	Negligible adverse	Minor beneficial
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Long-term	Permanent	Low (adverse)	Low (adverse)	The majority of construction activity associated with leakage detection and repair activities is anticipated to be in an urban setting. Assuming best practice construction methods, impacts to natural resources and ecosystem services from any construction are anticipated to be negligible. There is not expected to be scope to provide biodiversity net gain during repair works.	Negligible adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Leakage detection, pressure management, and repair activities will not affect the spread of INNS.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	Medium	Long-term	Permanent	Low (beneficial)	High (beneficial)	The drought option will help to ensure levels of service are maintained through enabling provision of water that would have otherwise been lost to leakage helping to protect health and wellbeing.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Low	Short-term	Temporary	Low (adverse)	Low (adverse)	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 (likely to be urban) 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 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Low	Long-term	Permanent	Low (beneficial)	High (beneficial)	This drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Long-term	Permanent	Low (beneficial) Low (adverse)	Low (beneficial) Low (adverse)	Increased leakage reduction activity through 'fix and find' approaches, and appropriate pressure management, will result in the reduction of water lost in the supply network and therefore the energy and chemicals used to treat it. It will utilise existing infrastructure. Repairs may require raw materials. It has been assumed that any materials required would be obtained locally.	Negligible adverse	Negligible beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Medium	Medium	Long-term	Permanent	Low (beneficial)	Medium (beneficial)	Leakage reduction will actively promote efficient water resource management and sustainable management of natural resources.	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 To maintain or improve the quality of surface and groundwater resources	Medium (beneficial) Small (adverse)	Medium	Long-term (beneficial) Short-term (adverse)	Permanent (beneficial) Temporary (adverse)	Low (beneficial) Low (adverse)	Low (beneficial) Low (adverse)	Construction activities associated with leakage detection and repair activities may result in the impact on local surface and groundwater quality. Assuming best practice construction methods, impacts of 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	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Long-term	Permanent	Low (beneficial)	Medium (beneficial)	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.	None	Minor beneficial
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD	Medium	High	Long-term	Permanent	Low (beneficial)	Medium (beneficial)	The option will contribute to more sustainable abstractions by reducing the amount of water already abstracted that is lost through leakage.	None	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	n/a	n/a	n/a	n/a	n/a	n/a	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Small	High	Short-term	Temporary	Low (adverse)	Low (adverse)	Construction activities associated with increased leakage reduction activity and 'fix and find' approaches may result in localised disturbance to soil, geology and land use. However, repair activity will be on pipelines which are already in situ.	Negligible adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Small	Low	Short-term	Temporary	Low (adverse)	High (adverse)	Vehicle trips necessary for leakage detection and repair will cause emissions affecting air quality, including some within Air Quality Management Areas in Yorkshire Water's supply area.	Minor adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Medium	Medium	Short-term (adverse) Long-term (beneficial)	Temporary (adverse) Permanent (beneficial)	Low (beneficial) Low (adverse)	Medium (beneficial) Medium (adverse)	Vehicle trips necessary for leakage detection and repairs will cause greenhouse gas emissions. Leakage detection and repairs will result in the reduction of water lost in the supply network and long term energy savings associated with this decreased need for water treatment and pumping.	Minor adverse	Minor beneficial
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Long-term	Permanent	Low (beneficial)	High (beneficial)	Demand management measures are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Increased leakage reduction activity through 'fix and find' approaches, and changes to pressure management will be on pipelines which are already in situ, and as such, it is not anticipated that any sites of archaeological or cultural heritage importance will be affected. The setting of any surrounding heritage assets may be impacted for the short term, however, considering the option is an acceleration of ongoing leakage reduction activity this is considered negligible.	Negligible adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	The majority of works are anticipated to be in an urban setting. Assuming best practice construction methods, impacts of the construction phase are anticipated to be negligible. The scheme will have no direct effect on landscape and visual amenity in operation.	Negligible adverse	None

Drought Plan Option Name: North Area Reservoir 1

Drought Plan Option Description: Reduced compensation flow from North Area Reservoir 1 by 50% from 12.10 Ml/d to 6.05 Ml/d from the date the permit is granted and to reduce further to 4.03Ml/d to the receiving watercourse if Reservoir stocks are below the regional Drought Control Line for more than four consecutive weeks. This assessment is based on the Trigger 2 option with deployable output of 8.07 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 To conserve 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	Low	Short-term	Temporary	Medium (adverse)	High (adverse)	No construction/ new infrastructure is required. Three SSSIs are located within 5 km of the drought permit area. One SPA/SAC also lies within this distance. None of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit. Hydrogeological assessment and baseline groundwater monitoring indicate that 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 drought option is assessed as exerting varying levels of impact on NERC Act Section 41 species and other protected fauna. Minor effects are anticipated for bullhead, *Potamophylax rotundipennis, Stagnicola spp., Capnia atra and Riolus subviolaceus* . Moderate effects are predicted for brook lamprey, brown trout, water vole, white-clawed crayfish, *Ameletus inopinatus* and *Atherix ibis* . Major effects are expected for Atlantic salmon, European eel, brook lamprey and river lamprey due to habitat fragmentation, siltation, reduced flows and increased mortality risks. Overall, there is a moderate to major risk of deterioration to WFD fish and macroinvertebrate status, resulting in a moderate adverse effect on sensitive receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The drought permit is expected to cause major changes in river flows, resulting in major impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option will deliver 8.07 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	During drought conditions, river flows in the Pott Beck 1 reach will already be low, and any further reduction associated with the Leighton Reservoir drought permit is unlikely to significantly affect angling quality, as baseline drought flows are already limiting. A National Trail follows the River Ure and relies on the river as an important landscape feature, is assessed as not sensitive and unlikely to experience additional visual or recreational impacts beyond those already occurring under drought conditions. Canoeing is not identified as a receptor for this reach, and therefore no effects are anticipated.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Medium	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	Impacts towards reaches of two watercourse were considered in the assessment, including Pott Beck and the River Burn. There is one licenced fish farm presenting an environmental pressure in the impacted reaches in association with the drought option. There is a major risk that the drought option flow reduction would reduce the dissolved oxygen saturation and increase total ammonia concentrations downstream beyond values which support 'good' or 'high' status for fish and invertebrates without mitigation. Overall there is a major adverse effect on water quality as a result of the drought option.	Major adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 60 to 67%) over 9km associated reduction in wetted width of the impacted reaches. Major hydrological effects are anticipated on the impacted reaches.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Short-term	Temporary	High (adverse) Medium (beneficial)	Medium (adverse) Low (beneficial)	The drought option would be accompanied by water conservation campaigns to promote the efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of Pott Beck is anticipated to be moderate, while the risk to the River Burn is considered major. Overall, the impact on the affected reaches is assessed as major.	Major adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. 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.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option will not result in an increase in energy use, therefore, no changes to air quality are envisaged.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option will not result in an increase in energy use, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Nearby scheduled monuments are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the level of Pott Beck and River Burn will have a visual impact on one National Landscape. A national trail running alongside the River Ure, relies on the river as a key landscape feature.	Minor adverse	None

Drought Plan Option Name: North Area Reservoir 2

Drought Plan Option Description: Reduced compensation flow release from North Area Reservoir 2 by 50% from 0.46 Ml/d to 0.23 Ml/d from the date the permit is granted and to reduce further to 0.15Ml/d if regional reservoir stocks are below the regional Drought Control Line to the receiving watercourses. The Trigger 2 level of implementation has been used as the basis of this assessment with a deployable output of 0.31 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 To conserve 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	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	No construction works or new infrastructure is required to support this option. The drought permit modifies compensation flows only, so no direct physical habitat loss or ground disturbance is expected. The assessment identifies an SSSI and LNR in the vicinity of the reach. Both are assessed as not sensitive to the drought permit, with no further consideration required. Flow reduction associated with the option leads to major hydrological change, but resultant impacts on river habitat are described as moderate, principally through exposure of channel margins, reduced wetted area, and localised loss of shallow marginal habitats. Effects are expected to be short-term and to occur against a baseline of drought conditions. The drought option is assessed as having an impact on the following NERC Act Section 41 and other protected species due to fragmentation of habitats, increased mortality and siltation of spawning gravels as follows: *Graptodytes flavipes* is present historically with medium sensitivity. White-clawed crayfish, brown trout, bullhead have medium sensitivity and susceptible to reduced flow/habitat fragmentation Water vole presence uncertain so a precautionary assessment has been applied. The drought permits is assessed as having a moderate adverse effect on the most sensitive aquatic receptors, with no significant effects predicted for nearby statutory sites or landscape/recreation receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The drought permit will alter compensation flows, resulting in major hydrological changes in Holborn Beck 1, with moderate impacts anticipated on riverine habitats due to reduced wetted width and exposure of channel margins under drought conditions. These effects, however, occur against an existing drought baseline, and are generally local and temporary. As the option does not involve any construction activities or new infrastructure, there will be no physical habitat loss or direct disturbance, and therefore no requirement or opportunity for compensatory planting or habitat enhancement. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. The assessment does not identify the option as being within a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver 0.31 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	N/A	N/A	N/A	N/A	N/A	N/A	Recreational activities such as angling and canoeing are not identified as receptors within the Holborn Beck 1 assessment, and no evidence in the report indicates that these activities occur within the affected reach. As a result, the drought permit is not expected to significantly affect angling or canoeing, and these effects are not assessed for this option. Any recreational changes would in any case occur against a baseline of already reduced drought flows, but the assessment concludes that no sensitive recreational receptors are present within this reach	None	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	The drought option involves modifications to compensation flow only and no significant 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts of the drought option towards the River Laver and Kex Beck and the Laver were considered in the assessment. The local reported water quality is predominantly consistent with High or Good status and with only weak associations between reducing flow and poorer water quality. As such, there is a minor risk that there would be an decrease in the downstream dissolved oxygen saturation and increase total ammonia concentration beyond values which support 'good' or 'high' status for fish and invertebrates. Overall there is a minor effect on water quality as a result of the drought option.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%) over 2.2 km and minor reductions in low flows (up to 13%) over 10.4km with associated reduction in wetted width and depth. However, this would be localised where the bank is shallow. The drought option would not impact on the moderate to high flow regime in the receiving watercourses.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Low	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium (adverse) Low (beneficial)	The drought option would be accompanied by water conservation campaigns to promote the efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of the waterbody within which the reaches exist is anticipated to be minor. Overall, the impact on the affected reaches is assessed as minor.	Minor 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	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. 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.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves modifications to compensation flow only and will therefore not result in any emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option will not result in an increase in energy use, therefore, no changes to greenhouse gas emissions are envisaged. The use of existing infrastructure will minimise increases in greenhouse gas emissions.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Nearby scheduled monuments and heritage sites are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Moderate	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the level of the affected reach would have a visual impact on the National Landscape. However, there is limited access to the impacted reach with no national trails.	Minor adverse	None

Drought Plan Option Name: North Area Reservoir 3

Drought Plan Option Description: Reduce group compensation release by 50% to 0.38Ml/d from the date the permit is granted and to reduce group compensation further to 0.25Ml/d if regional reservoir stocks are below the regional Drought Control Line. Provides deployable output of 0.5 Ml/d (Trigger 2).

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 To conserve 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	Low	Short-term	Temporary	Medium (adverse)	High (adverse)	The scheme does not involve construction works or new infrastructure. There are no SSSIs, SPAs or SACs within 5km. There are no Ramsar sites within 10km. There are ancient woodlands within 2km of the study area. There are no Local or National Nature Reserves within 1km. The drought option is anticipated to have major impacts on river flows which will result in major impacts on river habitats due to impacts on wetted width, especially in shallow areas of the channel, potentially reducing habitat availability. The drought option is assessed as having an impact on the following NERC Act Section 41 and other protected species due to due fragmentation of habitats, increased mortality and siltation of spawning gravels: Major impact on brown trout Moderate impact on bullhead, water vole, white-clawed crayfish, Stictonectes lepidus and a minor impact on Hydraena palustris. Overall there will be a moderate to major risk of deterioration of WFD status receptors (macroinvertebrates and fish). Overall, the effect on designated sites, habitats and species is assessed as moderate adverse.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. The scheme may influence river flows and, consequently, the regional hydrological cycle, with major impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver 0.5 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Flows during a drought will be low such that further reduction in flows would not be likely to further reduce the angling quality of the reach. However, the impact of the drought option is unlikely to be significant against a baseline of drought conditions.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	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)**
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Medium	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards water quality in the reaches of the Oak Beck watercourse were considered in the assessment. There are no significant continuous discharges either within Oak Beck or at risk from changes in flow in the reach. However, there is a moderate risk of short term acute, infrequent, temporary water quality pressures to ammonia and dissolved oxygen locally downstream of 22 Combined Sewer Overflows (CSOs) during rainfall events, with the potential to present a significant environmental risk in the reach. Overall there is a moderate risk to water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major short-term reduction in low flows (67%), with associated reduction in wetted width and depth over a 11.8 km stretch of impacted reaches. Overall major impacts are anticipated towards river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium (adverse) Low (beneficial)	The drought option would be accompanied by water conservation campaigns to promote the efficient use of water to protect the environment and safeguard supplies. The risk to the WFD Status of the impacted reaches is moderate.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves modifications to compensation flow only and will therefore not result in any emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option will not result in an increase in energy use, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Nearby scheduled monuments are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	The nearby National Landscape upstream of Beaver Dyke Reservoir contains water-dependent habitats, and there is a Golf Course downstream at Harrogate. It is unlikely that either of these receptors would experience significant visual impacts as a result of the scheme.	Negligible adverse	None

Drought Plan Option Name: North Area Reservoir 4

Drought Plan Option Description: Reduced Compensation Flow Release for North Area Reservoir 4 to reduce the compensation release by 50% to 9.09Ml/d from the date the permit is granted and to reduce further to 6.06Ml/d if regional reservoir stocks are below the regional Drought Control Line. The deployable output is up to 12.13 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	High (adverse)	No construction/ new infrastructure is required. The drought permit is predicted to cause major reductions in river flow, resulting in major impacts on river habitats, including reduced wetted area, disrupted connectivity and altered channel energy. The overall risk to species-specific habitat availability is moderate. Statutory designated sites (SSSI, SPA, SAC) within 5 km are identified but none are considered sensitive or susceptible to drought-related impacts. Major impacts are expected for water vole, due to water-quality deterioration, fluctuating water levels, habitat contraction and increased predation. NERC fish species—Atlantic salmon, brown trout, European eel, river and brook lamprey—also face major impacts, driven by siltation of spawning grounds, habitat fragmentation and elevated mortality risk. Several fish and invertebrate species, including grayling, bullhead, *Atherix ibis, Paraleptophlebia cincta, Psychomyia fragilis, Rhyacophila fasciata/septentrionis* and *Wormaldia subnigra* , will experience moderate impacts, while *Potamophylax rotundipennis* is expected to be only minorly affected. Macroinvertebrate WFD status may decline moderately but impacts are temporary and reversible. In contrast, WFD fish status is predicted to undergo major deterioration. Migratory fish may also be impeded by existing weirs under low-flow conditions. Overall, the effect on designated sites, habitats and species is major adverse.	Major adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Medium (adverse)	High (adverse)	The drought permit is expected to cause major reductions in river flows, leading to major impacts on riverine habitats, including loss of wetted area, disrupted channel connectivity and altered hydraulic conditions. As the option does not involve any construction or physical works, no direct habitat loss or physical disturbance will occur, and consequently no compensatory planting or habitat enhancement measures are applicable. The site assessment does not identify the option as being within a designated Nature Improvement Area, and no such designation is referenced for the Lindley Wood reach in the environmental appraisal. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	The implementation of this drought permit is not anticipated to increase the spread of aquatic invasive non-native species because the flows within the rivers will be lower. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought permit will help to maintain essential public water supplies during drought conditions and therefore help maintain public health and well-being. The drought option will provide 12.13 Ml/d (Trigger 2).	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	N/A	N/A	N/A	N/A	N/A	N/A	Recreational effects for the Lindley Wood drought permit are expected to be minimal. The National Landscape is assessed as not sensitive, and no significant visual or recreational impacts are anticipated. Angling and other recreational uses are not expected to deteriorate further, as conditions already reflect baseline drought impacts.	None	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short term	Temporary	Medium (beneficial)	Medium (beneficial)	Implementation of the drought permit will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short term	Temporary	Low (beneficial)	Medium (beneficial)	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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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

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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards water quality in the River Washburn (Washburn Spinksburn Bk (Swinsty Res) to Wharfe (GB104027064020)) were considered in the assessment. There is a major risk in relation to a licenced fish farm that the drought option flow reduction would increase the downstream total ammonia concentration above values which support 'good' or 'high' status for fish, which are required to maintain the current WFD status for fisheries and macroinvertebrates without mitigation. Overall there is a major risk to water quality as a result of the drought option.	Major adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short term	Temporary	High (adverse)	Medium (adverse)	The drought permit will temporarily reduce compensation flow release, leading to a major hydrological impact on the reach. The drought permit will lead to a major reduction in low flows (67%), with associated reduction in wetted width and depth over a 4.3km stretch of impacted reach.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Medium	Short term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought option would be accompanied by water conservation campaigns to promote the efficient use of water to protect the environment and safeguard supplies. The risk to the WFD Status of the impacted reach is moderate.	Moderate adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. . 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.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought permit involves modification to compensation flow only, no construction-related air emissions or changes to energy use are anticipated. There are no AQMA nearby.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought permit involves modifications to compensation flow only. No changes to greenhouse gas emissions, are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought permits are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought which may become more prevalent due to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	No known water-dependent cultural heritage or archaeology sites are located within or adjacent to the impacted reaches.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short term	Temporary	Low (adverse)	Low (adverse)	The river reach partially lies within a National Landscape. While a major flow reduction could alter visual appearance, the assessment explicitly finds no significant landscape/visual sensitivity. Impacts are expected to be local and short term. The drought permit will enable higher water levels to be maintained for longer in North Area Reservoir 4 (less shoreline exposure), but the receiving reach will experience lower water levels.	Negligible adverse	None

Drought Plan Option Name: **North Area Reservoir 5**

Drought Plan Option Descripti **The drought permit application for North Area reservoir 5 is to reduce the compensation release by 50% to 8.45Ml/d in winter, 4.10Ml/d in spring and autumn, and 1.95Ml/d in summer from the date the permit is granted. A further reduction to 5.63Ml/d in winter, 2.73Ml/d in spring and autumn, and 1.30Ml/d in summer if regional reservoir stocks are below the Regional Drought Control Line. This assessment is based on the Trigger 2 option with deployable output of up to 11.27 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 To conserve 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	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. An SAC/SPA lies upstream but not hydrologically connected or considered sensitive or susceptible to potential impacts from the drought permit. A nearby NERC Lowland Fen habitat is expected to experience minor impacts, mainly due to habitat degradation and reduced hydrological connectivity. The reservoir is located downstream and within 1km of an the West Nidderdale, Barden and Blubberhouse SSSI. Minor impacts on NERC habitat lowland fen are anticipated due to habitat degradation and loss of connectivity. Two areas of ancient woodland are located immediately downstream of the reservoir. The drought option would lead to a major reduction in river flows, resulting in moderate impacts on river habitats, including reduced wetted width—particularly in shallow sections—thereby limiting habitat availability for aquatic species. Major impacts are anticipated for brown trout and brook lamprey, with moderate effects expected for water vole and bullhead, driven by reduced connectivity, siltation of spawning gravels and fragmentation of suitable habitat. There is a moderate risk of deterioration to both WFD macroinvertebrate and WFD fish status.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with moderate impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The assessment does not identify the option as being within a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option will deliver up to 11.27 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Canoeing is known to occur within the Washburn catchment; however, the activity is assessed as not sensitive, and the drought permit is not expected to significantly affect canoeing opportunities. Any reduction in flows would occur under baseline drought conditions rather than as a direct result of the drought permit.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option involves modifications to compensation flow only and no significant changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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

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 To maintain or improve the quality of surface and groundwater resources	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Impacts towards reaches of the River Washburn were considered in the assessment. The water quality is described as supporting high WFD status for fish and invertebrates without the drought option. Water quality indicators including dissolved oxygen saturation, total ammonia concentration saturation and orthophosphate concentrations throughout the study area are assessed to be at minor risk of deterioration during the implementation of the drought option. Overall there is a minor risk to water quality as a result of the drought option.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would result in a major reduction in low flows—up to 67%—across the 2.9 km Washburn 1 reach, leading to corresponding reductions in wetted width and channel depth. While these reductions occur throughout the reach, loss of wetted habitat would be most pronounced in shallower sections of the channel, where margins are more sensitive to declining flows.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Low	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Low (adverse) Low (beneficial)	The drought option would be accompanied by water conservation campaigns to promote the efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of Washburn is anticipated to be minor. Overall, the impact on the affected reaches is assessed as minor.	Minor adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites, however, there may be some impacts on geomorphology including bank erosion when higher flows return.	Negligible adverse	None
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves modifications to compensation flow only and will therefore not result in any emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option will not result in an increase in energy use, therefore, no changes to greenhouse gas emissions are envisaged. The use of existing infrastructure will minimise increases in greenhouse gas emissions.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought which may become more prevalent due to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Nearby scheduled monuments and heritage sites are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short term	Temporary	Low (adverse)	Low (adverse)	The river reach wholly lies within a National Landscape. A major hydrological impact on the River Washburn will adversely impact the visual amenity of this landscape. However, the impacts are expected to be local and short term. The drought permit will enable higher water levels to be maintained for longer in North Area Reservoir 6 (less shoreline exposure), but the receiving reach will experience lower water levels.	Negligible adverse	None

Drought Plan Option Name: North West Area Reservoir 1a
Drought Plan Option Description: Reduced compensation flow release from North West Area Reservoir 1a (both as a minimum and combined with North West Area Reservoir 1b) by 50% from 3.5-6.5 Ml/d to 1.75-3.25 Ml/d or by 67% (Trigger 2) to 1.155-2.145 Ml/d. Deployable output is between 1.685-4.35Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There is one SAC/SSSI/SPA within 5km of the option. None of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit as the moors are upstream of the impacted reach. The gradients between the moor and the valley are sufficiently steep that there would be no hydrodynamic connectivity between channel and the moor, particularly during dry conditions. Four NERC Act Section 41 habitats or other notable or protected habitats have been identified within 500 m of the area, however none are deemed sensitive as they are not hydrodynamically connected to the affected reach. Major to minor impacts to river flows are anticipated across the river reaches associated with this option. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. The drought option is assessed as having an impact on the following NERC and notable species: Major impact on brown trout, brook lamprey and river lamprey. Moderate impact bullhead. Minor impact on *Potamophylax rotundipennis* and *Sialis nigripes* . Overall there is a major risk of deterioration of WFD status (fish) and a moderate risk of deterioration of WFD status (invertebrates), resulting in a moderate adverse effect on sensitive receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with major to minor impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (adverse)	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow, however, there remains a minor risk of spread of INNS which use downstream drift as its primary dispersal mechanism. This poses a potential ecological risk from the species and could result in marked ecological change, leading to decreased diversity in the invaded range by competing with or preying upon a broad range of invertebrates. The EARs identided Demon shrimp (Dikerogammarus haemobaphes) to be present in the reach and of medium sensitivity though there is uncertainty around whether the implementation of this drought option will increase the spread of this species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	Minor adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver up to 4.35 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is extensive non-club administered angling along the River Worth. However, flows during a drought will be low such that further reduction in flows would not be likely to further reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards one watercourse were considered in the assessment. There are no significant continuous or intermittent discharges at risk from changes in flow in the reach. There is a moderate risk to phosphate concentrations from the drought option associated with change in dilution of diffuse pollution pressures. There is also minor risk to dissolved oxygen concentration below values which support good WFD status for fish and invertebrates and a minor risk to total ammonia. Overall there is a moderate effect on water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	Major (adverse)	Medium (adverse)	The drought option would lead to a major to moderate reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 2.9 km stretch of the impacted reaches. Major hydrological effects are anticipated on the impacted reaches.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. The drought option would be accompanied by water conservation campaigns to promote the efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of the river reaches is anticipated to be moderate to minor. Overall, the impact on the affected reaches is assessed as moderate.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. 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. A number of historic landfill sites are located in close proximity to the impacted reaches, however, no construction activities are proposed and the option would not disturb the historic landfill site or alter local groundwater conditions. Therefore, no pathway exists by which contaminants associated with the landfill could be mobilised and no significant effects are anticipated.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There are a number of listed buildings in close proximity to the impacted reaches however none are deemed to water dependent. No scheduled monuments are located within proximity to the impacted reaches. No significant effects are anticipated.	Negligible adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	The drought option involves no construction, land-take, or physical alteration of the channel or banks, there would be no permanent change to the visual character of the landscape. Flows would be reduced during drought conditions by up to 67%, but this would not significantly alter the landscape character and no significant visual or landscape effects are anticipated.	Negligible adverse	None

Drought Plan Option Name: North West Area Reservoir 1b
Drought Plan Option Description: Reduced compensation flow release from North West Area Reservoir 1b (both as a minimum and combined with North West Area Reservoir 1a) by 50% from 3.5-6.5 Ml/d to 1.75-3.25 Ml/d or by 67% (Trigger 2) to 1.155-2.145 Ml/d. Deployable output is between 1.685-4.35Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There is one SAC/SPA/SSSI within 5km of the option. None of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit as the moors are upstream of the impacted reach. The gradients between the moor and the valley are sufficiently steep that there would be no hydrodynamic connectivity between channel and the moor, particularly during dry conditions. One NERC Act Section 41 habitat or other notable or protected habitat has been identified within 500 m of the area, however it is not deemed sensitive as it is not hydrodynamically connected to the affected reach. Major impacts to river flows are anticipated. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. The drought option is assessed as having an impact on the following NERC and notable species: Major impact on brown trout, brook lamprey and river lamprey. Moderate impact on *Oreodytes davisii* and bullhead. Minor impact on *Potamophylax rotundipennis*. Overall there is a major risk of deterioration of WFD status (fish) and a moderate risk of deterioration of WFD status (invertebrates), resulting in a moderate adverse effect on sensitive receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with major to minor impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (adverse)	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow, however, there remains a minor risk of spread of INNS which use downstream drift as its primary dispersal mechanism. This poses a potential ecological risk from the species and could result in marked ecological change, leading to decreased diversity in the invaded range by competing with or preying upon a broad range of invertebrates. The EARs identified Demon shrimp (Dikerogammarus haemobaphes) to be present in the reach and of medium sensitivity though there is uncertainty around whether the implementation of this drought option will increase the spread of this species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	Minor adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver up to 4.35 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is extensive non-club administered angling along the River Worth. However, flows during a drought will be low such that further reduction in flows would not be likely to further reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards one reach was considered in the assessment. There are no significant continuous or intermittent discharges at risk from changes in flow in the reach. There is a moderate risk to phosphate concentrations from the drought option associated with change in dilution of diffuse pollution pressures. There is also minor risk to dissolved oxygen concentration below values which support good WFD status for fish and invertebrates and a minor risk to total ammonia. Overall there is a moderate effect on water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with associated reduction in wetted width and depth over a 1.0 km stretch of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. The drought option would be accompanied by water conservation campaigns to promote the efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of the river reaches is anticipated to be moderate to minor. Overall, the impact on the affected reaches is assessed as moderate.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Small	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. 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. A number of historic landfill sites are located in close proximity to the impacted reaches, however, no construction activities are proposed and the option would not disturb the historic landfill site or alter local groundwater conditions. Therefore, no pathway exists by which contaminants associated with the landfill could be mobilised and no significant effects are anticipated.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There are a number of listed buildings in close proximity to the impacted reaches however none are deemed to water dependent. No scheduled monuments are located within proximity to the impacted reaches. No significant effects are anticipated.	Negligible adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	The drought option involves no construction, land-take, or physical alteration of the channel or banks, there would be no permanent change to the visual character of the landscape. Flows would be reduced during drought conditions by up to 67%, but this would not significantly alter the landscape character and no significant visual or landscape effects are anticipated.	Negligible adverse	None

Drought Plan Option Name: North West Area Reservoir 4
Drought Plan Option Description: Reduced compensation flow release from North West Area Reservoir 4 from 1.80-3.60 Ml/d to 1.20 - 0.60 Ml/d. Deployable output is up to 2.4Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There is one SAC/SPA within 5km of the option. There are 3 SSSIs within the same distance. None of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit. One NERC Act Section 41 habitats or other notable or protected habitats with sensitivity to drought permit impacts have been identified within 500 m of the area. This site is the impacted reach and supports aquatic receptors. The impacts to this habitat are assessed as moderate. Major impacts to river flows are anticipated across the river reaches associated with this option. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. The drought option is assessed as having an impact on the following NERC and notable species: Moderate impact on *Atherix ibis* , Bullhead, White-clawed crayfish, Grayling, Water vole, Brown Trout Minor impact on *Potamophylax rotundipennis* . Overall there is a moderate risk of deterioration of WFD status of fish and invertebrates, resulting in a moderate adverse effect on sensitive receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with moderate impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver up to 2.40Ml/d, helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on the impacted reach. However, flows during a drought will be low such that further reduction in flows would not be likely to further reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches of the Harden Beck watercourse were considered in the assessment. One WwTW presents risk of medium-term chronic, regular, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) downstream of the WwTW. The risk of water quality deterioration below what supports good WFD status for fish and invertebrates is moderate for dissolved oxygen and total ammonia. Overall there is a moderate to minor risk to water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with associated reduction in wetted width and depth over 7.9 km of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status Denholme Beck and Harden Beck reaches is anticipated to be minor and moderate respectively. Overall, the impact on the affected reaches is assessed as moderate.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	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)**
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. 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.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are no heritage assets or sites of archaeological importance within proximity to the impacted reaches.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the flow level of the impacted reaches would have a visual impact on the landscape setting of several national trails that run alongside Denholme Beck. However, the reduced flow of the reaches would be short-term and temporary.	Minor adverse	None

Drought Plan Option Name: North West Area Reservoir 5
Drought Plan Option Description: Reduced compensation flow release from North West Area Reservoir 5 from 6.30 Ml/d to 2.10 Ml/d. Deployable output is up to 4.2Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There is one South Pennine Moors SAC/SPA within 5km of the option. There are 6 SSSIs within the same distance. None of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit. One NERC Act Section 41 protected habitat with sensitivity to drought permit impacts has been identified within 500 m of the area. This site is the impacted reach and supports aquatic receptors. The impacts to this habitat are assessed as moderate. Major to minor impacts to river flows are anticipated across the river reaches associated with this option. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. The drought option is assessed as having an impact on the following NERC and notable species: Moderate impact on *Atherix ibis* , White-clawed crayfish, Otter, Water vole, Brown Trout, Bullhead and Grayling Minor impact on Barbel. Overall there is a moderate risk of deterioration of WFD status (fish and invertebrates), , resulting in a moderate adverse effect on sensitive receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with moderate to minor impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	No INNS receptors that are sensitive or susceptible to drought permit impacts have been identified. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver up to 4.20Ml/d, helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Low	Short-term	Temporary	Medium (adverse)	Low (adverse)	Casual angling only. Flows during a drought will be low such that further reduction in flows would not be likely to further reduce the angling quality of the reach. The routes of several national trails run alongside Harden Beck. The river forms part the landscape setting of the trails. Unlikely to be impacted over the duration of the drought options implementation	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches of Harden Beck, the River Aire and River Calder were considered in the assessment. Water quality pressures include one WwTW. There is also risk of short term acute, infrequent, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) locally downstream of 21 Combined Sewer Overflows (CSOs) during rainfall events. There is a moderate risk that there would be an increase in total ammonia concentration above values which supports good WFD status for fish and invertebrates. There is also moderate risk that there would be a decrease in dissolved oxygen concentration below values which support good WFD status for fish and invertebrates. Overall there is a moderate to minor risk to water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with associated reduction in wetted width and depth over 12.8km of the impacted reaches. Major to minor hydrological impacts are anticipated towards the impacted reaches.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of the river reaches is anticipated to be moderate to minor. Overall, the impact on the affected reaches is assessed as moderate.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	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)**
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. 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.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is one scheduled monument but it is unlikely to be impacted over the duration of the drought options implementation.	Negligible adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the level of Harden Beck would have a visual impact on the landscape setting of several national trails that run alongside Harden Beck. However, the reduced flow of the reaches would be short-term and temporary. There are no landscape designations in proximity to the impacted reaches of the drought option.	Minor adverse	None

Drought Plan Option Name: North West Area Reservoir 6
Drought Plan Option Description: Reduced compensation flow release from North West Area Reservoir 6 from 1.00 Ml/d to 0.33 Ml/d. Deployable output is up to 0.67Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There is one SAC/SPA within 5km of the option. There are 7 SSSIs within the same distance. None of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit. No NERC Act Section 41 habitats or other notable or protected habitats with sensitivity to drought permit impacts have been identified within 500 m of the area. Due to the presence of obstructions within the waterbody preventing upstream migrations there is less chance of natural recovery. The drought option is assessed as having an impact on the following NERC and notable species: Major impact on Brown Trout. Moderate impact on Bullhead, Water vole and European eel Minor impact on Barbel and Grayling Otters are known to use the catchment. Further consideration would be necessary to determine to what extent or how they may be impacted by reduced flows caused by the drought option. Overall there is a moderate risk of deterioration of WFD status (fish and invertebrates), resulting in a moderate adverse effect on sensitive receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with major to minor impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	No INNS receptors that are sensitive or susceptible to drought permit impacts have been identified. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver up to 0.67 Ml/d, helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Low	Short-term	Temporary	Low (adverse)	Low (adverse)	Formal angling under the Bingley Angling club along the River Aire. Flows during a drought will be low such that further reduction in flows would not be likely to further reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards reaches of the River Aire to River Calder. were considered in the assessment. Water quality pressures associated with this drought option include intermittent impacts from short-term, acute, infrequent, and temporary events such as ammonia toxicity and oxygen depletion occurring locally downstream of 23 Combined Sewer Overflows (CSOs) during rainfall events. There is a moderate to minor risk of increased total ammonia concentrations exceeding thresholds that support good WFD status for fish and invertebrates, as well as a potential decrease in dissolved oxygen levels falling below values required to maintain this status. Overall there is a moderate risk to water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	Major (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with associated reduction in wetted width and depth over 9.9km of the impacted reaches. Major to minor hydrological impacts are anticipated towards the impacted reaches. However, these impacts will be short-term and temporary.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of the river reaches is anticipated to be moderate to minor. Overall, the impact on the affected reaches is assessed as moderate.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	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)**
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. 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.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are several scheduled monuments within proximity to the impacted reaches. However, these are not water dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the level of Loadpit Beck and the Aire reaches would have a short-term and temporary visual impact on the alongscape setting of two National Trails which run alongside these reaches. There are no landscape designations in proximity to the impacted reaches of the drought option.	Minor adverse	None

Drought Plan Option Name: North West Area Reservoir 7
Drought Plan Option Description: Reduced compensation flow release from North West Area Reservoir 7 from 0.71 Ml/d to 0.24 Ml/d. Deployable output is 0.47 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There is one SAC/SPA within 5km of the option. There are 4 SSSIs within the same distance. None of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit. No NERC Act Section 41 habitats or other notable or protected habitats with sensitivity to drought permit impacts have been identified within 500 m of the area. Moderate to minor impacts to river flows are anticipated across the river reach associated with this option. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. The drought option is assessed as having an impact on the following NERC and notable species: Low impact on *Dixa maculata* Low impact on Bullhead Overall there is a moderate risk of deterioration of WFD status (fish and invertebrates), resulting in a moderate adverse effect on sensitive receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with minor impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	No invasive species were identified for the affected reach.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver up to 0.47 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Low	Short-term	Temporary	Low (adverse)	Low (adverse)	The presence of angling on Jum Beck is unknown. Flows during a drought will be low such that a further reduction in flow is not likely to reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards reaches of the Gill Beck watercourse were considered in the assessment. There is a moderate risk of deterioration of WFD status associated with phosphate and minor risks associated with increased total ammonia concentrations exceeding thresholds that support good WFD status for fish and invertebrates, as well as a potential decrease in dissolved oxygen levels falling below values required to maintain this status. Overall there is a moderate risk to water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	Major (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with associated reduction in wetted width and depth over 1km of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches and to flow depleted reaches. However, these impacts will be short-term and temporary.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of the river reach is anticipated to be moderate to minor. Overall, the impact on the affected reaches is assessed as moderate.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. 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.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	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	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are no heritage assets or sites of archaeological importance in proximity to the impacted reaches of the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	N/A	N/A	N/A	N/A	N/A	N/A	There are no landscape assets in proximity to the impacted reaches of the drought option.	None	None

Drought Plan Option Name: North West Area Reservoir 8
Drought Plan Option Description: Reduced compensation flow release from North West Area Reservoir 8 from 0.43 Ml/d to 0.14 Ml/d. Deployable output is up to 0.29Ml/d (Trigger 2).

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 To conserve 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	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There is one SAC/SPA within 5km of the option. There are 5 SSSIs within the same distance. None of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit. No NERC Act Section 41 habitats or other notable or protected habitats with sensitivity to drought permit impacts have been identified within 500 m of the area. One has low sensitivity and is likely to be in connectivity with impacted reach and support aquatic receptors. Major to minor impacts to river flows are anticipated across the river reaches associated with this option. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. The drought option is assessed as having an impact on the following NERC and notable species: Major impact on White-clawed crayfish, European eel and Brown trout, Bullhead Major impact on *Atherix ibis* and *Dixa maculata* Major impact on Otter (*Lutra lutra)* Overall there would be a major risk of deterioration of WFD status of fish and moderate for Macroinvertebrates), resulting in a moderate adverse effect on sensitive receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with major impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (adverse)	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow, however, there remains a minor risk of spread of the *Dikerogammarus haemobaphes* species which uses downstream drift as its primary dispersal mechanism. This poses a potential ecological risk from the species and could result in marked ecological change, leading to decreased diversity in the invaded range by competing with or preying upon a broad range of invertebrates. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	Minor adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver up to 0.29Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Low	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on the impacted reaches. However, flows during a drought will be low such that further reduction in flows would not be likely to further reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches of the Gill Beck watercourse were considered in the assessment. There is a moderate risk of deterioration of WFD status associated with phosphate and minor risks associated with increased total ammonia concentrations exceeding thresholds that support good WFD status for fish and invertebrates, as well as a potential decrease in dissolved oxygen levels falling below values required to maintain this status. Overall there is a moderate risk to water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	Major (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with associated reduction in wetted width and depth over 6.4 km of the impacted reaches. Major to minor hydrological impacts are anticipated towards the impacted reaches.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Medium	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of the river reaches is anticipated to be moderate to minor. Overall, the impact on the affected reaches is assessed as moderate.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	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 To consider the need for adaptive measures for climate change.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are four Scheduled Monuments in proximity to the impacted reaches. However, they are not water dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	A significant reduction in flow levels would have a visual impact on the landscape setting of a National Trail which runs alongside Weecher Brow Beck. However, the reduced flow of the reaches would be short-term and temporary.	Negligible adverse	None

Drought Plan Option Name: North West Area Reservoir 9
Drought Plan Option Description: Reduced compensation flow release from North West Area Reservoir 9 from 1.19 Ml/d to 0.40 Ml/d. Deployable output is 0.79Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There is one SAC/SPA within 5km of the option. There are 4 SSSIs within the same distance . None of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit. No NERC Act Section 41 habitats or other notable or protected habitats with sensitivity to drought permit impacts have been identified within 500 m of the area. Major to minor impacts to river flows are anticipated across the river reaches associated with this option. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. The drought option is assessed as having an impact on the following NERC and notable species: Major impact on White-clawed crayfish, Brown trout, Brook lamprey Moderate impact on Bullhead and Water Vole Minor impact on *Atherix ibis* Overall there is a moderate risk of deterioration of WFD status on macroinvertebrates and fish, resulting in a moderate adverse effect on sensitive receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with major to minor impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (adverse)	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow, however, there remains a minor risk of spread of the *Dikerogammarus haemobaphes* species which uses downstream drift as its primary dispersal mechanism. This poses a potential ecological risk from the species and could result in marked ecological change, leading to decreased diversity in the invaded range by competing with or preying upon a broad range of invertebrates. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	Minor adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver up to 0.79Ml/d, helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on Eller Beck. However, flows during a drought will be low such that a further reduction in flow is not likely to reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards reaches of the Haw Beck and Eller Beck watercourses were considered in the assessment. Water quality pressures associated with this drought option include intermittent impacts from short-term, acute, infrequent, and temporary events such as ammonia toxicity and oxygen depletion occurring locally downstream of a Combined Sewer Overflow (CSO) during rainfall events. There is a moderate to minor risk of total ammonia concentrations exceeding thresholds that support good WFD status for fish and invertebrates, along with a potential decrease in dissolved oxygen levels below the values required to maintain this status. Additionally, there is a moderate risk related to phosphate, associated with reduced dilution of diffuse pollution pressures. Overall there is a moderate adverse effect on water quality as a result of the drought option.	Moderate 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)**
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major to minor reduction in low flows, with an associated reduction in wetted width and depth over 6.8 km of the impacted reaches. Major hydrological effects are anticipated on the impacted reaches and to flow depleted reaches. However, these impacts will be limited to the low flow regime of the water course.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of the river reaches is anticipated to be moderate to minor. Overall, the impact on the affected reaches is assessed as moderate.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. 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.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	One Scheduled Monument is in proximity to the impacted reaches of the drought option. However, the monument is not water dependent and would not be affected by implementation of the drought measure.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short term	Temporary	Low (adverse)	Low (adverse)	The river reach partially lies within a National Park. A major hydrological impact on the Eller Beck will adversely impact the visual amenity of this landscape. The river reach forms a small portion of the National Park, and therefore impacts are expected to be local and short term. The drought permit will enable higher water levels to be maintained for longer in North West Area Reservoir 9 (less shoreline exposure), but the receiving reach will experience lower water levels.	Negligible adverse	None

Drought Plan Option Name: North West Area Reservoir 10
Drought Plan Option Description: Reduced compensation flow release from North West Area Reservoir 10 from 3.80-15.10 Ml/d to 1.27-5.03 Ml/d. Deployable output is up to 10.07Ml/d (Trigger 2).

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 To conserve 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	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There is one SAC/SPA/SSSI within 5km of the option. There are 6 SSSIs within the same distance. None of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit. No NERC Act Section 41 habitats or other notable or protected habitats with sensitivity to drought permit impacts have been identified within 500 m of the area. Major impacts to river flows are anticipated across the river reach associated with this option. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. The drought option is assessed as having an impact on the following NERC and notable species: Major impact on White-clawed crayfish, Brown trout and Atlantic salmon. Moderate impact on Bullhead. Minor impact on *Potamophylax rotundipennis* Overall there is a moderate risk of deterioration of WFD status for macroinvertebrates and major for fish, resulting in a moderate adverse effect on sensitive receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with major impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	No INNS receptors that are sensitive or susceptible to drought permit impacts have been identified.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option will deliver up to 10.07 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Low	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on (River Dibb and Barben Beck. However, flows during a drought will be low such that a further reduction in flow is not likely to reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards reaches of the Barben Beck/River Dibb Catchment watercourse were considered in the assessment. Water quality is described as typically supporting high WFD status for fish and invertebrates without the drought option. Water quality throughout the study area assessed as at low risk of deteriorating, from implementation of the drought option. Overall there is a minor risk to water quality as a result of the drought option.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	Major (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over 5.2 km of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of the river reaches is anticipated to be minor. Overall, the impact on the affected reaches is assessed as minor.	Minor adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	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)**
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	One Scheduled Monument is in proximity to the impacted reaches. However, it is not water dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	The river reach wholly lies within a National Park. A major hydrological impact on the River Dibb may adversely impact the visual amenity of this landscape. Some impacts are expected to be local and short term. The drought permit will enable higher water levels to be maintained for longer in North West Area Reservoir 10 (less shoreline exposure), but the receiving reach will experience lower water levels.	Negligible adverse	None

Drought Plan Option Name: North West Area Reservoir 11

Drought Plan Option Description: Reduced compensation flow release from North West Area Reservoir 11 from 2.41 Ml/d to 0.80 Ml/d. Deployable output is up to 1.61Ml/d (Trigger 2).

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 To conserve 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	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There is one SAC/SPA/SSSI within 5km of the option. None of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit. No NERC Act Section 41 habitats or other notable or protected habitats with sensitivity to drought permit impacts have been identified within 500 m of the area. Major impacts to river flows are anticipated across the river reach associated with this option. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. The drought option is assessed as having an impact on the following NERC and notable species: Major impact on Brown Trout. Moderate impact on *Atherix ibis* , Bullhead and Grayling Overall there is a moderate risk of deterioration of WFD status for macroinvertebrates and major for fish, resulting in a moderate adverse effect on sensitive receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with major impacts anticipated on riverine habitats. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver up to 1.61Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Low	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on Silsden Beck. However, flows during a drought will be low such that a further reduction in flow is not likely to reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards reaches of the Silsden Beck watercourse were considered in the assessment. There is a low risk of deterioration of WFD status associated with dissolved oxygen, ammonia and phosphate in the impacted reaches. Overall there is a minor risk to water quality as a result of the drought option.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over 3km of Silsden Beck. Major hydrological impacts are anticipated towards the impacted reaches. However, these impacts will be limited to the low flow regime of the water course.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of the river reaches is anticipated to be minor. Overall, the impact on the affected reaches is assessed as minor.	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)**
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are no heritage assets or sites of archaeological importance in proximity to the impacted reaches of the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	A significant reduction in the level of Silsden Beck would have a visual impact on the landscape setting of the National Trail which runs near Silsden Beck. However, the reduced flow of the reaches would be short-term and temporary.	Negligible adverse	None

Drought Plan Option Name: North West Area Reservoir 12

Drought Plan Option Description: Reduced compensation flow release from North West Area Reservoir 12 from 0.085 Ml/d to 0.028 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 To conserve 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	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	There is two and SAC/SPA within 5km of the option. There are 4 SSSIs within the same distance. The impacted reach partially lies within one SSSI/SAC/SPA. However, none of these statutory designated sites are considered sensitive or susceptible to potential impacts from the drought permit. No NERC Act Section 41 habitats or other notable or protected habitats with sensitivity to drought permit impacts have been identified within 500 m of the area. Major impacts to river flows are anticipated across the river reach associated with this option. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. The drought option is assessed as having an impact on the following NERC and notable species: Major impact on Brown Trout. Moderate impact on *Atherix ibis* , *Riolus subviolaceus* , White-clawed crayfish, Water vole and Bullhead Overall there is a moderate risk of deterioration of WFD status for macroinvertebrates and major for fish.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme may influence river flows and, consequently, the regional hydrological cycle, with major impacts anticipated on riverine habitats. As the permit does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. The option is located outside a designated Nature Improvement Area. A BNG assessment has not been undertaken at this stage.	Minor adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver up to 0.057Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Low	Short-term	Temporary	Low (adverse)	Low (adverse)	There are a number of footpaths, including the official Bradford Millennium Way footpath. There is however no angling on the reservoir or the watercourses flowing down to the River Wharfe. Flows during a drought will be low such that a further reduction in flow is not likely to impact recreational activities at the reservoir or watercourses downstream.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No impacts on material assets 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards reaches of the Carr Beck watercourse were considered in the assessment. There is a low risk of deterioration of WFD status associated with total ammonia, oxygen and moderate risk on phosphate in the impacted reach. Overall there is a minor risk to water quality as a result of the drought option.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	Major (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with associated reduction in wetted width and depth over 5.1 km of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. The risk to the WFD status of the river reaches is anticipated to be moderate to minor. Overall, the impact on the affected reaches is assessed as minor.	Minor adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return.	Negligible adverse	None
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are four Scheduled Monuments in proximity (<250m) to the impacted reaches. However, they are not water dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A reduction in flow levels would have a limited visual impact on the landscape setting of the Bradford Millennium Way footpath. However, the reduced flow of the reaches would be short-term and temporary.	Negligible adverse	None

Drought Option Name: South Area Reservoir 1

Drought Plan Option Description: Reduced compensation flow release from South Area Reservoir 1 from 4.00-2.70 Ml/d to 1.33-0.90 Ml/d to the downstream reaches. Deployable output is up to 2.67 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There are a number of SSSI's located within 1km of the drought permit area. An SAC is located within 10km of the permit area. These statutory designated sites are not considered sensitive or susceptible to potential impacts from the drought permit, but two LNRs have been identified as low sensitivity areas that are susceptible however the significance of impact is negligible. Minor impact sites have been identified. Moderate impact sites have been identified. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 17 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment ranging from low to medium sensitivity and negligible to minor impact. The drought option is assessed as having an impact on the following NERC and notable species: Major impact for brook lamprey, brown trout, European eel, Atlantic Salmon and grayling. Moderate impact for *Paraleptophlebia cincta, Atherix ibis,* white-clawed crayfish, water vole, barbel, bullhead and river lamprey. There is a moderate risk of deterioration of WFD status (invertebrates) and a major risk to WFD status (fish), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	The drought permit is expected to cause major changes in river flows, resulting in major impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species.Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will deliver up to 2.67 Ml/d, helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Part of the reach feeds a Fishery, a stillwater waterbody, with a constant flow of fresh water. A mixed course fishing venue for informal angling is present on the impacted reach that would be subject to major flow reductions. However, these impacts will be minor against a baseline of drought conditions. Drought conditions would not be conducive to canoeing.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 2.67 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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

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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches of two watercourses were considered in the assessment. Two WwTW present a water quality pressure in the impacted reaches. Across the reaches, water quality is generally Good to High, but drought option operations present a consistent moderate risk of deterioration. The main pressures arise from episodic CSO discharges during rainfall, chronic ammonia issues linked to wastewater treatment works, and SRP failing to meet Good status with weak to strong flow sensitivity, all of which become more problematic under reduced dilution. Dissolved oxygen and ammonia are otherwise largely stable with little flow sensitivity, and no significant risks are associated with continuous discharges, meaning the key vulnerabilities relate to episodic pollution events and nutrient sensitivity under drought conditions. Overall there is a moderate adverse effect on water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%) over 1.8 km of the reach Scout Dike and a major reduction over 38.6 km of the reach River Don, with an associated reduction in wetted width and depth. Overall, major adverse impacts are anticipated towards river habitats associated with this drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% for the majority of the ZoI of this drought option. There is a minor to moderate risk to WFD objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are numerous Scheduled Monuments in proximity to the impacted reaches of the drought option. However, they are not water-dependent, as such, they would not be impacted.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Several walking trails run in close proximity to the River Don which forms part of their landscape setting. The major reduction in flows would have a small visual impact on the setting of the trails against a baseline of drought conditions.	Minor adverse	None

Drought Option Name: South Area Reservoir 2

Drought Plan Option Description: Reduced flow release from South Area Reservoir 2 from 7.00 Ml/d - 9.00 Ml/d to 3.50 Ml/d - 4.50 Ml/d (Trigger 1) and then to 2.33 Ml/d - 3.00 Ml/d (Trigger 2). Deployable Output is up to 6 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. There are a number of SSSI's located within 1km of the drought permit area. These statutory designated sites are not considered sensitive or susceptible to potential impacts from the drought permit, but the LNRs have been identified as low sensitivity areas that are susceptible however the significance of impact is negligible. There are four minor impact sites . Two LWS have been identified as moderate impact sites. No sites within the impacted reach have been identified with major impact. The reduced flows would result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 18 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment ranging from low to medium sensitivity and negligible to minor impact. Two have been identified as moderate impact sites. The drought option is assessed as having an impact on the following NERC and notable species: Minor impacts for Rhyacophila septentrionis, Potamophylax rotundipennis, Oreodytes davisii. Moderate impact for White-clawed crayfish, Water vole, Barbel, Bullhead Paraleptophlebia cincta, Atherix ibis, and Brook lamprey. Major impact for Atlantic Salmon, Brown trout, European eel and Grayling. The risk of deterioration to WFD status (fish) is major and moderate to WFD status (invertebrates), resulting in an overall major adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Across the reaches, drought option operations pose moderate to major risks of habitat deterioration, driven by reduced flow and altered system energy. The most consistent vulnerabilities are loss of wetted area, reduced habitat availability for species, and disrupted longitudinal connectivity. Sediment dynamics are assessed as minor to moderate. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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.	Moderate adverse	
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option will provide up to 6.00 Ml/d helping to maintain essential public water supplies during drought conditions and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	High	Short-term	Temporary	Low (adverse)	Low (adverse)	Angling could potentially be adversely affected due to impacts on fish population/ distribution, however, the impacts would be short-term and temporary. Canoeing also takes place along the River Don however drought conditions would not be conducive to canoeing.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 6.00 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	The drought option involves a reduction in compensation 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches were considered in the assessment. Four WwTWs present water quality pressures within these reaches. Across the river reaches, water quality is generally Good to High, but drought option operations present minor to moderate risks of deterioration. The main vulnerabilities are SRP failing to meet Good status with flow sensitivity, episodic CSO discharges during rainfall events, and chronic ammonia pressures linked to wastewater treatment works in certain reaches. Continuous discharges are not a concern, but reduced dilution during drought could amplify these issues and trigger localised water quality deterioration. Overall there is a moderate adverse effect on water quality as a result of the drought option.	Moderate 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)**
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in flows (up to 67%) over 38.6 km of the River Don, with impacts concentrated during low-flow regimes. Effects on habitats and navigation are expected to be short-term and reversible, assuming good practice mitigation. Residual impacts are assessed as moderate to major adverse for river habitats, with greatest sensitivity in reaches already subject to abstraction or flow depletion. While ecological connectivity may be temporarily reduced, no significant long-term deterioration of surface or groundwater levels is anticipated.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Medium	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% for the majority of the ZoI of this drought option. There is a minor to moderate risk to WFD compliance objectives from this drought option mostly associated with CSO discharge.	Moderate adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are no known water-dependent cultural heritage or archaeology sites in proximity to the impacted reaches of the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Several walking trails run in close proximity to the reach which forms part of their landscape setting. The moderate reduction in flows would have a small visual impact on the setting of the trails.	Minor adverse	None

Drought Option Name: South Area Reservoir 3a

Drought Plan Option Description: Reduced compensation flow release from South Area Reservoir 3a from 16.00-21.70 Ml/d to 10.85-8.00 Ml/d (Trigger 1) to 7.23-5.33 Ml/d (Trigger 2). Deployable output is up to 10.67 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. One SAC is located within 10km of the permit area and an SSSI is located within 500m of part of the reach. These statutory designated sites are not considered sensitive or susceptible to potential impacts from the drought permit. Two LNRs have been identified as low sensitivity sites but the impact would be negligible. Two moderate impact sites are in hydrological connectivity. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 14 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment. All are assessed to have low to medium sensitivity and negligible to minor impacts apart from one LWS which is identified as a moderate impact site. The drought option is assessed as having an impact on the following NERC and notable species: Major for Atlantic Salmon, brown trout, European eel. Moderate impact for white-clawed crayfish, water vole, barbel, bullhead, grayling and brook lamprey. There is a major risk of deterioration of WFD status (fish) and a moderate risk to WFD status (invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	Major reductions in flow would alter system energy, leading to moderate impacts on wetted habitat, species-specific habitat, and longitudinal connectivity in some reaches, while others show only minor risks under low-energy conditions. Sediment dynamics are consistently assessed as minor. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option will deliver up to 10.67 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Canoeing and informal angling is present on the impacted reach that would be subject to major/moderate flow reductions. However, these impacts will be negligible against a baseline of drought conditions.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 10.67 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is	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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches were considered in the assessment. Three WwTWs present water quality pressures in the impacted reaches. Across the reaches, water quality is generally reported as Good to High, but drought option operations present moderate risks of deterioration. The main pressures are short-term acute impacts downstream of CSOs during rainfall events and SRP failing to meet Good status with moderate flow sensitivity, which increases vulnerability to reduced dilution. Dissolved oxygen and ammonia are largely stable with weak or no flow sensitivity, and there are no significant risks from continuous discharges. Overall, the key concern is that drought conditions could amplify episodic CSO pollution and SRP sensitivity, leading to localised water quality deterioration despite otherwise good baseline status. Overall there is a moderate adverse effect on water quality as a result of the drought option.	Moderate 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)**
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows over 8.7km of the Little Don and the 34.7 km of the River Don. However, impacts on habitats and navigation would be short-term and restricted to the low flow regimes of the water courses. Minor to moderate adverse impacts are anticipated towards river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% for the majority of the ZoI of this drought option. There is a minor to moderate risk to WFD objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites	N/A	N/A	N/A	N/A	N/A	N/A	There are no designated heritage assets in proximity to the impacted reaches of the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Several walking trails run in close proximity to the River Don which forms part of their landscape setting. The moderate reduction in flows would have a small visual impact on the setting of the trails.	Minor adverse	None

Drought Option Name: South Area Reservoir 3b

Drought Plan Option Description: Conditions with this license specify a seasonally varied compensation flow regime. Reduced compensation flow from South Area Reservoir 3b ,when reservoir stocks are below control line, from 4 Ml/d (Nov to March), 3 Ml/d (April and Oct), 2 Ml/d (May to Sept), to 2.00 Ml/d (Nov to March) or 1.50 Ml/d (April and Oct) or 1.00 Ml/d (May to Sept) (Trigger 1), and then to 1.33 Ml/d (Nov to March), 1.00 Ml/d (April and Oct), 0.67 Ml/d (May to September) (Trigger 2) to the downstream River. When reservoir stocks are above control line,there is reduced compensation flow from 7 Ml/d (Nov to March), 5 Ml/d (April and Oct), 3.5 Ml/d (May to Sept), to 3.50 Ml/d (Nov to March) or 2.50 Ml/d (April and Oct) or 1.75 Ml/d (May to Sept) (Trigger 1), and then to 2.33 Ml/d (Nov to March), 1.66 Ml/d (April and Oct), 1.17 Ml/d (May to September) (Trigger 2. Deployable output is up to 4.67 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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. A number of designated sites are in hydrological connectivity with the impacted reach. The EARs detail that no statutory designated sites or NERC habitats and local wildlife sites that are sensitive or susceptible to drought permit impacts have been identified. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. The drought option is assessed as having an impact on the following NERC and notable species: Moderate impact on white-clawed crayfish, Water vole and Brown trout. Minor Impact on *Paraleptophlebia cincta, Potamophylax rotundipennis, Tinodes assimilis, Sialis nigripes* and Bullhead. There is a moderate risk of deterioration of WFD status for invertebrates and fish, resulting in an overall moderate adverse effect on aquatic receptors.	Moderate Adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	The major reduction in flow will lead to a major change to the energy of the system with the potential for major risks to total wetted aquatic habitat, available habitat for different species and longitudinal connectivity. The risk to sediment dynamics is assessed as moderate. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought permit will provide up to 4.67 Ml/d helping to maintain essential public water supplies during drought conditions and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	High	Short-term	Temporary	Low (adverse)	Low (adverse)	Recreational angling takes place on the reaches however flows during a drought will be low such that further reduction in flows would not be likely to further reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 4.67 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is	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 To maintain or improve the quality of surface and groundwater resources	Small	Uncertain	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards the reaches was considered in this assessment. There are no continuous or intermittent water quality pressures are present in this reach and there is an uncertain risk to water quality as a result of this drought option. As water quality generally declines with reduced flow and lower water levels, overall, a minor adverse assessment is given, albeit with uncertainty.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%) over a 3.2km stretch of the Little Don River from the outflow of Langsett Reservoir to Underbank Reservoir with the potential for major risks to total wetted aquatic habitat, available habitat for different species and longitudinal connectivity.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% for the entire ZoI of this drought option. There is an uncertain risk to WFD compliance objectives. As water quality generally declines with reduced flow and lower water levels, overall, a minor adverse assessment is given, albeit with uncertainty.	Minor adverse	Minor Beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites	N/A	N/A	N/A	N/A	N/A	N/A	No known water-dependent cultural heritage or archaeology sites are located within or adjacent to the impacted reaches.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	National trails run in close proximity to the reaches. As the river forms part of the landscape setting of the trail, low flows may have a low visual impact.	Minor adverse	None

Drought Option Name: South Area Reservoir 4

Drought Plan Option Description: Reduced compensation flow release from South Area Reservoir 4 from 9.10-12.00 Ml/d to 4.55-6.00 Ml/d (Trigger 1) to 3.03-4.00 Ml/d (Trigger 2). Deployable output is up to 8.00 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. Numerous designated sites are in hydrological connectivity with the impacted reach none of which are considered sensitive. Three local wildlife sites are identified as moderate impact sites. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 14 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment. All are assessed to have low to medium sensitivity and negligible to minor impacts apart from one which is identified as a moderate impact site. Major impact for Brown trout, European eel, and Atlantic Salmon Moderate impact for White-clawed crayfish, Water vole, Grayling, Barbel, Bullhead, and Brook Lamprey Minor impact for *Riolus subviolaceus and Potamophylax rotundipennis.* The risk of deterioration to WFD status (fish) is major and moderate to WFD status (macroinvertebrates) resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Implementation of the drought order would help to sustainably manage natural resources in order to provide ecosystem services over a longer period of time. The major reduction in flow will lead to a major change in the energy of the system with the potential for a major reduction in total wetted aquatic habitat, available habitat for different species and longitudinal connectivity. Risk to sediment dynamics has been assessed as moderate. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing)	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought permit will provide up to 8.00 Ml/d helping to maintain essential public water supplies during drought conditions and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	High	Short-term	Temporary	Low (adverse)	Low (adverse)	Angling could potentially be adversely affected due to impacts on fish population/ distribution, however, the impacts would be short-term and temporary. Canoeing also takes place along the reach however drought conditions would not be conducive to canoeing.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 8.00 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (beneficial)	Low (beneficial)	The drought option involves a reduction in compensation 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is	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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches were considered in the assessment. There is a moderate risk of water quality deterioration under drought option operations. While dissolved oxygen and ammonia remain stable at Good to High status, soluble reactive phosphorus (SRP) is below Good status and sensitive to reduced dilution, making it vulnerable during drought. Episodic pressures from combined sewer overflows (CSOs) in rainfall events add short-term risks, though continuous discharges are not a concern. Overall, drought operations could amplify SRP issues and trigger localised deterioration. Overall there is a moderate risk to water quality as a result of this drought option.	Moderate 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)**
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%) over 1.7 km of Ewden Beck and major reduction over 23.3 km of the River Don with an associated reduction in wetted width and depth. However, impacts on habitats and navigation would be short-term and restricted to the low flow regimes of the water courses. Overall, minor to major adverse impacts are anticipated towards river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% for the entire ZoI of this drought option. There is a moderate risk to WFD compliance objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	No known water-dependent cultural heritage or archaeology sites are located within or adjacent to the impacted reaches.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Several walking trails run in close proximity to the reach which forms part of their landscape setting. The reduction in flows would have a low visual impact on the setting of the trails against a baseline of drought conditions.	Minor adverse	None

Drought Option Name: South Area Reservoir 5

Drought Plan Option Description: Reduced compensation flow release from South Area Reservoir 5 from 28-18 Ml/d to 14-9 Ml/d (Trigger 1) to 9.33-6.00 Ml/d (Trigger 2) to the downstream river Loxley. Deployable output is up to 18.67 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. Reduced flows in the reaches would result in increased mortality and risk of stranding of NERC species. Moderate adverse impacts are predicted to two LWS, with Minor adverse effects on another two LWS. The drought option is assessed as having an impact on the following NERC and notable species: Major adverse impact to Brown Trout, and Grayling. Moderate adverse impact to White-clawed crayfish, Water Vole, Bullhead, Brook lamprey, and in Reach 2 Grayling. Minor adverse impacts to *Potamophylax rotundipennis, Atherix ibis, Gyraulus laevis,* and *Baetis digitatus* . There is a major risk to the deterioration of WFD status (fish) and a moderate risk to the deterioration of WFD status (invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	The implementation of this drought order would likely result in a moderate impact on total wetted aquatic habitat, available habitat for different species and longitudinal connectivity along the River Loxley. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option will result in 18.67 Ml/d helping to maintain essential public water supplies during drought conditions and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Angling could be adversely affected due to impacts on fish population/distribution in downstream reaches. However, flows during a drought will already be low, such that further reduction in flows would not be likely to further reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 18.67 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards reaches of watercourses were considered in the assessment. No continuous or intermittent water quality pressures identified as presenting increased risk with drought options implemented. There is uncertainty associated with the dilution of iron in the discharge from abandoned mine water discharge. The option would result in a minor adverse risk associated with change in dilution of diffuse pollution pressures to ammonia and dissolved oxygen concentration.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	There would be a major adverse impact on flow levels in the impacted reaches with an associated reduction in wetted width and depth. However, these impacts would be localised to places where the bank is shallow. The drought option would lead to a major reduction in low flows (up to 67%) at all times of year associated reduction in wetted width and depth over a 21.2km of the impacted reaches. Overall major to minor adverse impacts are anticipated towards river habitats associated with the drought option.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% for the entire ZoI of this drought option. There is a minor to moderate risk to WFD compliance objectives mainly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as minor adverse.	Minor adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There would be no land use changes associated with this drought option. The impact on fluvial geomorphology due to lower flows is assessed as minor adverse, due to potential for increased erosion of river banks and sediment deposition at selected sites. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important	N/A	N/A	N/A	N/A	N/A	N/A	There are no known water-dependent cultural heritage or archaeology sites in proximity to the impacted reaches.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Several walking trails run in close proximity to the reaches which forms part of their landscape setting. The reduction in flows would have a low visual impact on the setting of the trails against a baseline of drought conditions.	Negligible adverse	None

Drought Option Name: South Area Reservoir 6

Drought Plan Option Description: Reduced compensation flow release from a Dep Pond downstream of South Area Reservoir 6, however, under normal operations the release is made from the reservoir, from 10.30 Ml/d to 5.15 Ml/d (Trigger 1) and then to 3.43 Ml/d (Trigger 2). Deployable output is up to 6.87 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. Numerous designated sites are in hydrological connectivity with the impacted reach, none of which are not considered to be sensitive. Five local wildlife sites are identified to be moderate impact sites. The reduced flows would result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. Fourteen NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment ranging from low to medium sensitivity and negligible to minor impact. One LWS is identified as a moderate impact site. The drought option is assessed as having an impact on the following NERC and notable species: Major impact for Atlantic Salmon, brook lamprey, brown trout and European eel. Moderate impact for white-clawed crayfish, water vole, barbel, bullhead, grayling and river lamprey. Minor impact for *Sisyra terminalis, Potamophylax rotundipennis, Atherix ibis, Wormaldia subnigra, Baetis digitatus and Gyraulus laevis.* There is a moderate risk of deterioration of WFD status (macroinvertebrates) and a major risk to WFD status (fish), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	The river reach carries a moderate to major risk of habitat deterioration under drought option operations. Major reductions in flow would alter the energy of the system, reducing total wetted habitat, limiting species-specific habitat availability, and disrupting longitudinal connectivity. Sediment dynamics are generally less affected with a minor to moderate risk. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing)	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option will deliver up to 6.87 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is informal angling present on the impacted reaches. However, flows during a drought will be low such that further reduction in flows would not be likely to further reduce the angling quality of the reach. Canoeing takes place on the reaches, however, existing drought conditions would not be conducive to canoeing so impacts would be negligible.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 6.87 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards the reaches are included in the assessment. One WwTW presents a water quality risk in the impacted reaches. Across the reaches, water quality is generally Good to High, but drought option operations carry a moderate risk of deterioration, particularly due to episodic CSO discharges during rainfall and persistent SRP sensitivity to reduced dilution. Continuous discharges are not a concern, so the main vulnerabilities lie in storm-related events and SRP failing to meet Good status. Overall, there is a moderate adverse effect on water quality as a result of this drought option.	Moderate 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)**
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%) associated reduction in wetted width and depth over 23.2km of the impacted reaches. However, impacts on habitats and navigation would be short-term and restricted to the low flow regimes of the water courses. Minor to major adverse impacts are anticipated towards river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% for the entire ZoI of this drought option. There is a moderate risk to WFD compliance objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	A Scheduled Monument is in proximity to the impacted reaches. However, the asset is not water dependent so would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Several walking trails run in close proximity to the reaches which forms part of their landscape setting. The reduction in flows would have a low visual impact on the setting of the trails against a baseline of drought conditions.	Minor adverse	None

Drought Option Name: South Area Reservoir 7

Drought Plan Option Description: Compensation flow reduction from 3.3 Ml/d to 1.65 Ml/d (Trigger 1) from the date the permit is granted and to reduce further to 1.1 Ml/d (Trigger 2) if regional reservoir stocks are below the regional Drought Control Line for more than four consecutive weeks. Deployable output is up to 2.2 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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. A number of designated sites are located within 10km of the permit area but are no sensitive or susceptible to river flow changes. No statutory designated sites that or sensitive or susceptible to drought permit impacts have been identified. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. No NERC or other notable and/or protected habitats are located on or within 500m of the impacted reach have deemed sensitive or susceptible to drought permit impacts. The drought option is assessed as having an impact on the following NERC and notable species: Moderate impact on white-clawed crayfish, water vole and brown trout. Minor impact on Bullhead and *Stictonectes lepidus*. There is a moderate risk of deterioration of WFD status for invertebrates and fish, resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought permit is expected to cause major changes in river flows, resulting in major impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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. Overall, the effect is assessed as moderate adverse, with implementation of the EMP.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (adverse)	The drought permit will deliver up to 2.2 Ml/d helping to maintain essential public water supplies during drought conditions and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	High	Short-term	Temporary	Low (adverse)	Low (adverse)	Recreational angling takes place along the reaches. Flows during a drought will be low such that further reduction in flows would not be likely to further reduce the angling quality of the reach.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards the reaches of following river waterbodies were considered for this assessment. No continuous or intermittent water quality pressures identified as presenting increased risk with drought options implemented in this reach. Minor risk from drought option to total ammonia, oxygen and phosphate. Overall, there is a minor risk to water quality.	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/ 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 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows over a 2.4km stretch of the reach from the outflow with the potential for major risks to total wetted aquatic habitat, available habitat for different species and longitudinal connectivity.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. There is a moderate risk to WFD status due to physical environment changes. Water availability is less than 30% for the entire ZoI of this drought option. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	No known water-dependent cultural heritage or archaeology sites are located within or adjacent to the impacted reaches.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Public footpaths run in close proximity to the impacted reach. As the river forms part of the landscape setting of the trail, low flows may have a low visual impact.	Negligible adverse	None

Drought Plan Option Name: South West Area Reservoir 1

Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 1 from 2.70 Ml/d to 1.35 Ml/d (Trigger 1) and then to 0.90 Ml/d (Trigger 2). Deployable output is up to 1.8 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. Part of a SAC/SSSI is located within 500m of the permit area. No statutory designated sites that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. No NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows would result in a number of impacts on fish species including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. As a result, NERC and Notable species would be subject to the following adverse impacts: Major impact for brown trout. Moderate impact for white-clawed crayfish, bullhead and water vole. Minor impact for *Ameletus inopinatus, Oulimnius troglodytes, Potamophylax rotundipennis, Tinodes unicolor,* grayling. There is a moderate risk of deterioration of WFD status (invertebrates) and major risk (fish), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	The drought permit is expected to cause major changes in river flows, resulting in minor to major ecological impacts, including altering hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option would lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 1.8 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Canoeing and angling takes place along the reaches however the impact of the drought option is unlikely to be significant against a baseline of drought conditions.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 1.8 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts on affected reaches were considered in the assessment. Across the reaches, baseline water quality for ammonia, phosphate, and dissolved oxygen is generally High or Good, with little to no flow sensitivity, meaning most areas face only minor risks from reduced dilution under drought conditions. However, several reaches experience moderate risks driven by short-term acute pressures downstream of CSOs during rainfall events, and in some cases by phosphate showing strong flow sensitivity, which increases vulnerability when flows drop. Continuous discharges do not present a concern in any reach, so the key risks relate to episodic CSO pollution and phosphate sensitivity, which may lead to localised water quality deterioration during drought. Overall there is a moderate adverse effect on water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 23.8 km stretch of the impacted reaches. Moderate to major hydrological impacts are anticipated towards the impacted reaches, including two flow depleted reaches. Moderate adverse effects are anticipated towards river habitats as a result of the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is at less than 30% in part of the zone of influence of this drought option. There is a moderate risk to WFD compliance objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate 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)**
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Small	Low	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. A small section towards the end of one of the reaches contains Grade 3 soil. This drought option could reduce the reliability of water supply to the soil, leading to indirect adverse impacts. The impacts would be unlikely, temporary and reversible. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites	N/A	N/A	N/A	N/A	N/A	N/A	Nearby scheduled monuments are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a National Trail. However, the reduced water levels of the reaches would be short-term and temporary.	Minor adverse	None

Drought Plan Option Name: South West Area Reservoir 2

Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 2 from 3.78 Ml/d (Jan - Sept) or 15.12 Ml/d (Oct - Dec, unless stocks below 50% then 7.56 Ml/d) to 1.89 Ml/d (Jan - Sept) or 3.78 Ml/d (Oct - Dec) (Trigger 1) to 1.26 Ml/d (Jan - Sept) or 2.53 Ml/d (Oct - Dec) (Trigger 2). The 50% control line during winter is suspended with a permit. Deployable output is up to 5.04 Ml/d (Oct- Dec) under normal control line (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. An SAC/SPA/SSSI is located within 10km of the permit area with some being within 500m. No statutory designated sites or NERC or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows would result in a number of impacts on fish species including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. As a result, NERC and Notable species would be subject to the following adverse impacts: Major impact for brown trout. Moderate impact for water vole, grayling, white-clawed crayfish and bullhead. Minor impact for *Oulimnius troglodytes, Potamophylax rotundipennis, Tinodes unicolor.* There is a moderate risk of deterioration of WFD status (invertebrates) and a major risk to WFD status (fish) resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	Reductions in downstream flow may lead to short-term habitat changes (which would affect associated natural capital and ecosystem services) (either beneficial/ adverse) related to changes in inundation levels downstream. The drought permit is expected to cause major changes in river flows, resulting in ecological impacts ranging from minor to major, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option would lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option would deliver up to 5.04 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Medium (adverse)	Low (adverse)	There is an angling club and casual angling present on the impacted reaches. The impact on the club and some of the casual angling activities would range from minor to moderate. Canoeing also takes place along the reaches however the impact of the drought option is unlikely to be significant against a baseline of drought conditions. There are a number of other recreational activities in proximity to the impacted reaches, however, they would not be affected over the duration of the implementation of the drought option.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 5.04 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts on affected reaches were considered in the assessment. Across the reaches, baseline water quality for ammonia, phosphate, and dissolved oxygen is generally High or Good, with little or no flow sensitivity, meaning some reaches face only minor risks from reduced dilution. However, several reaches experience moderate impacts driven by short-term acute pressures downstream of CSOs during rainfall events, and by phosphate showing strong flow sensitivity, which increases vulnerability under drought conditions. Continuous discharges do not present a risk in any reach, so the main concerns relate to episodic CSO pollution and phosphate sensitivity, which could lead to localised deterioration during low-flow periods. Overall, there is a moderate adverse effect on water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 23.8 km stretch of the impacted reaches. Moderate to major hydrological impacts are anticipated towards the impacted reaches. There is a major adverse effect on river habitats associated with the drought option.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of the drought option. There is a minor to moderate risk to WFD compliance objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Scheduled Monuments would not be impacted by the flow reductions over the duration of the implementation of the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a National Trail. However, the reduced water levels of the reaches would be short-term and temporary.	Minor adverse	None

Drought Plan Option Name: South West Area Reservoir 3

Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 3 from 3.24 Ml/d (Jan - Sept) or 12.96 Ml/d (Oct - Dec, unless stocks below 50% then 6.48 Ml/d) to 1.62 Ml/d (Jan - Sept) or 3.24 Ml/d (Oct - Dec) (Trigger 1) to 1.08 Ml/d (Jan - Sept) or 2.16 Ml/d (Oct - Dec) (Trigger 2). 50% control line during winter is suspended with a permit. Deployable output is up to 4.32 Ml/d (Oct- Dec) below normal control line (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. A SAC/SPA/SSSI is located within 10km of the permit area with some being within the 500m buffer. No statutory designated sites or NERC or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows would result in a number of impacts on fish species including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. As a result, NERC and Notable species would be subject to the following adverse impacts: Major impact for brown trout. Moderate impact for white-clawed crayfish, water vole and bullhead. Minor impact for barbel, grayling, *Ameletus inopinatus, Helophorus strigifrons, Oulimnius troglodytes, Potamophylax rotundipennis, Tinodes unicolor*. There is a moderate risk of deterioration of WFD status (invertebrates) and a major risk to WFD status (fish), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	Reductions in downstream flow may lead to short-term habitat changes (which would affect associated natural capital and ecosystem services) (either beneficial/ adverse) related to changes in inundation levels downstream. The drought permit is expected to cause major changes to river flows, resulting in minor to major ecological impacts, including altered hydraulic conditions, reduced habitat availability and reduced longitudinal connectivity. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option would lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 4.32 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Medium (adverse)	Low (adverse)	There is an angling club and casual angling present on the impacted reaches. The impact on the club and some of the casual angling activities would range from minor to moderate. Canoeing also takes place along the reaches however the impact of the drought option is unlikely to be significant against a baseline of drought conditions. There are a number of other recreational activities in proximity to the impacted reaches, however, they would not be affected over the duration of the implementation of the drought option.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 4.32 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts on affected reaches were considered in the assessment. Across the reaches, baseline water quality for ammonia, phosphate and dissolved oxygen is generally High or Good, meaning several reaches face only minor risks from reduced dilution under drought conditions. However, others experience moderate impacts, driven mainly by short-term acute pressures downstream of CSOs during rainfall events and by phosphate showing strong flow sensitivity, which increases vulnerability when flows drop. Continuous discharges do not present a risk in any reach, so the key concerns relate to episodic CSO pollution and phosphate sensitivity, which could lead to localised deterioration during drought. Overall there is a moderate adverse effect on water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 24 km stretch of the impacted reaches. Moderate to major hydrological impacts are anticipated towards the impacted reaches. There is a major adverse effect on river habitats associated with the drought option.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of the drought option There is a minor to moderate risk to WFD compliance objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	The Scheduled Monument would not be impacted by the flow reductions over the duration of the implementation of the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a negligible visual impact on the landscape setting of a National Trail . However, the reduced water levels of the reaches would be short-term and temporary.	Minor adverse	None

Drought Plan Option Name: South West Area Reservoir 4
Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 4 from 3.42 Ml/d to 1.14 Ml/d. Deployable output is up to 2.28 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. No statutory designated sites or NERC or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows would result in a number of impacts on fish species including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. As a result, NERC and Notable species would be subject to the following adverse impacts: Moderate impact for white-clawed crayfish, water vole and brown trout. Minor impact for grayling, bullhead, *Potamophylax rotundipennis*. There is a major risk of deterioration of WFD status (invertebrates) and moderate risk of WFD status (fish), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	Reductions in downstream flow may lead to short-term habitat changes (which would affect associated natural capital and ecosystem services) (either beneficial/ adverse) related to changes in inundation levels downstream. The drought permit is expected to cause major changes in river flows, resulting in minor to moderate ecological impacts, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option would lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 2.28 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present. The reduced flows would have a minor adverse effect on the angling quality of the reach. Canoeing also takes place however the impact of the drought option is unlikely to be significant against a baseline of drought conditions.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 2.28 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts on affected reaches were considered in the assessment. Across both reaches, baseline water quality for ammonia, phosphate and dissolved oxygen is generally High or Good, meaning only minor risks arise from reduced dilution of diffuse pollution. However, both reaches face moderate overall impacts due to short-term acute pressures downstream of multiple CSOs during rainfall events, with one reach affected by six CSOs and the other by three. In the first reach, phosphate shows strong flow sensitivity, increasing vulnerability under drought conditions, while continuous discharges present no identified risk in either reach. Overall there is a moderate adverse effect on water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	There is one significant flow pressure reducing flow as advised by the EA. The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 24.2 km stretch of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches. Major adverse effects on river habitats are associated with the drought option.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is at least 95% in the zone of influence of the drought option. There is a moderate risk to WFD compliance objectives mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Nearby Scheduled Monuments are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a National Trail. However, the reduced water levels of the reaches would be short-term and temporary.	Minor adverse	None

Drought Plan Option Name: South West Area Reservoir 5

Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 5 from 3.02 Ml/d to 1.01 Ml/d. Deployable output is up to 2.01 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. A SAC/SPA/SSSI is located within 10km of the permit area with some being within the 500m buffer. No statutory designated sites or NERC or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows would result in a number of impacts on fish species including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. As a result, NERC and Notable species would be subject to the following adverse impacts: Major impact for brown trout. Moderate impact for water vole and white-clawed crayfish. Minor impact for bullhead and grayling and *Sialis nigripes* . There is a moderate risk of deterioration of WFD status for invertebrates and a major risk for fish, resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	Reductions in downstream flow may lead to short-term habitat changes (which would affect associated natural capital and ecosystem services) (either beneficial/ adverse) related to changes in inundation levels downstream. The drought permit is expected to cause major changes to river flows, resulting in minor to major ecological impacts, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option would lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 2.01 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on the impacted reaches. The reduced flows would have a minor adverse effect on the angling quality of the reach. Canoeing also takes place along the reaches however the impact of the drought option is unlikely to be significant against a baseline of drought conditions.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 2.01 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches were considered in the assessment. Across the reaches, water quality effects range from minor to moderate, with the higher-risk reach influenced by short-term acute pressures downstream of six CSOs and strong flow-sensitive phosphate, which together create a moderate impact under reduced flows. In contrast, the second reach shows only a minor risk, as ammonia, phosphate and dissolved oxygen remain consistently High or Good with no flow sensitivity and no continuous or intermittent pressures identified. Overall there is a moderate adverse effect on water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 13 km stretch of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches. Overall, major adverse effects on river habitats are associated with the drought option.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of the drought option There is a minor to moderate risk to WFD compliance objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are no heritage assets in proximity to the impacted reaches of the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a National Trail. However, the reduced water levels of the reaches would be short-term and temporary so the impact would only be minor.	Minor adverse	None

Drought Plan Option Name: South West Area Reservoir 8

Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 8 from 18.00 Ml/d to 6.00 Ml/d. Deployable output is up to 12 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. A SAC/SPA/SSSI is located within 10km of the permit area with some being within the 500m buffer. No statutory designated sites or NERC or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows would result in a number of impacts on fish species including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. As a result, NERC and Notable species would be subject to the following adverse impacts: Major impact for brown trout. Moderate impact for white-clawed crayfish, water vole, and bullhead. Minor impacts regarding grayling, barbel, *Rhyacophila septentrionis* and *Stictonectes lepidus* . There is a major risk of deterioration of WFD status (fish and invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	Reductions in downstream flow may lead to short-term habitat changes (which would affect associated natural capital and ecosystem services) (either beneficial/ adverse) related to changes in inundation levels downstream. The drought permit is expected to cause major changes in river flows, resulting in minor to major ecological impacts, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option would lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option would deliver up to 12.00 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	There is an organised angling club present on the impacted reaches. Due to the major reduction in water flows and levels there would be a moderate adverse impact on the angling quality of the reach. A Golf Club is also located within 1km of the reach however, it is unlikely to be impacted over the duration of the drought options implementation. Canoeing also takes place along the reaches however the impact of the drought option is unlikely to be significant against a baseline of drought conditions.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 12.00 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	The drought option involves a reduction in compensation 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts on affected reaches were considered in the assessment. Moderate risk from medium-term chronic, regular, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) downstream of a WwTW. Moderate risk of short term acute, infrequent, temporary water quality pressures locally downstream of 13 listed CSOs during rainfall events. Water quality throughout the study area would be at moderate risk of deteriorating, from the implementation of the drought option, for dissolved oxygen, total ammonia and phosphate. Overall, there is a moderate adverse effect on water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 21 km stretch of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches. Minor to major adverse effects are anticipated on river habitats associated with the drought option.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of the drought option There is a moderate risk to WFD objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are a number of scheduled monuments in proximity to the impacted reaches of the drought option, however, they are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a National Trail . However, the reduced water levels of the reaches would be short-term and temporary so the impact would only be minor.	Minor adverse	None

Drought Plan Option Name: **South West Area Reservoir 9**

Drought Plan Option Description: **Reduced compensation flow release from South West Area Reservoir 9 from 3.41 Ml/d to 1.14 Ml/d. Deployable output is up to 2.27 Ml/d (Trigger 2).**

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. A The South Pennine Moors SAC/SPA/SSSI is located within 10km of the permit area with some being within the 500m buffer. No statutory designated sites or NERC or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows would result in a number of impacts on fish species including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. As a result, NERC and Notable species would be subject to the following adverse impacts: Major impact for brown trout. Moderate impact for white-clawed crayfish, water vole, and bullhead. Minor impacts regarding grayling, barbel, Rhyacophila septentrionis and Stictonectes lepidus. There is a major risk of deterioration of WFD status (fish and invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	Reductions in downstream flow may lead to short-term habitat changes (which would affect associated natural capital and ecosystem services) (either beneficial/ adverse) related to changes in inundation levels downstream. The drought permit is expected to cause major changes in river flows, resulting in minor to major ecological impacts, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option would lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 2.27 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	There is an organised angling club present on the impacted reaches. Due to the major reduction in water flows and levels, there would be a moderate adverse impact on the angling quality of the reach. A Golf Club is also located within 1km of the reach. However, it is unlikely to be impacted over the duration of the drought options implementation. Canoeing also takes place along the reaches, however, the impact of the drought option is unlikely to be significant against a baseline of drought conditions.	Moderate adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 2.27 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option involves a reduction in compensation release only and no changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure.	None	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts on the affected reaches were considered in the assessment. Moderate risk from medium-term chronic, regular, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) downstream of a WwTW. Moderate risk of short term acute, infrequent, temporary water quality pressures locally downstream of 13 listed CSOs during rainfall events. Water quality throughout the study area would be at moderate risk of deteriorating, from the implementation of the drought option, for dissolved oxygen, total ammonia and phosphate. Overall, there is a moderate adverse effect on water quality as a result of the drought option.	Moderate 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)**
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 21 km stretch of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches. Minor to major adverse effects are anticipated on river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of the drought option There is a moderate risk to WFD compliance objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are a number of scheduled monuments in proximity to the impacted reaches of the drought option, however, they are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a National Trail . However, the reduced water levels of the reaches would be short-term and temporary so the impact would only be minor.	Minor adverse	None

Drought Plan Option Name: **South West Area Reservoir 10**

Drought Plan Option Description: **Reduced compensation flow release from South West Area Reservoir 10 from 5.90 Ml/d to 1.97 Ml/d. Deployable output is up to 3.93 Ml/d (Trigger 2).**

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. A SAC/SPA/SSSI is located within 10km of the permit area with some being within the 500m buffer. No statutory designated sites or NERC or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows would result in a number of impacts on fish species including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. As a result, NERC and Notable species would be subject to the following adverse impacts: Major impact for brown trout. Moderate impact for bullhead, water vole and white-clawed crayfish. There is a major risk of deterioration of WFD status (fish and invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Reductions in downstream flow may lead to short-term habitat changes (which would affect associated natural capital and ecosystem services) (either beneficial/ adverse) related to changes in inundation levels downstream. The drought permit is expected to cause major changes in river flows, resulting in minor to major ecological impacts, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option would lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 3.93 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	There is an organised angling club present on the impacted reaches. Due to the major reduction in water flows and levels, there would be a moderate adverse impact on the angling quality of the reach. A Golf Club is also located within 1km of the reach however, it is unlikely to be impacted over the duration of the drought options implementation. Canoeing also takes place along the reaches however the impact of the drought option is unlikely to be significant against a baseline of drought conditions.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 3.93 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches and watercourses were considered in the assessment. A WwTW and fish farm present significant water quality pressures in the impacted reaches. Continued risk of short term acute, infrequent, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) locally downstream of thirteen listed CSOs during rainfall events. The risk of water quality deterioration below what supports good WFD status for fish and invertebrates is moderate for dissolved oxygen and ammonia. Overall there is a moderate adverse effect on water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 19.4 km stretch of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches. Major adverse effects are anticipated on river habitats associated with the drought option.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of the drought option There is a moderate risk to WFD compliance objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Nearby scheduled monuments are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a National Trail. However, the reduced water levels of the reaches would be short-term and temporary so the impact would be minor.	Minor adverse	None

Drought Plan Option Name: **South West Area Reservoir 11**

Drought Plan Option Description: **Reduced compensation flow release from South West Area Reservoir 11 from 6.82 Ml/d to 2.27 Ml/d. Deployable output is up to 4.55 Ml/d (Trigger 2).**

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. No statutory designated sites or NERC or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows would result in a number of impacts on fish species including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. As a result, NERC and Notable species would be subject to the following adverse impacts: Major impact for brown trout. Moderate impact for water vole, bullhead and white-clawed crayfish. Minor impact for grayling, *Paraleptophlebia cincta* and *Atherix ibis.* There is a moderate risk of deterioration of WFD status for invertebrates and major for fish, resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	Reductions in downstream flow may lead to short-term habitat changes (which would affect associated natural capital and ecosystem services) (either beneficial/ adverse) related to changes in inundation levels downstream. The drought permit is expected to cause major changes in river flows, resulting in minor to major ecological impacts, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option would lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 4.55 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on the reaches. The major flow reduction would have a minor adverse impact on the angling quality of the brook. Canoeing also takes place along the reaches however the impact of the drought option is unlikely to be significant against a baseline of drought conditions. There are a number of other recreational activities in proximity to the impacted reaches, however, they would not be affected over the duration of the implementation of the drought option.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 4.55 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts on the affected reaches were considered in the assessment. Risk of short term acute, infrequent, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) locally downstream of listed CSOs during rainfall events. Due to the presence of consented discharges, water quality throughout the study area would be at moderate risk from the implementation of the drought option, for dissolved oxygen and total ammonia. Overall, there is a moderate adverse effect on water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 20.5 km stretch of the impacted reaches. Moderate to major hydrological impacts are anticipated towards the impacted reaches. Major adverse effects are anticipated on river habitats associated with the drought option.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of the drought option There is a moderate risk to WFD compliance objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Nearby scheduled monuments are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a National Trail. However, the reduced water levels of the reaches would be short-term and temporary so the impact would be minor.	Minor adverse	None

Drought Plan Option Name: **South West Area Reservoir 12**

Drought Plan Option Description: **Reduced compensation flow release from South West Area Reservoir 12 from 2.64 Ml/d to 0.88 Ml/d. Deployable output is up to 1.76 Ml/d (Trigger 2).**

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. A SAC/SPA/SSSI is located within 10km of the permit area with some being within the 500m buffer. Additionally, part of a SSSI is found within 500m of the permit and another SSSI is found within 1km. No statutory designated sites or NERC or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows would result in a number of impacts on fish species including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. As a result, NERC and Notable species would be subject to the following adverse impacts: Moderate impact for brown trout, white-clawed crayfish and water vole. Minor impact for bullhead, grayling, *Sialis nigripes* and *Paraleptophlebia cincta* . There is a moderate risk of deterioration of WFD status (fish and invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	Reductions in downstream flow may lead to short-term habitat changes (which would affect associated natural capital and ecosystem services) (either beneficial/ adverse) related to changes in inundation levels downstream. The drought permit is expected to cause major changes in river flows, resulting in minor to moderate ecological impacts, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option would lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 1.76 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on the reaches. The major flow reduction would have a minor adverse impact on the angling quality of the brook. Canoeing also takes place along the reaches. However, the impact of the drought option is unlikely to be significant against a baseline of drought conditions. There are a number of other recreational activities in proximity to the impacted reaches, however, these would not be affected over the duration of the implementation of the drought option.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 1.76 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts on affected reaches were considered in the assessment. Risk of short term acute, infrequent, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) locally downstream of listed CSOs during rainfall events. Water quality, including dissolved oxygen, total ammonia, and phosphate concentrations, would be at moderate risk of deteriorating throughout the study area, from the implementation of the drought option. Overall there is a moderate adverse effect on water quality as a result of the drought option.	Moderate 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)**
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 7.8 km stretch of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches. Major adverse effects are anticipated on river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of the drought option There is a moderate risk to WFD compliance objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Nearby scheduled monuments are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a National Trail. However, the reduced water levels of the reaches would be short-term and temporary so the impact would be minor.	Minor adverse	None

Drought Plan Option Name: **South West Area Reservoir 13**

Drought Plan Option Description: **Reduced compensation flow release from South West Area Reservoir 13 from 3.49 Ml/d to 1.16 Ml/d. Deployable output is up to 2.33 Ml/d (Trigger 2).**

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/new infrastructure is required. Three statutory designated sites that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. One LWS is anticipated to experience moderate impacts as a result of the implementation of this drought option. One LNR is anticipated to experience minor impacts and the other LNR is predicted negligible impacts. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 6 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment ranging from low to medium sensitivity and negligible to moderate impact. The others are predicted to experience negligible and minor impacts. The drought option is assessed as having an impact on the following NERC and notable species: Major impact for water vole, and brown trout Moderate impact for bullhead, white-clawed crayfish, river and brook lamprey, European eel. Minor impact for barbel, grayling, and *atherix ibis*. There is a major risk of deterioration of WFD status (fish) and moderate risk of deterioration of WFD status (invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought permit is expected to cause major changes in river flows, resulting in minor and major impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 2.33 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on the impacted reaches. The major reduction in water levels and flows would have a negligible adverse effect on the angling quality of the reach relative to baseline drought conditions.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 2.33 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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) reducing available water downstream however this would be a temporary effect. The option utilises existing assets.	None	None
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Small	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches of the Black Brook and Calder. Two WwTWs present significant water quality pressures in the impacted reaches. Continued risk of short term acute, infrequent, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) locally downstream of listed CSO during rainfall events. The risk of water quality deterioration below what supports good WFD status is moderate for dissolved oxygen and ammonia. Overall there is a moderate risk to water quality as a result of the drought option.	Moderate 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)**
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows, with an associated reduction in wetted width and depth over a 65.6 km stretch of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches and towards two flow depleted reaches. Overall, major impacts are anticipated towards river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of the drought option. There is a moderate risk to WFD objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are numerous Scheduled Monuments in proximity to the impacted reaches of the drought option, however, these sites are not water-dependent and would not be impacted.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a National Trail. However, the reduced water levels of the reaches would be short-term and temporary and in the context of baseline drought conditions, resulting in a minor adverse effect.	Minor adverse	None

Drought Plan Option Name: South West Area Reservoir 14

Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 14 from 1.36 Ml/d to 0.45 Ml/d. Deployable output is up to 0.91 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. No statutory designated sites that or sensitive or susceptible to drought permit impacts have been identified. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. No NERC or other notable and/or protected habitats are located on or within 500m of the impacted reach have deemed sensitive or susceptible to drought permit impacts. The drought option is assessed as having an impact on the following NERC and notable species: Moderate impact for water vole and white-clawed crayfish. There is a moderate risk of deterioration of WFD status (invertebrates) and no risk to WFD status (fish).	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought permit is expected to cause major changes in river flows, resulting in major impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 0.91 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being. At 0.91 Ml/d, the deployable output results in a negligible beneficial assessment.	None	Negligible beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	N/A	N/A	N/A	N/A	N/A	N/A	There are no opportunities or threats to formal or informal recreation.	None	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 0.91 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment. At 0.91 Ml/d, the deployable output results in a negligible beneficial assessment.	None	Negligible beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards reaches within the River Colne were considered in the assessment. The risk of water quality deterioration below what supports good WFD status for fish and invertebrates is minor for dissolved oxygen, ammonia and phosphate. Overall there is a minor risk to water quality as a result of the drought option.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 2 km stretch of the impacted reaches. Overall, major impacts are anticipated towards river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. At 0.91 Ml/d, the deployable output results in a negligible beneficial assessment. Water availability is less than 30% within this reach. There is a minor risk to WFD objectives from this drought option. Overall, the impact on the affected reaches is assessed as minor adverse.	Minor adverse	Negligible beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	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)**
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress. At 0.91 Ml/d, the deployable output results in a negligible beneficial assessment.	None	Negligible beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are numerous Scheduled Monuments in proximity to the impacted reaches of the drought option. However, they are not water-dependent, as such, they would not be impacted.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	N/A	N/A	N/A	N/A	N/A	N/A	There are no landscape designations in proximity to the impacted reaches of the drought option.	None	None

Drought Plan Option Name: South West Area Reservoir 15

Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 15 from 8.07 Ml/d to 2.69 Ml/d. Deployable output is up to 5.38 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. Three statutory designated sites that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. One LNR is anticipated to experience moderate impacts as a result of the implementation of this drought option. One LNR is anticipated to experience minor impacts and the other LNR is predicted negligible impacts. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 6 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment ranging from low to medium sensitivity and negligible to moderate impact. One LWS is anticipated to experience moderate impacts as a result of the implementation of this drought option. The others are predicted to experience negligible and minor impacts. The drought option is assessed as having an impact on the following NERC and notable species: Major impact for brown trout. Moderate impact for *potamophylax rotundipennis* , white-clawed crayfish, water vole, grayling, bullhead, river, and brook lamprey, European eel. Minor impact for barbel. There is a major risk of deterioration of WFD status (fish) and moderate to WFD status (invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought permit is expected to cause major changes in river flows, resulting in minor and major impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option would deliver up to 5.38 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	There is an organised angling club present on the River Colne. The reduction in flows and water levels would have a minor adverse impact on the angling club relative to baseline drought conditions.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 5.38 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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

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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards reaches of the River Colne and River Calder were considered in the assessment. Risk of short term acute, infrequent, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) locally downstream of listed CSOs during rainfall events. Therefore, the water quality deterioration risk imposed by the implementation of the drought option would be moderate for total ammonia and oxygen, and minor for phosphate, due to consented discharges. Overall there is a minor to moderate risk to water quality as a result of the drought option.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 77.6 km stretch of the impacted reaches. Moderate to major hydrological impacts are anticipated towards the impacted reaches and towards six flow depleted reaches. Overall, minor and major impacts are anticipated towards river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of the drought option. There is a minor to moderate risk to WFD objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as minor adverse.	Minor adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are numerous Scheduled Monuments in proximity to the impacted reaches of the drought option. However, they are not water-dependent, as such, they would not be impacted.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a small section of a National Trail. However, the reduced water levels of the reaches would be short-term and temporary and in the context of natural drought conditions.	Minor adverse	None

Drought Plan Option Name: South West Area Reservoir 16

Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 16 from 7.274 Ml/d to 2.42 Ml/d. Deployable output is up to 4.854 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. Three statutory designated sites that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. One LNR is anticipated to experience moderate impacts as a result of the implementation of this drought option. One LNR is anticipated to experience minor impacts and the other LNR is predicted negligible impacts. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 6 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment ranging from low to medium sensitivity and negligible to moderate impact. One LWS is anticipated to experience moderate impacts as a result of the implementation of this drought option. The others are predicted to experience negligible and minor impacts. The drought option is assessed as having an impact on the following NERC and notable species: Major impact for brown trout. Moderate impact for *potamophylax rotundipennis* , white-clawed crayfish, water vole, grayling, bullhead, river, and brook lamprey, European eel. Minor impact for barbel. There is a major risk of deterioration of WFD status (fish) and moderate to WFD status (invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought permit is expected to cause major changes in river flows, resulting in minor and major impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 4.854 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	There is an organised angling club present on the River Colne. The reduction in flows and water levels would have a minor adverse impact on the angling club relative to baseline drought conditions.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 4.854 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Impacts towards reaches of the River Colne and River Calder were considered in the assessment. Risk of short term acute, infrequent, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) locally downstream of listed CSOs during rainfall events. The risk of water quality deterioration below what supports good WFD status for fish and invertebrates is moderate for dissolved oxygen and ammonia, and minor phosphate. Overall there is a minor to moderate risk to water quality as a result of the drought option.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 77.3 km stretch of the impacted reaches. Moderate to major hydrological impacts are anticipated towards the impacted reaches and towards four flow depleted reaches. Overall, minor to major impacts are anticipated towards river habitats associated with the drought option.	Major 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)**
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence. There is a minor to moderate risk to WFD objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as minor adverse.	Minor adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are numerous Scheduled Monuments in proximity to the impacted reaches of the drought option. However, they are not water-dependent, as such, they would not be impacted.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A significant reduction in the water level of the impacted reaches would have a visual impact on the landscape setting of a National Trail. However, the reduced water levels of the reaches would be short-term and temporary and occur in the context of natural drought.	Minor adverse	None

Drought Plan Option Name: South West Area Reservoir 17

Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 17 from 2.67 Ml/d to 0.89 Ml/d. Deployable output is up to 1.78 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. Three statutory designated sites that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment . One LNR (and LWS) is anticipated to experience moderate impacts as a result of the implementation of this drought option. One LNR is anticipated to experience minor impacts and the other LNR is predicted negligible impacts. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 6 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment ranging from low to medium sensitivity and negligible to moderate impact. The others are predicted to experience negligible and minor impacts. As a result, NERC and Notable species would be subject to the following adverse impacts: Major impact for brown trout. Moderate impact for *potamophylax rotundipennis* , water vole, bullhead, grayling, white-clawed crayfish, river and brook lamprey. Minor impact for *atherix ibis* . There is a major risk of WFD status deterioration for fish, and a moderate risk of WFD status deterioration for invertebrates, resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought permit is expected to cause major changes in river flows, resulting in minor and major impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 1.78 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on the impacted reaches. The reduced flows would have a minor adverse effect on the angling quality of the reach relative to baseline drought conditions.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 1.78 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches of the River Colne, and River Calder and River Holme were considered in the assessment. Risk of short term acute, infrequent, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) locally downstream of listed CSO during rainfall events. The risk of water quality deterioration below what supports good WFD status is moderate for dissolved oxygen and ammonia, and minor to moderate for phosphate. Overall there is a minor to moderate risk to water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 18.5 km stretch of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches and towards four flow depleted reaches. Overall, minor and major impacts are anticipated towards river habitats associated with the drought option.	Major adverse	

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 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is at least 95% along all reaches part of this assessment. There is a moderate risk to WFD objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are numerous Scheduled Monuments in proximity to the impacted reaches of the drought option. However, they are not water-dependent, as such, they would not be impacted.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	N/A	N/A	N/A	N/A	N/A	N/A	There are no designated landscapes in proximity to the impacted reaches of the drought option.	None	None

Drought Plan Option Name: South West Area Reservoir 18
Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 18 from 0.612 Ml/d to 0.20 Ml/d. Deployable output is up to 0.412 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. Three statutory designated sites that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. One LNR is anticipated to experience moderate impacts as a result of the implementation of this drought option. One LNR is anticipated to experience minor impacts and the other LNR is predicted negligible impacts. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 6 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment ranging from low to medium sensitivity and negligible to moderate impact. One LWS is anticipated to experience moderate impacts as a result of the implementation of this drought option. The others are predicted to experience negligible and minor impacts. As a result, NERC and Notable species would be subject to the following adverse impacts: Major impacts to brown trout. Moderate impact for water vole, bullhead, grayling, white-clawed crayfish, river and brooklLamprey, European eel, and *potamophylax rotundipennis*. Minor impact for *atherix ibis*. There is a major risk of deterioration of WFD status (fish) and moderate risk to WFD status (invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought permit is expected to cause major changes in river flows, resulting in major impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 0.412 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being. At 0.412 Ml/d, the deployable output results in a negligible beneficial assessment.	None	Negligible beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on the impacted reaches. The reduced flows would have a negligible adverse effect on the angling quality of the reach relative to baseline drought conditions.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 0.412 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment. At 0.412 Ml/d, the deployable output results in a negligible beneficial assessment.	None	Negligible beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches of the River Colne, River Calder and River Holme were considered in the assessment. Risk of short term acute, infrequent, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) locally downstream of listed CSOs during rainfall events. Due to downstream locally consented discharges, the risk of water quality deterioration below what supports good WFD status is moderate for dissolved oxygen, ammonia and phosphate. Overall there is a moderate risk to water quality as a result of the drought option.	Moderate 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)**
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 20.2 km stretch of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches and towards six flow depleted reaches. Overall, major impacts are anticipated towards river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (beneficial) Low (beneficial)	Medium (beneficial) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. At 0.412 Ml/d, the deployable output results in a negligible beneficial assessment. Water availability is less than 30% in part of the zone of influence of the drought option. There is a moderate risk to WFD objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Negligible beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress. At 0.412 Ml/d, the deployable output results in a negligible beneficial assessment.	None	Negligible beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are no heritage in proximity to the impacted reaches of the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	N/A	N/A	N/A	N/A	N/A	N/A	Several walking trails run in close proximity to the impacted reaches however none are considered sensitive.	None	None

Drought Plan Option Name: South West Area Reservoir 6
Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 6 from 3.20-10.60 Ml/d to 1.07-3.53 Ml/d. Deployable output is up to 7.07 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. Three statutory designated sites that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. One LNR (and LWS) is anticipated to experience moderate impacts as a result of the implementation of this drought option. One LNR is anticipated to experience minor impacts and the other LNR is predicted negligible impacts. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 6 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment ranging from low to medium sensitivity and negligible to moderate impact. The others are predicted to experience negligible and minor impacts. The drought option is assessed as having an impact on the following NERC and notable species: Major impact for brown trout. Moderate impact for *Potamophylax rotundipennis* , water vole, bullhead, grayling, white-clawed crayfish, European eel, and river and brook lamprey. Minor impact for *Ameletus inopinatus* and *Atherix ibis* There is a major risk of deterioration of WFD status (fish) and a moderate risk of deterioration of WFD status (invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought permit is expected to cause major changes in river flows, resulting in major impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option would deliver up to 7.07 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on the impacted reaches. The reduced flows would have a negligible adverse effect on the angling quality of the reach relative to baseline drought conditions.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 7.07 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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

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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches of the River Colne, River Calder and River Holme were considered in the assessment. Risk of short term acute, infrequent, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) locally downstream of listed CSOs during rainfall events. Therefore, the risk of water quality deterioration below what supports good WFD status for fish and invertebrates is moderate for dissolved oxygen and ammonia. Overall there is a minor to moderate risk to water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 78.6 km stretch of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches and towards two flow depleted reaches. Overall, major impacts are anticipated towards river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	High	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of the drought option. There is a moderate risk to WFD objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are numerous Scheduled Monuments in proximity to the impacted reaches of the drought option. However, they are not water-dependent, as such, they would not be impacted.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	N/A	N/A	N/A	N/A	N/A	N/A	There are no designated landscapes in proximity to the impacted reaches of the drought option.	None	None

Drought Plan Option Name: South West Area Reservoir 7

Drought Plan Option Description: Reduced compensation flow release from South West Area Reservoir 7 from 4.80-6.90 Ml/d to 1.60-2.30 Ml/d. Deployable output is up to 4.60 Ml/d (Trigger 2).

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. Three statutory designated sites that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. One LNR is anticipated to experience moderate impacts as a result of the implementation of this drought option. One LNR is anticipated to experience minor impacts and the other LNR is predicted negligible impacts. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 6 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment ranging from low to medium sensitivity and negligible to moderate impact. One LWS is anticipated to experience moderate impacts as a result of the implementation of this drought option. The others are predicted to experience negligible and minor impacts. The drought option is assessed as having an impact on the following NERC and notable species: Major impact for brown trout. Moderate impact for *Potamophylax rotundipennis* , water vole, white-clawed crayfish, bullhead, brook lamprey, European eel, river lamprey and grayling. Minor impact for barbel, *Wormaldia subnigra* , Atherix ibis, *Potamophylax rotundipennis, Potamophylax rotundipennis, Ameletus inopinatus* and *Tinodes unicolor* There is a major risk of WFD deterioration for Fish, and a moderate risk of deterioration of WFD status for invertebrates, resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought permit is expected to cause major changes in river flows, resulting in major impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to moderate adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The implementation of the drought option will lead to a reduction in flow and is therefore not anticipated to increase the spread of aquatic invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver up to 4.60 Ml/d helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is casual angling present on the impacted reaches. The reduced flows would have a negligible adverse effect on the angling quality of the reach relative to baseline drought conditions.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 4.60 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. 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	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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

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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches of the River Colne and River Holme and River Calder were considered in the assessment. Risk of short term acute, infrequent, temporary water quality pressures (acute toxicity of ammonia, suffocation from oxygen sags) locally downstream of listed CSOs during rainfall events. Due to consented discharges, the risk of water quality deterioration upon the implementation of the drought option would be moderate for total ammonia, oxygen and phosphate, Overall there is a minor to moderate risk to water quality as a result of the drought option.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 67%), with an associated reduction in wetted width and depth over a 78.4 km of the impacted reaches. Major hydrological impacts are anticipated towards the impacted reaches and towards six flow depleted reaches. Overall, minor to major impacts are anticipated towards river habitats associated with the drought option.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Medium	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought permit will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is less than 30% in part of the zone of influence of this drought option. There is a moderate risk to WFD objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves a reduction in compensation flow with no change in existing abstraction volumes and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	There are numerous Scheduled Monuments in proximity to the impacted reaches of the drought option. However, they are not water-dependent, as such, they would not be impacted.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	N/A	N/A	N/A	N/A	N/A	N/A	There are no landscape designations in proximity to the impacted reaches of the drought option.	None	None

Drought Option Name: **Ouse increased abstraction**

Drought Plan Option Description: **The drought option involves an increased abstraction volume from the River Ouse where an abstraction permit is currently in place. Deployable output is up to 60 Ml/d dependent on flows in the river.**

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 To conserve 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.	Large	Low	Medium-term	Temporary	Medium (adverse)	Medium (adverse)	No construction or new infrastructure is required. Risks to 5 SSSIs have been assessed as negligible. The drought option will impact wetted width, especially in shallow areas of the channel, potentially reducing habitat availability. The drought option is assessed as having minor adverse impacts on two LWS. The drought option is assessed as having an impact on the following NERC and notable species: Moderate impacts for sea lamprey and river lamprey Minor impacts for brook lamprey, *oreodytes davisii* , *potamophylax rotundipennis* , *nigrobaetis niger* , *rhyacophila septentrionis* , *sialis nigripes* . Assessment found a minor adverse effect on Fish and Invertebrates regarding WFD status receptors, resulting in an overall moderate adverse effect related to the increased abstraction.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Medium-term	Temporary	Medium (adverse)	Medium (adverse)	The drought permit is expected to cause moderate changes in river flows, resulting in minor impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may effect the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Assessment of INNs has concluded that implementation of the drought option will lead to a reduction in flow, and is therefore not anticipated to increase the spread of aquatic invasive non-native species. No INNS receptors that are sensitive or susceptible to drought order permit impacts have been identified.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Large	Medium	Medium-term	Temporary	High (beneficial)	Medium (beneficial)	The drought option would provide up to 60 Ml/d, helping to maintain essential public water supplies during drought conditions, and will therefore help maintain public health and well-being.	None	Major beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Large	Medium	Medium-term	Temporary	Low (adverse)	Low (adverse)	The drought option would only cause a moderate reduction in flow; therefore, recreational activities such as angling are unlikely to be impacted. Similarly, whilst there would be visual changes to the river visible from nearby national trails, there would be no adverse impacts to these recreation assets. Recreational receptors are unlikely to be impacted over the duration of the drought options implementation.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Large	Medium	Medium-term	Temporary	High (beneficial)	Medium (beneficial)	The drought option supports the objective by maintaining secure water resources (up to 60 Ml/d), which are fundamental to both economic sustainability and community wellbeing, while ensuring continued access to essential services.	None	Major beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Large	Medium	Medium-term	Temporary	Low (beneficial)	Medium (beneficial)	No construction, no new energy use and no construction waste. The option involves modifications to abstraction volumes only, and no significant changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure and operate in compliance with the drought order/permit to maintain essential public water supplies during drought conditions.	None	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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

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 To maintain or improve the quality of surface and groundwater resources	Large	Medium	Medium-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts to the following reach were considered in the assessment, River Ouse. There is a moderate risk that the drought option flow reduction would reduce the downstream dissolved oxygen saturation and increase total ammonia concentrations below values which support 'good' or 'high' status for fish and invertebrates. Overall there is a moderate risk to water quality as a result of the drought option associated with intermittent water quality pressures in the reach.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Large	Medium	Medium-term	Temporary	Medium (adverse)	Medium (adverse)	The drought option would lead to a moderate reduction in low flows (up to 14% in summer months), with associated reduction in wetted width and depth over 20.6 km of the River Ouse. The drought option would not impact on the moderate to high flow regime in the receiving watercourses. There are two localised flow pressures in the upper reach, which collectively are assessed as having a minor impact when the drought option is operated.	Moderate adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Large	Medium	Medium-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	This option will be managed within the drought order conditions and operational controls will be in place to avoid adverse effects on sensitive water-dependent ecosystems. This approach supports the sustainable management of water resources and contributes to the protection of ecological status under the Water Framework Directive. The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is at least 50% in the zone of influence of the drought option. There is a moderate risk to WFD objectives from this drought option mostly associated with CSO discharge. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land	N/A	N/A	N/A	N/A	N/A	N/A	There are no land use changes associated with the implementation of the drought option. Abstraction infrastructure will remain within an existing developed corridor. It is anticipated that there will be no impacts on geologically sensitive sites.	None	None
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves minor modifications to abstraction volumes and would therefore not result in any significant increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	Increase in abstraction volumes would be associated with a negligible change in energy use and therefore no significant increase in greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Large	Medium	Medium-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Major beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites	N/A	N/A	N/A	N/A	N/A	N/A	Nearby ancient monuments and heritage sites are not water-dependent, and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity	N/A	N/A	N/A	N/A	N/A	N/A	There are no designated landscapes in proximity to the impacted reaches of the drought option.	None	None

Drought Plan Option Name: Ure Increased Abstraction

Drought Plan Option Description: The drought option involves an increased abstraction volume from the River Ure where an abstraction permit is currently in operation. Additional deployable output up to 3.27 Ml/d dependent on flow levels in the river.

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 To conserve 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	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. No statutory designated sites that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. No NERC or other notable and/or protected habitats located on or within 500m of the impacted reach have deemed sensitive or susceptible to drought permit impacts. The drought option is assessed as having an impact on the following NERC and notable species: Major impact on Atlantic salmon, European eel and river lamprey. Moderate impact for water vole, barbel, brook lamprey, brown trout, bullhead, grayling, fine-lined pea mussel and *Rhyacophila fasciata* . The risk of deterioration of WFD status has been assessed as minor (fish and invertebrates), resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	The drought permit is expected to cause moderate changes in river flows, resulting in minor to moderate impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have major effects on the hydrological cycle at a local scale, influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	Small	Moderate	Short-term	Temporary	Low (adverse)	Low (adverse)	Invasive non-native species have been identified in the impacted reaches. The potential hydrological changes associated with the drought option are not expected to increase the spread of *Oncorhynchus mykiss,* Himalayan balsam (*Impatiens glandulifera*) and Japanese knotweed (*Fallopia japonica*). Based on the expected changes in hydrology and water quality, there is a risk that freshwater shrimp *(Crangonyx pseudogracilis)* abundances will increase if the native freshwater gammarid populations decrease as a result of the drought option. However, the impact on gammarid populations is expected to be short-term and, as such, the proliferation of the invasive freshwater shrimp is expected to be short-term and of low magnitude. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	Negligible adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Moderate	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would deliver 3.27 Ml/d, helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well being.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Moderate	Short-term	Temporary	Low (adverse)	Medium (adverse)	The Ure supports a high density of salmon and is considered to be important for anglers. The effect of the drought option is assessed as minor adverse as alternative angling locations would be available during the implementation of the drought.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Moderate	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought action supports the objective by maintaining secure water resources (up to 3.27Ml/d), which are fundamental to both economic sustainability and community wellbeing, while ensuring continued access to essential services.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Moderate	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. The option involves relatively minor modifications to abstraction volumes only and no significant 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 option utilises existing assets.	None	None
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Small	Moderate	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The River Ure watercourse was considered in the assessment. The risk of water quality deterioration is assessed as moderate for dissolved oxygen and total ammonia, and minor for phosphate, due to downstream locally consented discharges. Overall there is a moderate risk to water quality as a result of the drought option.	Moderate 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 To protect and enhance surface and groundwater levels and flows	Small	Moderate	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought option would lead to a moderate reduction in low flows (up to 21.4%), with associated reduction in wetted width and depth over a 10.6 km stretch of the River Ure. Moderate hydrological effects are anticipated on the impacted reaches.	Moderate adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Moderate	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is at least 50% in the zone of influence of the drought option. There is a moderate risk to WFD status due to physical environment changes. Overall, the effect on the affected reaches is assessed as moderate adverse.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	N/A	N/A	N/A	N/A	N/A	N/A	There are no land use changes associated with the implementation of the drought option. It is anticipated that there will be no impacts on geologically sensitive sites.	None	None
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves minor modifications to abstraction volumes and would therefore not result in any significant increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	Increase in abstraction volumes would be associated with a negligible change in energy use and therefore no significant increase in greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Moderate	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Nearby scheduled monuments and heritage sites are not water-dependent, and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Moderate	Short-term	Temporary	Low (adverse)	Medium (adverse)	A National Trail runs alongside the River Ure and forms part of a National Landscape. However, the flow level reduction under drought conditions would not be perceptible.	Negligible adverse	None

Drought Option Name: **Wharfe reduced regulated flow**

Drought Plan Option Description: The drought option involves an increased abstraction volume from the River Wharfe where an abstraction permit is currently in place. A drought permit would be required to provide a benefit of up to 22.70 Ml/d, dependent on flow levels in the river.

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/ short-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 To conserve 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	Low	short-term	Temporary	Medium (adverse)	Medium (adverse)	No construction or new infrastructure is required for this option, so this assessment focuses on operational effects. There are three SSSIs connected to the impacted reach: A SAC/SPA, and a SAC/ SPA/ SSSI are also within proximity to the option. None of these sites is likely to experience an impact from the implementation of this option. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. 1 NERC Act Section 41 or other notable and/or protected habitats that are sensitive or susceptible to drought permit impacts have been identified within 500m of the impacted reach for detailed assessment. The impact on the nearby LWS is assessed as minor, with other LWS regarded as experiencing negligible or no adverse effects. The drought option will impact wetted width, especially in shallow areas of the channel, potentially reducing habitat availability. The drought option is assessed as having a moderate impact on the following NERC species and notable species due to siltation of spawning gravels and exposure of habitat: Moderate impacts for water vole, Atlantic salmon, brown trout, river lamprey, brook lamprey and grayling. With minor impacts for European eel, barbel, and bullhead. The risk of deterioration of WFD status regarding fish and Invertebrates is assessed as moderate, resulting in an overall moderate adverse effect related to the increased abstraction.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To 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 (adverse)	The drought permit is expected to cause moderate changes in river flows, resulting in moderate impacts on riverine habitats, including altered hydraulic conditions and reduced habitat availability. The scheme may have moderate effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. 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 assessment does not identify the option as being within a designated Nature Improvement Area. 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 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Assessment of INNs has concluded that implementation of the drought option will lead to a reduction in flow, and is therefore not anticipated to increase the spread of aquatic invasive non-native species. No INNS receptors that are sensitive or susceptible to drought order permit impacts have been identified. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Medium	short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option would provide 22.70 Ml/d, helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well-being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	short-term	Temporary	Low (adverse)	Low (adverse)	The drought option would only cause a moderate reduction in flow; therefore, recreational activities such as angling are unlikely to be impacted. National trails and local golf clubs are unlikely to experience any impacts from this option unless in close proximity, and this adverse visual effect will be temporary. Navigation of the lower reaches of the river is not expected to be affected; these stretches are tidal. Recreational receptors are unlikely to be impacted over the duration of the drought options implementation.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Implementation of the drought permit will provide up to 22.70 Ml/d and contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction, no new energy use and no construction waste. The option involves relatively minor modifications to abstraction volumes only, and no significant changes to energy use, generated waste or sustainable designs are envisaged. The option will make use of existing infrastructure and operate in compliance with the drought order/permit to maintain essential public water supplies during drought conditions.	None	Negligible beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Small	Medium	short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The proposed drought abstraction option would contribute to efficient water resource management and support the maintenance of supply during dry periods. By allowing increased abstraction only when necessary and under controlled flow conditions, the scheme provides operational flexibility and enhances drought resilience. It helps safeguard water supplies for homes and industry without requiring permanent increases in licensed abstraction, thus supporting sustainable natural resource use.	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/ short-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 To maintain or improve the quality of surface and groundwater resources	Small	Medium	short-term	Temporary	Medium (adverse)	Medium (adverse)	Impacts towards reaches of the River Wharfe were considered in the assessment. Water quality throughout the study area is assessed as moderate risk of deteriorating with regards to total ammonia and medium risk for dissolved oxygen and minor for phosphate. This risk may increase locally, downstream of consented water quality pressures. There are several water quality pressures within the reach, including one llkley WwTW. Overall, moderate adverse effects on water quality are anticipated.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought option would lead to a moderate reduction in low flows (up to 18% in summer and dry autumn months), with associated reduction in wetted width and depth over 68.4 km of the River Wharfe. The drought option would not impact on the moderate to high flow regime in the receiving watercourses. Impacted reaches are navigable from Tadcaster to confluence with Ouse, however the drought option unlikely to affect river levels on this stretch, most of which is tidal. Overall moderate impacts are anticipated towards river habitats associated with the drought option.	Moderate adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Medium	short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is at least 70% in the zone of influence of the drought option. There are six frequently operating CSOs which potentially present an environmental risk in the reach. Overall, the impact on the affected reaches is assessed as moderate adverse.	Moderate adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	N/A	N/A	N/A	N/A	N/A	N/A	There are no land use changes associated with the implementation of the drought option. Abstraction infrastructure will remain within an existing developed corridor. It is anticipated that there will be no impacts on geologically sensitive sites.	None	None
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves minor modifications to abstraction volumes and would therefore not result in any significant increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The increase in abstraction volumes would be associated with a negligible change in energy use and therefore no significant increase in greenhouse gas emissions are envisaged. The use of existing infrastructure will minimise greenhouse gas emissions. The extent of renewable energy use and energy efficiencies is not known at this stage.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Medium	short-term	Temporary	Medium (beneficial)	Medium (beneficial)	By abstracting an additional 22.7Ml/d of water this option aims to ensure resilience of water supplies to drought which may become more prevalent due to climate change.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Nearby scheduled monuments and heritage sites are not water-dependent and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	short-term	Temporary	Low (adverse)	Medium (adverse)	A reduction in the level of the River Wharfe will have a visual impact on a National Landscape. However, there is limited access to the impacted reach with no national trails.	Minor adverse	None

Drought Plan Option Name: Hull increased abstraction

Drought Plan Option Description: The drought option involves a lowering of the Hands Off Flow of an existing abstraction licence that is currently in operation on the Hull increased abstraction. Deployable output is up to 20.45 Ml/d dependent on flow levels in the river. The option involves no construction activities or material change in the operation of the abstraction facility.

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 To conserve 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.	Large	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	No construction/ new infrastructure is required. No statutory designated sites that are sensitive or susceptible to drought permit impacts have been identified for detailed assessment. The reduced flows will result in a number of impacts, including: the stranding of individuals or groups; deterioration or loss of habitats; fragmentation of habitats; increased mortality; and changes in morphology or behaviour. No NERC or other notable and/or protected habitats located on or within 500m of the impacted reach have deemed sensitive or susceptible to drought permit impacts. The drought option is assessed as having an impact on the following NERC and Notable species due to mortality as a result of water quality deterioration (oxygen stress, gill clogging): Moderate impact risk for brook lamprey, brown trout, European eel, barbel, grayling, bullhead and river lamprey. There is a moderate risk of deterioration of WFD status for fish and a minor risk of deterioration for invertebrates, resulting in an overall moderate adverse effect on aquatic receptors.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Large	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	This drought option is expected to cause a major reduction in river flow, leading to moderate risks of changes in river and estuarine habitats. In rivers, this may alter system energy and available habitats for different species, with minor effects on sediment dynamics, though wetted area and connectivity remain unaffected. In estuarine areas, reduced flow could significantly influence tidal dynamics, posing moderate risks to sub-tidal extent, ponded sections at slack water, and saline intrusion, alongside minor risks of increased turbidity and sediment deposition. The scheme may have major effects on the hydrological cycle at a local scale, by influencing surface water flows, which may affect water-dependent features downstream. However, any effect would be short-term and temporary and implementation of mitigation measures through the EMP would avoid or reduce any potential effects to minor adverse. As this option does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Invasive species utilise flow of the watercourse for dispersal. The drought option involves the lowering of a Hands Off Flow (HOF) which would lead to a minor reduction in flow, and is therefore not anticipated to increase the risk of the spread of invasive non-native species. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Large	Moderate	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought option would provide up to 20.45 Ml/d in additional deployable output, helping to maintain essential public water supplies during drought conditions, and therefore help maintain public health and well being.	None	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Large	Moderate	Short-term	Temporary	Medium (adverse)	Low (adverse)	Angling is unlikely to be impacted by flow reduction, however, the water quality implications of reduced flow on estuarine flushing (of a the Beverley STW effluent plume) on fisheries may become apparent. The watercourse is navigable between Corpslanding and the river mouth, however impacts on navigation would be minimal.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Large	Moderate	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The drought action supports the objective by maintaining secure water resources (up to 20.45 Ml/d), which are fundamental to both economic sustainability and community wellbeing, while ensuring continued access to essential services.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Large	Moderate	Short-term	Temporary	Low (beneficial)	Low (beneficial)	The drought option involves the lowering of a HOF 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 To maintain or improve the quality of surface and groundwater resources	Large	Moderate	Short-term	Temporary	High (adverse)	Medium (adverse)	The River Hull was considered in the assessment. The drought permit poses significant water quality risks, particularly near a WwTW, where there is a major risk of medium-term chronic pressures, including acute ammonia toxicity and oxygen sags that could suffocate aquatic life. While general water quality elsewhere remains largely Good or High under WFD standards, these severe local impacts represent the most critical concern. No significant intermittent or continuous pollution pressures have been identified. Overall, major adverse effects are anticipated towards water quality.	Major adverse	None

SEA topics and objectives		Assessment of option								
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Water	4.2 To protect and enhance surface and groundwater levels and flows	Large	Moderate	Short-term	Temporary	High (adverse)	Medium (adverse)	The drought option would lead to a major reduction in low flows (up to 45.8%), with associated reduction in wetted width and depth over 0.1 km of the River Hull. There would also be an uncertain reduction in fresh water inflow in the tidal zone of the river, spanning 30km. The drought option will not impact on the moderate to high flow regime in receiving watercourses. The watercourse is navigable, however impacts on navigation would be minimal. Moderate adverse effects are anticipated towards river and estuarine habitats.	Major adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Large	Moderate	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is at least 95% in the zone of influence of the drought option. There is a minor risk to WFD status due to physical environment changes. Overall, the effect on the affected reaches is assessed as minor adverse.	Minor adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	N/A	N/A	N/A	N/A	N/A	N/A	There are no land use changes associated with the implementation of the drought option. It is anticipated that there will be no impacts on geologically sensitive sites.	None	None
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves minor modifications to abstraction volumes and would therefore not result in any significant increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	Increase in abstraction volumes would be associated with a negligible change in energy use and therefore no significant increase in greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Large	Moderate	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically	N/A	N/A	N/A	N/A	N/A	N/A	No nearby water-dependent scheduled monuments or heritage sites would be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	N/A	N/A	N/A	N/A	N/A	N/A	There are no designated landscapes in the immediate vicinity.	None	None

Drought Plan Option Name: Derwent annual abstraction increase.

Drought Plan Option Description: The drought permit involves increasing the annual licensed abstraction volume at River Derwent Site 1 by approximately 2,300 Ml and reducing the annual volume at River Derwent Site 2 by the same amount. Daily abstraction limits, aggregate totals, and hands-off flow conditions remain unchanged. The effect is limited to the River Derwent reach between River Derwent Site 2 and River Derwent Site 1, with negligible hydrological impact and no change to summer flows.

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Biodiversity, flora and fauna	1.1 To conserve 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.	Large	Low	Short-term	Temporary	Low (adverse)	Low (adverse)	No construction/ new infrastructure is required. The EAR identified a number of high sensitivity sites. 4 Sites with medium sensitivity. Despite these sensitivities, the hydrological impact of the drought permit is assessed as negligible across all locations, with river flows expected to increase during the implementation period (winter and early spring) against a backdrop of drought conditions. Among the NERC-designated Local Wildlife Sites (LWS), 2 LWS have medium sensitivity, while others are assessed as low sensitivity. All these sites are expected to experience moderate hydrological impacts during summer under drought permit conditions. The EAR screened the following NERC and notable species for their sensitivity: High sensitivity: Atlantic salmon, brown trout, European eel, sea lamprey, river lamprey, twaite shad, and allis shad. Medium sensitivity: grayling, bullhead, brook lamprey, and barbel. Low sensitivity: otter, aquatic invertebrates (e.g., diving beetle, caddisflies, mayfly, alderfly), and terrestrial invertebrates such as tansy beetle. Due to-the negligible impact on river flows identified in the EAR, and the absence of any anticipated effects on hydrologically connected sites, habitats, or species, no significant adverse effects are anticipated.	Negligible adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on river habitats are anticipated. As this option does not involve any construction activities, there will be no physical habitat loss or disturbance, and therefore no opportunities for compensatory planting or habitat enhancement. 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.	None	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	N/A	N/A	N/A	N/A	N/A	N/A	Aquatic invasive species often rely on watercourse flow for dispersal. As the drought permit will not reduce flows and any increases remain within normal variability, it is not anticipated to increase the spread of aquatic invasive non-native species.	None	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The permit is primarily intended to reduce ecological risk by shifting abstraction downstream, while also supporting operational flexibility to maintain supply security during drought. By safeguarding public water supply during drought and protecting the river environment, the drought permit supports health and well-being by ensuring access to clean water and maintaining the natural spaces that contribute to recreation and mental health. It does not produce additional deployable output.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Large	Medium	Short-term	Temporary	Low (beneficial)	Low (beneficial)	Angling takes place on the river Derwent is unlikely to be impacted. Increased flows may improve the quality of angling however the benefit would be negligible.	None	Negligible beneficial
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Large	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	No construction, no new energy use and no construction waste. The option involves relatively minor modifications to abstraction volumes only and no significant 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring 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 option utilises existing assets.	None	None
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Large	Medium	Short-term	Temporary	Low (beneficial)	Low (beneficial)	The River Derwent- has been included in this assessment. Increasing flow through the drought permit is expected to improve water quality temporarily by diluting point-source pollutants downstream. There is no risk of worsening existing water quality pressures.	None	Negligible beneficial

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Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	The drought permit application for the River Derwent is to increase the annual abstraction limit at **River Derwent Site 1** by 2,300 Ml/year, and to correspondingly decrease the annual abstraction limit at **River Derwent Site 2** by 2,300 Ml/year. The daily limits at each site, and all aggregate volumes are unchanged. The hydrological effects of the drought permit are considered probable and would be an increase in River Derwent flows downstream of **River Derwent Site 2** intake as far as th**e River Derwent Site 1** intake (up to 9.9%), for a 23.9 km stretch, with the daily flow unaffected downstream of **River Derwent Site 1** intake. Overall, the magnitude of the effect on flows is considered indiscernible in the context of the River Wharfe's daily variability and all hydrological impacts are considered reversible. The drought permit is assessed as with negligible effect on the hydrology of the River Derwent throughout the study area.	Negligible adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	This drought permit does not provide any additional deployable output however it does ensures the maintenance of supply reliability in drought conditions. The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. There is on risk to WFD status.	None	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	N/A	N/A	N/A	N/A	N/A	N/A	No opportunities to promote long-term improvement in water efficiency have been identified for this option.	None	None
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	There are no land use changes associated with reduced compensation flow. It is anticipated that there will be no impacts on geologically sensitive sites. However, there may be some impacts on geomorphology including bank erosion when higher flows return. The scheme takes place on previously developed land which supports efficient use of land.	Negligible adverse	Negligible beneficial
Air and Climate	6.1 To maintain and improve air quality.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option involves modifications to the abstraction regime with no change in energy use and would therefore not result in any increases in emissions to atmosphere.	None	None
Air and climate	6.2 To reduce greenhouse gas emissions.	N/A	N/A	N/A	N/A	N/A	N/A	The drought option would not be associated with an increase in energy consumption, therefore, no changes to greenhouse gas emissions are envisaged.	None	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Large	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought conditions which may become more prevalent due to climate change, supporting climate adaptation goals by reducing vulnerability to supply stress.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	Nearby ancient monuments and heritage sites are not water-dependent, and would not be impacted by the drought option.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	N/A	N/A	N/A	N/A	N/A	N/A	No impacts on the surrounding landscape are anticipated as this drought option has negligible impact on river flows.	None	None

Drought Plan Option Name: **Catterick Groundwater Option 1**

Drought Plan Option Description: **The drought option relates to Catterick Groundwater Option 1. During a drought, a drought permit or order application would enable an increased abstraction from the existing borehole. No additional construction is required. There is potential for pumping at 14 Ml/d during extreme drought for a month with contingency to a nearby borehole. Option would meet local demand, but could also help reduce input into the Grid from a WTW. The likely benefit during a drought is 2 Ml/d.**

SEA topics and objectives		Assessment of option								
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Biodiversity, flora and fauna	1.1 To conserve 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) and consider adaptability to climate change.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Stage 1 HRA screening has indicated that likely significant effects on an SAC could not be ruled out as a result of the implementation of the Catterick Groundwater Option 1 scheme. HRA Guidance indicates that the Plan-making authority (in this case, Yorkshire Water) shall adopt, or otherwise give effect to the Plan, only after having ascertained that it will not adversely affect the integrity of a European site. As such, a Stage 2 HRA was required to determine whether the implementation of the Catterick Groundwater Option 1. Scheme could impact the conservation objectives or the qualifying features of the SAC. The units of the SAC most likely to be affected by the scheme are located between 4.9km and 6.7km from the scheme location. Analysis of geological and borehole data indicates that even through the SACs lie within the recharge area, the sites are above the groundwater water table. As such, it is concluded that abstraction from the proposed scheme will not have a significant adverse effect on the qualifying features of the SAC. There are no areas of ancient woodland within 1km of the option. There is no construction associated with this option. No operational impacts on NERC species are envisaged due to the lack of hydraulic connectivity between the groundwater and surface water; however, there is some residual uncertainty in relation to the impacts of increased groundwater abstraction from the boreholes. The scheme is in proximity to a SSSI, which is a water-dependent site situated downstream on the River Swale flood plain. The site is predominantly supported by surface water flows and river sands and gravels – it is not in direct hydraulic connectivity. Based on available data, it is concluded that the drought option will have negligible impacts on the baseflow contributions to the River Swale, which supports the SSSI.	Negligible adverse	None
Biodiversity, flora and fauna	1.2 To 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)	Low (adverse)	No construction works are planned as part of this option (assuming no upgrade of the WTW would be required), and therefore, no requirement for compensatory planting and habitat enhancement. At this drought planning stage, the scale and location of BNG measures 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. The HRA concluded that the abstraction would not have likely significant effects on the nearby SAC or SSSI. The abstraction uses an existing but currently unused license. The scheme is expected to have negligible effects on the local hydrological cycle as there is no net change in groundwater abstraction or licensed hydrological balance, if the abstraction stays within licensed volumes. No significant water-dependent features or associated aquatic or terrestrial species, including migratory fish, are likely to be affected. The proposed scheme supports long-term groundwater resource management by enhancing the reliability of abstraction during periods of variable demand and contributing to the resilience of local water supply infrastructure. The use of a groundwater source with no surface water connections helps protect surface habitats and aquatic biodiversity from hydrological stress.	Negligible adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	No construction is planned as part of this option, assuming no upgrade of the WTW is required. This assessment focuses on operational effects associated with increased abstraction. There is negligible risk of introducing or spreading invasive non-native species (INNS) during operation of the scheme through vehicle and equipment movement, ground disturbance, and water transfers, provided that appropriate biosecurity measures are implemented and maintained	Negligible adverse	None
Population and human health	2.1 To protect and improve health and well-being and reduce inequalities	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	There is no construction associated with this option, assuming no upgrade of the WTW is required. The drought option would deliver an additional 2 Ml/d, helping to maintain essential public water supplies during drought conditions and therefore help maintain public health. The scheme will increase the reliability and resilience of the overall supply system.	None	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	N/A	N/A	N/A	N/A	N/A	N/A	There is no construction associated with this option, assuming no upgrade of the WTW is required. As such, no impacts on recreational amenities are expected during the implementation of the drought option.	None	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought option will contribute to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment. The option also frees up or reduces pressure on a WTW.	None	Minor beneficial
Material assets and resource use	3.1 To reduce, and make more efficient, the domestic, industrial and commercial consumption of resources, minimise the generation of waste, encourage its re-use and eliminate waste sent to landfill.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	There is no construction associated with this option, assuming no upgrade of the WTW is required.. Once operational, no material inputs will be required other than for regular maintenance. Some minor additional resources will be needed for treatment chemicals and power for pumping, and minor volumes of waste could be generated during operation. This option makes more use of existing assets, reducing the need for resource consumption or waste creation. System controls may support more efficient abstraction and improve energy efficiency and reduce associated greenhouse gas emissions.	Minor adverse	None
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The drought option would make greater use of the existing abstraction licence and improve the management of the water resources needed to maintain essential public water supplies during drought conditions. This option is unlikely to result in significant reductions in greenhouse gas emissions.	None	Minor beneficial

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Water	4.1 To maintain or improve the quality of rivers, lakes, groundwater, estuarine and coastal waterbodies.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There may be a negligible adverse impact on river water quality at low flows due to the potential impact of a minor reduction in baseflow from the Millstone Grit and Carboniferous Limestone aquifer as a result of the increased abstraction, however this needs to be assessed further.	Negligible adverse	None
Water	4.2 To avoid adverse impact on surface and groundwater levels and flows, including when this impacts on habitats and/or navigation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There may be a local, negligible impact on baseflow to the River Swale from the Millstone Grit and Carboniferous Limestone aquifer as a result of the increased abstraction. This would require further investigation. The aquifer is confined and therefore unlikely to have a interaction with surface water, however, a Hydrogeological Impact Assessment (HIA) would be required to confirm this and assess groundwater interactions with third party groundwater supplies.	Negligible adverse	None
Water	4.3 To ensure appropriate and sustainable management of water supplies whilst protecting ecosystem functions that rely on water resources including contributing to the achievement of WFD objectives	Small	Medium	Short-term	Temporary	Low (beneficial)	High (beneficial)	The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. Water availability is at least 50% in the zone of influence of the drought option.	None	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Low	Short-term	Temporary	Low (beneficial)	Low (beneficial)	By improving operational flexibility, the scheme may indirectly support more sustainable water resource management. If implemented as part of a broader drought response, it will be accompanied by public conservation campaigns to encourage efficient water use and increase awareness of water's value.	None	Negligible beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and to protect and enhance geodiversity.	N/A	N/A	N/A	N/A	N/A	N/A	There is no additional land take or excavations or construction associated with the scheme, assuming no upgrade of the WTW is required. The scheme relies on the abstraction of groundwater, but it is not anticipated that this will result in changes to geology. Abstracted groundwater is being introduced to the water supply via pipelines and an existing WTW, and as a result, geomorphology will not be impacted. -The scheme uses existing infrastructure sites/ corridors which supports efficient use of land- standard good practice will be implemented for soil management.	None	None
Air and Climate	6.1 To maintain and improve air quality.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	There is no construction associated with this option, assuming no upgrade of the WTW is required.. Minor adverse impacts on air quality would be associated with the small increase in energy consumption during operation.	Minor adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	A minor increase in greenhouse gas emissions would be associated with an increase in energy consumption.	Minor adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought options are a key component of Yorkshire Water's Drought Plan. The Plan aims to ensure resilience of water supplies to drought which may become more prevalent due to climate change. Extent of use of renewable energy of energy efficiencies is not known at this stage.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	N/A	N/A	N/A	N/A	N/A	N/A	No construction is planned as part of this option. This assessment focuses on operational effects associated with increased abstraction. There are no listed or designated assets within proximity to the scheme. There are no known water dependent heritage assets that might be affected by the potential small reduction in baseflow due to the abstraction.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, townscapes and the countryside.	N/A	N/A	N/A	N/A	N/A	N/A	No construction is planned as part of this option. This assessment focuses on operational effects associated with increased abstraction. There are no National Parks within 5km of the site. There are no further landscape designations in proximity to the scheme.	None	None

Drought Plan Option Name: River Aire Option 1

Drought Plan Option Description: Construction of a new intake on the south bank of the River Aire, with a new pipeline to transfer raw water to a WTW. The location chosen minimises the length of pipeline required and disruption by avoiding construction in urbanised areas. The proposed scheme would largely operate as an independent source of raw water for a WTW. The feasibility of a direct connection into the works itself is unknown and would require further investigation. It is currently assumed that the new pipeline would connect into one of the existing 36" Rising Main(s) of the Aqueduct externally to the site. This would require a temporary shut-off of one or both of the mains pipes to enable the connection.

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 To conserve 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.	Large	Medium	Medium-term	Temporary-Permanent	Medium (adverse)	High (adverse)	The proposed pipeline passes within 4.5km of a SAC/SPA/SSSI. Potential impacts could arise during construction of the intake, pumping station and pipeline through ground clearance, noise, dust and general construction disturbance. However, the HRA has not identified any impact pathways to the SAC or SPA, as these sites are located upstream of the scheme. One SSSI is downstream of the proposed abstraction point and may be influenced by a reduction in flows. Another SSSI is located within 1km of the proposed abstraction point. Impact risk has been assessed as minor, assuming best practice methods are deployed. Uncertainty surrounds the potential impact of construction on various terrestrial NERC species near the new river abstraction (birds, great crested newts, bats, otter, water vole, common reptiles, badgers). There is the potential risk of major impact for aquatic NERC species during operation (brown trout, grayling, bullhead, European eel, white-clawed crayfish, barbel) in the reach immediately downstream of the intake, but reducing after 1km to minor impact risk with the increased flow contributions from a sewage treatment works. Negligible impact 30km downstream. Operation of the scheme has been assessed as a minor impact risk for one SSSI, and uncertain risk for two other SSSI's. There are several areas of ancient woodland near the proposed pipeline route and therefore impacts directly or indirectly (through root disturbance) can lead to major adverse impacts on ancient woodland.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Medium-term	Temporary-Permanent	Medium (adverse) Medium (beneficial)	Low (adverse) Low (beneficial)	The scheme may have effects on the hydrological cycle at a regional scale, by influencing surface water flows. While there are no nationally designated areas recognised for their natural capital value within the site, the construction of the pipeline, intake and pumping station could impact natural capital assets at a local scale. Potential adverse effects include the loss or degradation of local deciduous woodland and other habitats, as well as impacts on the natural capital of the River Aire. In this location, the river retains a relatively natural channel within a predominantly urban environment, providing important ecological, recreational, and aesthetic value to the surrounding community. Using information from the WRMP24 assessment, an estimated 38 biodiversity units would be lost during construction of the intake, pumping station and pipeline; these impacts could be mitigated or offset through compensatory planting and habitat enhancement. At this drought planning stage, the scale and location of BNG measures 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. The option does not fall within a Nature Improvement Area.	Minor adverse	Minor beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Large	Medium	Medium-term	Permanent	Low (adverse)	Medium (adverse)	There is potential for the spread of existing INNS during the construction phase, although the extent of this risk remains uncertain. If introduced, INNS could have significant adverse effects due to the scheme's hydrological connection to the River Aire. However, this risk can be minimised through good construction practices and appropriate mitigation measures (such as washing construction vehicles before they leave the site). During operation, there remains a low risk of INNS transfer associated with the abstraction and transfer of water. However, this risk would be minimised through appropriate operational biosecurity protocols and asset management procedures, and significant effects are not anticipated.	Minor adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small (adverse) Large (beneficial)	Medium (adverse) High (beneficial)	Long-term	Permanent	Low (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The construction phase of the option may have a minor, short-term adverse impact on residents located in population centres near the pipeline route due to effects from noise, dust and vibration. There are no AQMAs within proximity of the scheme; however, there are two Noise Action Planning Important Areas within 500m of the proposed pipeline. Noise, dust and vibration impacts will be mitigated by best practice construction methods. The drought option would help maintain essential public water supplies during drought conditions and therefore support public health and wellbeing. The scheme has the potential to provide between 5 and 50 Ml/d of additional water supply, subject to abstraction licence conditions and available river flows.	Minor adverse	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Medium	Long-term	Permanent	Medium (adverse)	Low (adverse)	There may be temporary disturbance and disruption to local services during the construction phase. During construction, access to areas used for recreation may be reduced; however, if best practice is followed, suitable diversions will be put in place. There are no national trails nearby. A National Cycle Route runs nearby, as do a number of strategic walking routes and public paths; however, none of these should require diversions. The option is close to the Leeds and Liverpool canal, and construction and operation of the intake and pumping station may impact navigation and recreational activities along the canal. A Golf Course is located near the proposed pipeline route. Long-term effects on visual amenity and the recreational setting may arise from the presence of permanent above-ground infrastructure, including the intake and pumping station. However, these effects are expected to be localised. During operation, the scheme will not affect access to open spaces but may have a minor impact on informal recreation activities such as fishing; however, water levels will be naturally low during a drought.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Large	Medium	Long-term	Permanent	Medium (adverse) Medium (beneficial)	Low (adverse) Medium (beneficial)	There may be temporary disturbance and disruption to local services during the construction phase. Implementation of the drought option will contribute to the maintenance of supply reliability in drought conditions (5Ml/d), ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment, if best practice is followed. Construction works may provide local employment opportunities.	Minor adverse	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Medium	Long-term	Permanent	Medium (adverse)	Medium (adverse)	Resources for the construction of additional scheme components will be sourced locally where practicable. The new infrastructure required for the scheme, including the intake, pumping station, treatment infrastructure and pipeline, will require new materials and generate waste at a scale consistent with the size of the option. Once operational, additional energy and resources will be required to abstract, pump and treat water from the River Aire. This includes the use of electricity for pumping and treatment processes, together with treatment chemicals associated with ozone dosing, granular activated carbon (GAC) treatment and associated washwater systems.	Moderate adverse	None
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Large	Medium	Long-term	Permanent	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	The option does not directly promote water efficiency. This option requires a drought permit or drought order as well as a new abstraction to abstract from the River Aire and will be subject to full environmental assessment, ensuring sustainable management of abstraction. The scheme will supply homes and industry in the area when triggered by drought events. This is a new abstraction which would lower the risk of service interruptions and maintain a stable supply.	Negligible adverse	Negligible beneficial

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Water	4.1 To maintain or improve the quality of surface and groundwater resources	Large	Medium	Long-term	Permanent	Medium (adverse)	Medium (adverse)	Construction will be managed using best practice construction methods, ensuring minimal risk to the water body. Any potential impacts during construction are assessed as Medium. During operation, abstraction on the River Aire will reduce dilution of effluent due to a reduction in the low flow regime. Two further consented significant water quality pressures are located within the affected downstream reach, with a medium risk of WFD deterioration associated with total ammonia and dissolved oxygen. In addition, the proposed abstraction is located downstream of wastewater treatment works and in proximity to combined sewer overflows, which may further affect water quality during drought conditions. Additional abstraction under drought conditions is therefore likely to have a moderate adverse effect on water quality.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Large	Medium	Long-term	Permanent	Medium (adverse)	Medium (adverse)	The drought option is anticipated to result in a major reduction in low flows during operation (based on previous assessment). This will likely have impacts on wetted width and habitat availability. Major hydrological impacts are therefore anticipated in these impacted reaches. However, downstream of this, the impact is minor to moderate. The drought option will not impact on the moderate to high flow regime in the river. A moderate adverse effect is assessed overall.	Moderate adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Large	Low	Long-term	Permanent	Medium (adverse) Medium (beneficial)	Medium (adverse) Low (beneficial)	The option will be managed within licensed volumes and operational controls will be in place to avoid adverse effects on sensitive water-dependent ecosystems. This approach supports the sustainable management of water resources and contributes to the protection of ecological status under the Water Framework Directive. The intensification of abstraction could influence flow contributions and associated ecological receptors (as assessed above). Several Flood Zone 2 areas are located within 1km of the proposed pipeline. As such, temporary mitigation measures may be required to alleviate flood risk.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Large	Low	Long-term	Permanent	Low (beneficial)	Low (beneficial)	This option primarily regards an increased abstraction for use. By improving operational flexibility, the scheme may indirectly support more sustainable water resource management. While the scheme does not improve efficiency directly, it is part of a broader drought response accompanied by public campaigns promoting efficient water use.	None	Negligible beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Medium-term	Temporary	Low (adverse)	Low (adverse)	Three-quarters of the pipeline route lies within Grade 3 agricultural land. Excavation and construction activities may affect soils through disturbance, compaction and erosion, and there is potential for contamination incidents associated with construction activities. The intake and pumping station infrastructure would occupy a relatively small footprint, although construction of the pipeline would result in temporary disturbance to agricultural land and soil resources. Given that the proposed infrastructure would be permanent, some permanent land take would occur. Pipeline corridors would be reinstated and, where practicable, returned to their previous use following construction. The scheme is inland and may make use of previously developed land in some locations, supporting the efficient use of land. Standard good practice measures would be implemented in relation to soil handling, storage and reinstatement.	Negligible adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Medium	High	Long-term	Permanent	Low (adverse)	Medium (adverse)	Construction work and vehicle movements associated with the construction phase will give rise to air emissions and dust over the short term. The proposed pipeline route is located in a built-up area but not close to any AQMAs. The works area could impact nearby SSSIs and aquatic species through dust emissions. Air emissions impacts will be minimised through best construction practices. Operational effects on air quality are expected to be negligible. Emissions would be limited to indirect emissions associated with the operation of the pumping station and water treatment processes. If powered by grid electricity, particularly from an increasingly decarbonised electricity network, operational impacts on local air quality would be minimal.	Minor adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Medium	Medium	Long-term	Permanent	Low (adverse)	Medium (adverse)	Construction work, use of materials and vehicle movements associated with the construction phase will give rise to GHG emissions; these will be minimised through best construction practices. Operational GHG emissions are associated with the operation of the pumping station. If powered by renewable sources, operational emissions would be reduced to negligible.	Minor adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	Medium	Long-term	Permanent	Low (beneficial)	Medium (beneficial)	The drought action allows YW to diversify its water sources under drought conditions and increases the capacity of the existing network, enhancing the reliability and resilience by allowing greater flexibility in targeted delivery to areas in a water deficit, as well as maximise the use of the current abstraction licenses.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Several sites of archaeological and cultural heritage value are located in proximity to affected river reaches, including a World Heritage Site and listed building, but there are no water-dependent sites. The proposed indicative transfer route is within c.150m of two adjacent listed buildings and it may be necessary to refine the transfer route so as not to impact on the setting these historical assets. One scheduled monument falls within 1km of the proposed pipeline route. The pumping station and pipeline construction impacts would be contained within the works areas. Construction work has the potential to disturb unknown buried assets; however, this would be further evaluated by desk studies and other investigations prior to construction. A watching brief, surveys and investigations would be implemented if required during construction to reduce the risk of adverse impact on any unknown heritage assets. No operational impacts due to lower river flows are anticipated.	Minor adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Long-term	Permanent	Low (adverse)	Medium (adverse)	There are some limited construction impacts on visual amenity anticipated in built-up, residential and recreational areas during the installation of the river intake, pumping station and overland pipeline, but this would be short-term. Construction of new above-ground structures will be located within a Greenbelt and will have medium-scale impacts on the openness of this land. There are no National Landscapes or National Parks nearby. Long-term visual and landscape changes would be associated with the proposed permanent above-ground infrastructure, including the intake, pumping station and associated treatment infrastructure.	Minor adverse	None

Drought Plan Option Name: River Aire Option 2

Drought Plan Option Description: Construction of a new intake and pumping station on the north bank of the River Aire.
It is proposed that the new abstraction would be able to direct flows either southwards towards a WTW (which is the current flow direction) or northwards. This will require an additional short section of pipeline to connect from the 48-inch Aqueduct pipe.

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Biodiversity, flora and fauna	1.1 To conserve 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.	Large	Medium	Medium-term	Temporary-Permanent	Medium (adverse)	High (adverse)	There are three SSSIs and an SAC/SPA within 5km of the scheme. Potential impacts could arise during the construction phase of the intake and pump station and the overland pipelines as a result of noise and dust generation. However, the SAC and SPA are located upstream of the scheme and no impact pathways have been identified through the HRA process. Potential impacts on aquatic habitats and species may arise from in-river construction works and, during operation, from drought-period abstraction from the River Aire. The risk of effects is expected to be reduced through environmental permitting, abstraction licence controls, fish and eel screening, and the implementation of best-practice design and construction measures. The pipeline passes through ancient woodland. Ancient woodland is an irreplaceable designation, and therefore, impacts directly or indirectly (through root disturbance) can lead to major adverse impacts on ancient woodland. The pipeline also passes through deciduous woodland and an area with additional priority habitats. The impacts to these receptors can be mitigated through pipeline diversion and best practice construction techniques. Uncertainty surrounds the potential impact of construction on various terrestrial NERC species near the new river abstraction (birds, great crested newts, bats, otter, water vole, common reptiles, badgers). Further ecological surveys and detailed design would be required to confirm the presence of sensitive receptors and identify any necessary mitigation measures.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Medium-term	Temporary-Permanent	Medium (adverse) Medium (beneficial)	Low (adverse) Low (beneficial)	The scheme may have negligible effects on the hydrological cycle at a local scale, by influencing surface water flows. However, the abstraction will be within licence limits, and no major water-dependent features are likely to be affected by the abstraction. Construction could negatively affect some local areas of ancient woodland, other deciduous woodland and additional priority habitats and also the natural capital of the River Aire, which, in this location, forms a relatively natural channel within a predominantly urban area, adding substantial value to the locality. Adverse impacts can be mitigated through pipeline diversion and best practice construction techniques; therefore, minor adverse impacts are anticipated. There is potential for beneficial opportunities for compensatory planting and habitat enhancement, and hence, minor beneficial impacts are anticipated. At this drought planning stage, the scale and location of BNG measures 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. The option does not fall within a Nature Improvement Area.	Minor adverse	Minor beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Large	Medium	Medium-term	Permanent	Low (adverse)	Medium (adverse)	There is potential for the spread of INNS during the construction phase, although the extent of this risk remains uncertain. If introduced, INNS could have significant adverse effects due to the scheme's hydrological connection to the River Aire. However, this risk can be minimised through good construction practices, provided that appropriate mitigation measures (such as washing construction vehicles before they leave the site) are implemented. It is important to note that invasive species are already present along the construction route. During operation, there remains a low risk of INNS transfer associated with the abstraction and transfer of water. However, this risk would be minimised through appropriate operational biosecurity protocols and asset management procedures. As a result, significant effects are not anticipated.	Minor adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small (adverse) Large (beneficial)	Medium (adverse) High (beneficial)	Long-term	Permanent	Low (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The construction phase of the option may have a minor, short-term adverse impact on residents located in population centres near the pipeline route due to effects from noise, dust and vibration, for instance, the connection to the aqueduct, which will be in a residential area. There are no AQMAs in close proximity to the scheme. However, four Noise Action Planning Important Areas are located within 500 metres of the proposed pipeline, and the pipeline passes through one of them. Noise, dust and vibration impacts will be mitigated by best practice construction methods. The option would help maintain essential public water supplies during drought conditions, thereby supporting public health and wellbeing. The scheme has the potential to provide between 5 and 50 Ml/d of additional water supply, subject to abstraction licence conditions and available river flows.	Minor adverse	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Medium	Long-term	Permanent	Medium (adverse)	Low (adverse)	There may be temporary disturbance and disruption to local services during the construction phase. During construction, access to areas used for recreation may be reduced; however, if best practice is followed, suitable diversions will be put in place. A National Cycle Route runs nearby; however, this route should not require diverting. Several public footpaths and bridleways are located within close proximity to the proposed pipeline route, The option is close to the Leeds and Liverpool canal, and construction and operation of the intake and pumping station may impact navigation and recreational activities along the canal. A golf course is located near the proposed pipeline route. Construction and operation of the scheme is not expected to directly affect access to water-related recreation. During operation, the scheme will not affect access to open spaces but may have a minor impact on informal recreation activities such as fishing, however water levels will be naturally low during a drought.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Large	Medium	Long-term	Permanent	Medium (adverse) Medium (beneficial)	Low (adverse) Medium (beneficial)	There may be temporary disturbance and disruption to local services during the construction phase. Implementation of the drought option will contribute to the maintenance of water supply reliability during drought conditions, helping to support a resilient water supply for customers, communities and economic activity. The scheme has the potential to provide between 5 and 50 Ml/d of additional supply, subject to abstraction licence conditions and available river flows. Provided best practice design and construction methods are implemented, no permanent adverse effects on communities or local economic activity are anticipated.	Minor adverse	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Medium	Long-term	Permanent	Medium (adverse)	Medium (adverse)	Resources for construction of additional scheme components will be sourced locally where practicable. Construction will require the use of raw materials and resources commensurate with the scale of the scheme, including the new intake, pumping station, treatment infrastructure and associated pipeline connections. However, the option benefits from utilising existing water supply infrastructure where possible. Once operational, the scheme will require additional energy for pumping and additional resources, including treatment chemicals, associated with the abstraction and treatment of water from the River Aire. Pretreatment processes including ozone dosing, granular activated carbon (GAC) treatment and associated washwater systems will contribute to operational resource consumption.	Moderate adverse	None
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Large	Medium	Long-term	Permanent	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	The option does not directly promote water efficiency or demand management. The scheme would require a drought permit or drought order and a new abstraction licence to abstract water from the River Aire. Abstraction would be subject to environmental assessment, permitting requirements and licence controls, helping to ensure the sustainable management of water resources and protection of the wider water environment. The scheme would provide an additional source of water during drought conditions, helping to maintain supplies to homes and industry, reduce the risk of service interruptions and improve the resilience of the water supply system. The anticipated supply benefit is between 5 and 50 Ml/d, subject to abstraction licence conditions and available river flows.	Negligible adverse	Negligible beneficial

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Water	4.1 To maintain or improve the quality of surface and groundwater resources	Large	Medium	Long-term	Permanent	Medium (adverse)	Medium (adverse)	Construction activities have the potential to adversely affect surface water quality through sediment runoff, accidental spills and pollution incidents. However, effects would be temporary and localised, and the implementation of best-practice construction methods and pollution prevention measures would minimise risks to the River Aire. Temporary construction effects are not anticipated to result in deterioration in water body status. During operation, abstraction on the River Aire during drought conditions could reduce the dilution of upstream wastewater treatment works discharges and other consented effluent inputs, particularly during periods of low flow. There are water quality risks associated with reduced dilution and the proximity of wastewater treatment works and combined sewer overflows upstream of the proposed abstraction location. As a result, there is potential for adverse effects on water quality during operation, although these would be subject to abstraction licence controls, environmental permitting requirements and operational management measures. A moderate adverse effect is therefore anticipated.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Large	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The drought option will lead to a major reduction in low flows (up to 52% in the summer and up to 39% in the winter) during operation. This will likely have impacts on wetted width and habitat availability. Major hydrological impacts are therefore anticipated in these impacted reaches. However, downstream of this, the impact is minor to moderate. The drought option will not impact on the moderate to high flow regime in the river.	Moderate adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Large	Low	Long-term	Permanent	Medium (adverse) Medium (beneficial)	Medium (adverse) Low (beneficial)	The drought option will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. The option will be managed within licensed volumes and operational controls will be in place to avoid adverse effects on sensitive water-dependent ecosystems. This approach supports the sustainable management of water resources and contributes to the protection of ecological status under the Water Framework Directive. The intensification of abstraction could influence flow contributions and associated ecological receptors (as assessed above). Water availability is at least 70% in the zone of influence of the drought option. Part of the proposed pipeline route falls within Flood Zone 2 and 3. As such, temporary mitigation measures may be required to alleviate flood risk.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Large	Low	Long-term	Permanent	Low (beneficial)	Low (beneficial)	This option primarily regards an increased abstraction for use. By improving operational flexibility, the scheme may indirectly support more sustainable water resource management. While the scheme does not improve efficiency directly, it is part of a broader drought response accompanied by public campaigns promoting efficient water use.	None	Negligible beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Medium-term	Temporary	Low (adverse)	Low (adverse)	Approximately a quarter of the pipeline route lies within Grade 3 agricultural land. Excavation and construction activities may affect soils through disturbance, compaction, erosion and potential contamination incidents. However, construction of the intake, pumping station and pipeline would be located largely within built-up areas or existing infrastructure corridors, reducing impacts on soil resources and land use. Construction is therefore anticipated to have a negligible effect on the overall quality and quantity of soils within the area. The scheme would require some permanent land take associated with the intake and pumping station infrastructure. Temporary working areas and pipeline corridors would be reinstated and, where practicable, returned to their previous use following construction. The option may also make use of previously developed land, supporting the efficient use of land resources. Standard good practice will be implemented in relation to soil management.	Negligible adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Medium	High	Long-term	Permanent	Low (adverse)	Medium (adverse)	Construction work and vehicle movements associated with the construction phase will give rise to air emissions and dust over the short term. The proposed pipeline route is located in a built-up area but not close to any AQMAs. The works area could impact nearby SSSIs and aquatic species through dust emissions. Air emissions impacts will be minimised through best construction practices. Operational emissions are associated with the operation of the pumping station. If powered by the grid (especially renewable sources), operational emissions would be minimal to negligible.	Minor adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Medium	Medium	Long-term	Permanent	Low (adverse)	Medium (adverse)	Construction work, use of materials and vehicle movements associated with the construction phase will give rise to GHG emissions; these will be minimised through best construction practices. Operational GHG emissions are associated with the operation of the pumping station. If powered by renewable sources, operational emissions would be reduced to negligible.	Minor adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	Medium	Long-term	Permanent	Low (beneficial)	Medium (beneficial)	The option aims to enhance the resilience of water supplies to drought, which likely to become more frequent due to climate change, by increasing abstraction capacity from the River Aire and treatment at the WTW. The availability of this additional water supports improved supply resilience across the wider area.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Medium	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Several sites of archaeological and cultural heritage value are in proximity to impacted river reaches, including a World Heritage Site, but there are no water-dependent sites. There are two Grade II listed buildings within 100m of the proposed pipeline. The pumping station and pipeline construction impacts would be contained to a small area. Best practice design and construction methods should be used to mitigate impacts. Construction work has the potential to disturb unknown buried assets, however this would be further evaluated by desk studies and other investigations prior to construction. A watching brief, surveys and investigation would be implemented if required during construction to reduce the risk of adverse impact to any unknown heritage assets. No operational impacts due to lower river flows are anticipated.	Minor adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Long-term	Permanent	Low (adverse)	Medium (adverse)	There are likely to be some temporary impacts on landscape character and visual amenity during construction of the intake, pumping station and overland pipeline, particularly within built-up, residential and recreational areas. Construction activities and temporary compounds may result in short-term visual effects. Construction, and some new above-ground structures, will be within a Greenbelt and will have small-scale impacts on the openness of this land. During operation, permanent above-ground infrastructure associated with the intake and pumping station would remain visible; however, effects are expected to be localised and limited in extent. There are no National Landscapes or National Parks in close proximity to the scheme	Minor adverse	None

Drought Plan Option Name: Doncaster Groundwater Option 1

Drought Plan Option Description: This option involves recommissioning two boreholes at Doncaster Groundwater Option 1 site. The option utilises an unused existing licence. The option would provide resilience, rather than new water reducing grid input, which minimise wider grid input to the Doncaster supply area. The likely benefit during a drought is 4.55 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 To conserve 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	Low	Short-term	Permanent	Medium (adverse)	Medium (adverse)	The preferred scheme involves works at the Doncaster Groundwater Option 1 site, including construction of a new GRP contact tank, two kiosks for chemical storage and dosing, and a slab for a new Motor Control Centre (MCC) kiosk. Minor impact pathways are associated with construction activities, including the introduction or spread of INNS, dust, noise and vibration, and localised disturbance to soils and groundwater. Since the water tower on site has been decommissioned, the option may require infrastructure to facilitate treatment at an alternative location. This could involve treatment at the nearby treatment works, transfer to a WTW, or the use of a mobile package treatment plant. Should transfer infrastructure be required, including a new pipeline, route selection and design would need to consider potential effects on environmental designations and sensitive habitats, including SSSI, SAC, SPA and Ramsar sites, as well as ancient woodland and priority habitats. The Doncaster Groundwater Option 1 boreholes are located approximately 7.5 km south-west of an SAC, a restored raised bog habitat that is highly dependent on maintaining appropriate water levels. Whilst the option would utilise an existing licensed abstraction and is intended to improve operational resilience rather than increase overall abstraction, recommissioning the source could alter abstraction patterns within the Wellfield. The qualifying raised bog habitat is particularly sensitive to changes in hydrological conditions, and reductions in water availability could adversely affect ongoing restoration efforts. Although significant adverse effects are not anticipated and the use of an existing (currently unused) licence is expected to limit new hydrological pressures, the potential for effects on groundwater levels and wider hydrological processes influencing the SAC cannot be fully excluded. In the absence of detailed hydrogeological information, further assessment may be required to confirm the degree of hydrological connectivity between the boreholes and SAC and to demonstrate that there would be no adverse effect on the integrity of the site.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Permanent	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	Based on the potential for construction and operational impacts on water-dependent species and habitats associated with designated sites, moderate adverse effects on the natural capital and ecosystem services could occur during project construction. Further HRA assessment may be required. There may also be impacts on high value cultural services such as recreation and tourism, and aesthetic value. Depending on whether biodiversity units are lost during the construction, minor beneficial opportunities for compensatory planting and habitat enhancement may be available. 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 BNG benefits. The use of an existing (but currently unused) licence suggests minimal new hydrological pressures. The proposed scheme would enhance the reliability of abstraction during periods of variable demand and contribute to the resilience of local water supply infrastructure.	Moderate adverse	Minor beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	There is a small risk of spreading terrestrial INNS through construction. Mitigation measures will be in place to minimise risk, including the identification, removal, or treatment of INNS prior to construction waste disposal. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented. Abstracting and discharging water within the same catchment (especially when functionally linked to designated sites) may pose INNS risks if proper controls aren't in place. There is a low risk of introducing or spreading invasive non-native species (INNS) during the operation of the scheme, given that abstracted water will be directed through the WTW. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	Minor adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	Low	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	Construction may result in dust, noise and vibration impacts on AQMAs or Noise Action Planning Important Areas and local residents/ users. Best construction practices will be used to minimise disruption. The drought option will help to maintain essential public water supplies during drought conditions and therefore help maintain public health/wellbeing and increase the reliability and resilience of the overall supply system by supplying 4.55 Ml/d.	Moderate adverse	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The preferred scheme would involve works mostly confined to the Doncaster Groundwater Option 1 site with potential for a pipeline for transferring water to a WTW. During construction, there is potential for reduced access to areas used for recreation depending on the location of the construction works; however, if best practice is followed, suitable diversions will be put in place. Construction and operation of the scheme will not affect access to water-related recreation. During operation, the scheme will not affect access to recreation activities.	Moderate adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Medium	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	There may be temporary disruptions of services or access/disturbance during the construction phase. The scheme may provide short-term local employment opportunities during the construction phase and stimulate local procurement. Implementation of the drought option will contribute to the maintenance of supply reliability in drought conditions (4.55 Ml/d), ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment, if best practice is followed.	Moderate adverse	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The scheme would require the construction of new treatment and pumping infrastructure, including a GRP contact tank, borehole pumps, treatment units, kiosks and associated control equipment. Construction would require the use of raw materials and generate waste, resulting in minor adverse effects on resource use. During operation, additional energy and chemical inputs would be required to support abstraction, pumping and water treatment processes. However, the scheme would make use of an existing licensed borehole source and incorporate telemetry and system controls that may improve operational efficiency and optimise abstraction management. Overall, whilst the scheme would increase resource and energy consumption, opportunities for efficient operation may partially offset these effects. Due to some uncertainties surrounding final design and the potential need for a pipeline, a precautionary moderate adverse effect is anticipated towards this objective.	Moderate adverse	None
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Medium	Low	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	Construction waste would be generated and managed in accordance with standard construction waste protocols. This option makes use of an existing asset to increase abstraction in compliance under an existing license and maintain essential public water supplies during drought conditions.	Moderate 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)**
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	It is assumed that abstraction would be from a WFD groundwater body classified as having poor overall status. The RNAG for the groundwater body in 2019 (cycle 3) were associated with poor nutrient management, groundwater abstraction, poor livestock management and groundwater resource impacts. The operation of the drought option could therefore contribute to existing groundwater pressures. A WINEP AMP8 No Deterioration investigation is currently underway within the wellfield, and the current Environment Agency position is that abstraction licences will be capped from 2030. Under this scenario, abstraction associated with the drought option would not be expected to exceed the no deterioration baseline and additional impacts would therefore be limited. However, future licensing arrangements remain under review and some uncertainty exists regarding the long-term implications for groundwater quality and status. Taking account of the existing poor status of the groundwater body, the potential to contribute to existing pressures, and the residual uncertainty regarding future groundwater management, a moderate adverse effect is assessed. The location and number of watercourse crossings are not currently known. Any effects associated with crossings and construction activities are expected to be mitigated through embedded design measures, pollution prevention controls and standard good practice.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	It is assumed abstraction would be from a WFD groundwater body classified as having poor overall status in 2019 due to existing abstraction pressures. A WINEP AMP8 No Deterioration scheme is currently being implemented within the wellfield and is expected to result in abstraction licences being capped by 2030 to protect groundwater resources and associated river flows. Whilst abstraction associated with the drought option would be expected to operate within these controls and would not be anticipated to exceed the no deterioration baseline, the option would nevertheless involve additional abstraction from a groundwater body already subject to resource pressures. Future licensing arrangements remain subject to regulatory review, including potential changes to abstraction controls and drought management mechanisms, resulting in some uncertainty regarding long-term effects on groundwater levels and groundwater contributions to river flows. Taking account of the poor status of the groundwater body, the existing abstraction pressures, and the residual uncertainty surrounding future abstraction management, the option could contribute to adverse effects on groundwater resources and associated flow regimes. Although operation would be temporary and infrequent during drought conditions, the effect is assessed as moderate adverse.	Moderate adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Low	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	This option would increase the amount of water available for supply during drought conditions through the use of an existing licensed groundwater source. However, the source groundwater body is already subject to abstraction pressures and classified as being in poor overall status. Whilst abstraction would be expected to operate within the constraints of the regulatory framework and any applicable environmental controls, operation of the option could contribute to existing pressures on groundwater resources and water-dependent ecosystems. Further uncertainty remains regarding future abstraction controls and licensing arrangements. Consequently, although the option would support drought resilience and the maintenance of water supplies, it could result in adverse effects on the sustainable management of water resources and achievement of WFD objectives. Therefore, a moderate adverse effect is assessed.	Moderate adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Low	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	By improving operational flexibility and maximising the use of existing licensed abstraction, the scheme may indirectly support more sustainable water resource management. If implemented as part of a broader drought response, it will be accompanied by public conservation campaigns to encourage efficient water use and increase awareness of water's value.	None	Minor beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The preferred scheme would involve works mostly confined to the Doncaster Groundwater Option 1 site with potential for a pipeline for transferring water to a WTW. The potential effects on land-use associated with the construction work are deemed medium-scale, temporary and reversible. The scheme will make some use of existing infrastructure sites/ corridors, which support efficient use of land; standard good practice will be implemented for soil management. The scheme relies on the abstraction of groundwater, but it is not anticipated that this will result in changes to geology. Abstracted groundwater is being introduced to the water supply via pipelines and an existing WTW, and as a result, geomorphology will not be impacted. Pipeline works areas would be reinstated.	Moderate adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The preferred scheme would involve works mostly confined to the Doncaster Groundwater Option 1 site with potential for a pipeline for transferring water to a WTW. Proximity to AQMAs or residential areas are uncertain, so a precautionary assessment has been applied. Construction work and vehicle movements associated with the construction phase will give rise to air emissions and dust over the short term; these will be minimised through best construction practices. However, there will be a small-scale carbon impact from the construction of new assets. Increased pumping and treatment of water is expected; therefore, some additional energy use is envisaged during operation. Further consideration should be made if construction works lie within or in proximity to an AQMA.	Moderate adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	Construction work and vehicle movements associated with the construction phase will give rise to GHG emissions, which will be minimised through best construction practices. During operation, there will be increased pumping and treatment of water, so some additional greenhouse gas emissions are envisaged during operation.	Minor adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	This option improves resilience by making use of an unused licensed abstraction that would otherwise not be realised. Some uncertainty remains as to the groundwater levels during a drought, or in response to a changing climate, and so, without further investigation, reliance on this option could reduce the resilience of the network overall. The scale of this scheme would make a minor beneficial contribution to securing a resilient water supply in the longer term to help meet the challenges of potential climate change impact on water supply reliability. The drought option allows YW to diversify its water sources under drought conditions.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The preferred scheme would involve works mostly confined to the Doncaster Groundwater Option 1 site with potential for a pipeline for transferring water to a WTW. Proximity to heritage sites are uncertain, so a precautionary assessment has been applied. Construction activities may affect the setting of listed buildings and scheduled monuments where these activities occur in close proximity. However, there are unlikely to be any water-dependent heritage sites in the area. The impacts from pipeline construction are expected to be confined to a small area. Best practice design and construction methods will be employed to mitigate potential impacts. While there is potential for construction to disturb previously unknown buried heritage assets, this risk will be assessed through desk-based studies and further investigations prior to construction. If required, a watching brief, surveys, and investigations will be implemented during construction to minimise the risk of adverse impacts on any unknown heritage features. No operational impacts are anticipated.	Moderate adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The preferred scheme would involve works mostly confined to the Doncaster Groundwater Option 1 site with potential for a pipeline for transferring water to a WTW. Proximity to National Landscapes, National Parks or the Greenbelt are uncertain, so a precautionary assessment has been applied. Construction impacts on visual amenity would be short-term. While the visual impact of pipelines is temporary, any new above ground infrastructure would have a longer-term visual impact.	Moderate adverse	None

Drought Plan Option Name: Doncaster Groundwater Option 2

Drought Plan Option Description: This option involves recommissioning two out of service boreholes at Doncaster Groundwater Option 2 site. The boreholes would require relining. The water could be treated with no issues at a WTW which has sufficient capacity. The likely benefit during a drought is 14.2 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 To conserve 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	Low	Short-term	Permanent	Medium (adverse)	Medium (adverse)	As the exact location and extent of required infrastructure are not yet known, a precautionary assessment has been applied. Minor impact pathways are associated with construction activities, including the introduction or spread of INNS, dust, noise and vibration, and localised disturbance to soils and groundwater. The option would involve relining one of the boreholes to address an identified integrity failure. The boreholes are not currently connected to the grid and the infrastructure required to establish this connection is not yet known. There is a SSSI within 2km of the boreholes. There are several areas of ancient woodland and priority habitats, particularly deciduous woodland in proximity to the boreholes. The process of relining the borehole is not expected to have adverse impacts on these designations. The option would utilise existing (but currently unused) licensed groundwater abstraction; however, the proposed abstraction volume of 14.2 Ml/d could alter groundwater levels and associated hydrological processes. The boreholes are located approximately 7.1 km from an SAC, a degraded raised bog habitat undergoing active hydrological restoration and highly dependent on the maintenance of appropriate water levels. Whilst the option would not result in direct impacts on the SAC, potential effects on groundwater levels and supporting hydrological processes cannot currently be ruled out. Given the scale of abstraction proposed and the sensitivity of the SAC to hydrological change, further hydrogeological assessment may be required to determine whether there is connectivity between the boreholes and the SAC and to confirm that adverse effects on the integrity of the SAC would not occur.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Permanent	Medium (adverse)	Medium (adverse)	Based on the potential for construction and operational impacts on water-dependent species and habitats associated with designated sites, moderate adverse effects on the natural capital and ecosystem services could occur during project construction. There may also be impacts on high value cultural services such as recreation and tourism, and aesthetic value. Depending on whether biodiversity units would be lost during the construction of infrastructure connecting to the grid, minor beneficial opportunities for compensatory planting and habitat enhancement may be obtained. 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 BNG benefits. The boreholes fall within a Nature Improvement Area. The proposed scheme would enhance the reliability of abstraction during periods of variable demand and contribute to the resilience of local water supply infrastructure. The use of an existing (but currently unused) licence suggests minimal new hydrological pressures.	Moderate adverse	Minor beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Medium	Low	Short-term	Temporary	Medium (adverse)	Low (adverse)	There is a small risk of spreading terrestrial INNS through construction. Mitigation measures will be in place to minimise risk, including the identification, removal, or treatment of INNS prior to construction waste disposal. Abstracting and discharging water within the same catchment (especially when functionally linked to designated sites) may pose INNS risks if proper controls aren't in place. There is a low risk of introducing or spreading invasive non-native species (INNS) during the operation of the scheme, given that abstracted water will be directed through the WTW.. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	Minor adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	Medium	Short-term	Temporary	Medium (adverse) High (beneficial)	Medium (adverse) Medium (beneficial)	The routing and works area for the proposed connecting infrastructure is not known, so a precautionary assessment has been applied. The location of the boreholes is built up and close to major transport infrastructure. Dust, noise and vibration impacts may be likely. The boreholes are within 1km of an AQMA associated with a Motorway.. Best construction practices will be used to minimise disruption. The drought option will help to maintain essential public water supplies during drought conditions and therefore help maintain public health/wellbeing by supplying 14.2 Ml/d.	Moderate adverse	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The routing and extent of works associated with the required infrastructure are not known, so a precautionary assessment has been applied. The location of the boreholes is built up and close to major transport infrastructure. The boreholes are located close to a Golf Course and within green/ open space along the River Torne close to fishing lakes. There may be temporary disturbance and disruption to local services during the construction phase. During construction, access to areas used for recreation may be reduced; however, if best practice is followed, suitable diversions will be put in place. During the operational phase, it is anticipated that there will be no impacts on recreational activities.	Moderate adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Medium	Short-term	Temporary	Medium (adverse) High (beneficial)	Medium (adverse) Medium (beneficial)	The location of the boreholes is built up and close to major transport infrastructure. There may be temporary disruptions of services or access/disturbance during the construction phase. The scheme may provide short-term local employment opportunities during the construction phase and stimulate local procurement. Implementation of the drought option will contribute to the maintenance of supply reliability in drought conditions (14.2 Ml/d), ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment.	Moderate adverse	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The option will require the construction of infrastructure and the use of additional materials, although the extent of the associated works is not known. The scheme makes use of an existing abstraction license and would tie into existing infrastructure. Waste would be generated during the construction phase. Once operational, there will be a minor increase in energy consumption. System controls may support more efficient abstraction, improve energy efficiency, and reduce associated greenhouse gas emissions.	Minor adverse	None
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Medium	Medium	Short-term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	This option does not directly result in improvements to water efficiency. This option makes use of an existing asset to increase abstraction in compliance with the drought order/drought permit and maintain essential public water supplies during drought conditions.	Moderate 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)**
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Abstraction would be from a WFD groundwater body.The RNAG for the groundwater body in 2019 (cycle 3) were associated with poor nutrient management, groundwater abstraction, poor livestock management and groundwater resource impacts. A WINEP AMP8 No Deterioration investigation is currently underway within the wellfield, and the current Environment Agency position is that abstraction licences will be capped from 2030. Under this scenario, abstraction associated with the drought option would not be expected to exceed the no deterioration baseline and additional impacts would therefore be limited. However, future licensing arrangements remain under review and some uncertainty exists regarding the long-term implications for groundwater quality and status. Taking account of the existing poor status of the groundwater body, the potential to contribute to existing pressures, and the residual uncertainty regarding future groundwater management, a moderate adverse effect is assessed. The boreholes are in close proximity to the River Torne. There may be watercourse crossings associated with the proposed temporary pipeline. Impacts are likely to be mitigated through embedded design or standard good practice. Pollution risks from construction activity should be mitigated by best practice methods. The option will be making better use of the existing abstraction license, so there will be no additional abstraction than that which has already been agreed.	Moderate adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Abstraction would be from a WFD groundwater body which is subject to abstraction pressures. A WINEP AMP8 No Deterioration scheme is currently being implemented within the wellfield and is expected to result in abstraction licences being capped by 2030 to protect groundwater resources and associated river flows. Whilst abstraction associated with the drought option would be expected to operate within these controls and would not be anticipated to exceed the no deterioration baseline, the option would nevertheless involve additional abstraction from a groundwater body already subject to resource pressures. Future licensing arrangements remain subject to regulatory review, including potential changes to abstraction controls and drought management mechanisms, resulting in some uncertainty regarding long-term effects on groundwater levels and groundwater contributions to river flows. Taking account of the poor status of the groundwater body, the existing abstraction pressures, and the residual uncertainty surrounding future abstraction management, the option could contribute to adverse effects on groundwater resources and associated flow regimes. Although operation would be temporary and infrequent during drought conditions, the effect is assessed as moderate adverse.	Moderate adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	This option would increase the amount of water available for supply during drought conditions through the use of an existing licensed groundwater source. However, the source groundwater body is already subject to abstraction pressures and classified as being in poor overall status. Whilst abstraction would be expected to operate within the constraints of the regulatory framework and any applicable environmental controls, operation of the option could contribute to existing pressures on groundwater resources and water-dependent ecosystems. Further uncertainty remains regarding future abstraction controls and licensing arrangements. Consequently, although the option would support drought resilience and the maintenance of water supplies, it could result in adverse effects on the sustainable management of water resources and achievement of WFD objectives. Therefore, a moderate adverse effect is assessed.	Moderate adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Low	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	By improving operational flexibility and maximising the use of existing licensed abstraction, the scheme may indirectly support more sustainable water resource management. If implemented as part of a broader drought response, it will be accompanied by public conservation campaigns to encourage efficient water use and increase awareness of water's value.	None	Minor beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The exact location of the proposed connecting infrastructure, land take and the impact on agricultural land are not known. The exact routing and extent of the temporary pipeline, land take and the impact on agricultural land are not known, so a precautionary assessment has been applied. The area close to the boreholes is not classified as high-value agricultural land. The potential effects on land-use associated with the construction work are considered medium-scale, temporary and reversible. The scheme uses existing infrastructure sites/ corridors, which support efficient use of land; standard good practice will be implemented for soil management. The scheme relies on the abstraction of groundwater, but it is not anticipated that this will result in changes to geology. Abstracted groundwater is being introduced to the water supply via pipelines and an existing WTW, and as a result, geomorphology will not be impacted. Pipeline works areas would be reinstated.	Minor adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	As the exact location and extent of required infrastructure are not yet known, a precautionary assessment has been applied. The boreholes are within 1km of an AQMA associated with a Motorway.. The location of the boreholes is built up and close to major transport infrastructure. Construction work and vehicle movements associated with the construction phase will give rise to air emissions, and these will be minimised through best construction practices. Increased pumping of water is expected; therefore, some additional energy use is envisaged during operation.	Minor adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	Construction work and vehicle movements associated with the construction phase will give rise to temporary GHG emissions over the short term, but these will be minimised through best construction practices. The increased energy consumption during operation would be associated with a negligible increase in GHG emissions. The extent of use of renewable energy and energy efficiency is not known at this stage.	Minor adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Short-term	Temporary	High (beneficial)	Medium (beneficial)	This option improves resilience by making use of an unused licensed abstraction that would otherwise not be realised. Some uncertainty remains as to the reservoir levels during a drought, or in response to a changing climate, and so, without further investigation, reliance on this option could reduce the resilience of the network overall. The scale of this scheme would make a moderate beneficial contribution to securing a resilient water supply in the longer term to help meet the challenges of potential climate change impact on water supply reliability. The drought option allows YW to diversify its water sources under drought conditions.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The exact routing and extent of infrastructure, land take, and the impact on heritage sites and landscapes are not known, so a precautionary assessment has been applied. There is a Grade II listed building c.160m away and two scheduled monuments. Construction activities may affect the setting of listed buildings and scheduled monuments where these activities occur in close proximity. However, there are unlikely to be any water-dependent heritage sites in the area. The impacts from grid connection are expected to be confined to a small area. Best practice design and construction methods will be employed to mitigate potential impacts. While there is potential for construction to disturb previously unknown buried heritage assets, this risk will be assessed through desk-based studies and further investigations prior to construction. If required, a watching brief, surveys, and investigations will be implemented during construction to minimise the risk of adverse impacts on any unknown heritage features No operational impacts are anticipated.	Moderate adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Low	Short-term	Temporary	Medium (adverse)	Low (adverse)	Although the nature and extent of works associated with this option are not known, the boreholes are not located close to the Greenbelt, National Landscapes or National Parks. The boreholes are located in an area characterised by major roads, infrastructure, and built-up areas. There may be some limited grid connection infrastructure construction impacts on visual amenity anticipated in rural areas, but this would be short-term. If construction is within the greenbelt or is in proximity to National Landscapes, there is potential for small-scale impacts on the openness of this land. During operation, there would be no above-ground assets once construction is completed.	Minor adverse	None

Drought Plan Option Name: Doncaster Groundwater Option 3

Drought Plan Option Description: This option comprises an unused existing licence that is not connected to the grid. There are currently three (3 No.) boreholes at Doncaster Groundwater Option 3 site which have all been out of operation since 2002. A significant scheme would be required to get the site up and running again as it is not currently connected to supply assets.The boreholes may require relining, new headworks and on-site treatment (for a drought option this could be a mobile package plant). Another alternative would be to transfer the raw water main to a WTW. The exact location or routing of the infrastructure is not known and a precautionary assessment has been applied. Likely benefit expected is 9.09 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 To conserve 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	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The exact location or routing of the infrastructure is not yet confirmed. Construction works are likely to be medium-scale and may include borehole relining, new headworks, connection to the distribution network, and either a new on-site treatment facility, a mobile package treatment plant, or transfer to a WTW (8 km). A precautionary assessment has therefore been applied. The option benefits from an existing abstraction licence, however, would still involve an increase in abstraction. An SPA/SSSI/NNR, together with an SAC, are located within 2 km of the boreholes, with an SAC located approximately 5.75 km away. HRA screening identified a potential pathway for effects on designated bog habitats through changes in groundwater levels and hydrological regimes associated with abstraction. However, available evidence indicates that the designated sites are likely to be hydraulically separate from the bedrock aquifer and that direct hydrological connectivity is limited. Nevertheless, uncertainty remains regarding the extent of groundwater connectivity and potential effects on qualifying habitats and supporting habitats. There are also five additional SSSIs within 10 km of the borehole location and priority habitats within 100 m of the site, including traditional orchard habitat. As the extent and routing of infrastructure, and the magnitude of any abstraction-related effects, are not yet known, the potential effects on designated sites, protected habitats and associated biodiversity receptors cannot currently be fully characterised. A precautionary assessment has therefore been applied, resulting in a moderate adverse effect being assessed.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Low (beneficial)	There are 3 types of priority habitat within 100 m (one within 100 m- traditional orchard), and one Nature Improvement Area within 1 km of the borehole location. Given the anticipated scale of works, a moderate adverse effect is anticipated. The site benefits from an existing abstraction licence. Depending on the final design and footprint of the works, there may be opportunities for habitat enhancement and biodiversity net gain (BNG). At this stage, the location, extent and benefits of any BNG measures cannot be defined and are subject to further design development. Potential BNG benefits have therefore not been included in the assessment.	Moderate adverse	Minor beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	There is a small risk of spreading terrestrial INNS through construction. Mitigation measures will be in place to minimise risk, including the identification, removal, or treatment of INNS prior to construction waste disposal. During operation, there is a low risk of introducing or spreading aquatic INNS through abstraction, treatment and discharge activities. The option includes treatment of abstracted water prior to distribution, and may involve discharge of treated backwash water to drain. Appropriate biosecurity measures, together with an INNS risk assessment and management plan, should be implemented to minimise the risk of transfer or spread.	Moderate adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	Low	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The borehole site is located approximately 280 m from a school, within a residential area, within 1 km of a Noise Action Planning Important Area, and approximately 10 km from the nearest AQMA. Construction activities associated with borehole relining, new headworks, treatment infrastructure and network connection works may result in temporary dust, noise and vibration effects. The drought option would deliver up to 9.09 Ml/d, helping to maintain essential public water supplies during drought conditions and therefore help maintain public health and increase the reliability and resilience of the overall supply system.	Moderate adverse	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Low	Short-term	Temporary	Medium (adverse)	Low (adverse)	The borehole site is located approximately 280 m from a sports pitch and approximately 3.7 km from a canal. There are no parks, publicly accessible open spaces or recreational trails on or immediately adjacent to the site. The precise extent and routing of network connection infrastructure are not yet known. Construction works may include borehole relining, new headworks, treatment infrastructure and connection to the water supply network. Temporary disturbance to local communities and recreation receptors may occur during construction as a result of noise, traffic, access restrictions and other construction activities. Where recreation routes or access points are affected, appropriate traffic management and diversion measures would be implemented in accordance with best practice. No significant effects on recreation and access are anticipated during operation.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Low	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	The borehole site is located adjacent to a main A road, within a residential area and close to community infrastructure. Construction works may include borehole relining, new headworks, treatment infrastructure and connection to the water supply network. These activities may result in temporary disruption to local access, services and amenity. The scheme may also generate short-term employment opportunities and support local procurement during construction. Implementation of the drought option will contribute to the maintenance of supply reliability in drought conditions (up to 9.09 Ml/d), ensuring a resilient supply for customers and economic activity with no signficant adverse effects anticipated during operation.	Moderate adverse	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The option would require construction activities including borehole relining, new headworks, treatment infrastructure, concrete slabs for chemical storage and dosing kiosks, new pumps, electrical equipment and connection to the existing water supply network. This would require the use of additional materials and generate construction waste. The scheme would also make use of existing infrastructure where feasible. During operation, there would be an increase in energy demand associated with abstraction, pumping and treatment processes. However, modern process controls, telemetry and variable speed drives may support more efficient operation and optimisation of energy use	Moderate adverse	None
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Medium	Low	Short-term	Temporary	Low (adverse) Medium (beneficial)	Low (adverse) Medium (beneficial)	Construction waste would be generated and managed in accordance with standard construction waste protocols. This option makes use of an existing asset to increase abstraction in compliance with the drought order/drought permit and maintain essential public water supplies during drought conditions.	Moderate adverse	Moderate beneficial
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	It is assumed that abstraction would be from a WFD groundwater body, classified as having poor overall WFD status. Cycle 3 RNAG identify pressures relating to nutrient management, groundwater abstraction, livestock management and groundwater resource impacts. Operation of the drought option could therefore contribute to existing groundwater pressures. Although an abstraction licence exists, the sources are currently unused and implementation of the option is assumed to require a drought permit or order. A WINEP AMP8 No Deterioration investigation is underway within the Wellfield, and the current Environment Agency position is that abstraction licences will be capped from 2030. Under this scenario, abstraction associated with the drought option would not exceed the no deterioration baseline and additional impacts would be limited. However, uncertainty remains regarding future licensing arrangements and the long-term implications for groundwater quality and status. Taking account of the groundwater body's existing poor status, potential contribution to existing pressures and residual uncertainty, a moderate adverse effect is assessed. No watercourses have been identified within 1 km of the proposed borehole location, although a drain and sewer are present nearby. Operational effects on surface water quality are not anticipated. However, construction of associated infrastructure, including pipelines and electrical connections, may require crossings of drainage features, creating temporary risks of sediment release or pollution. These effects are expected to be localised and temporary with the application of standard construction controls.	Moderate adverse	None

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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 To protect and enhance surface and groundwater levels and flows	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	Abstraction would be from a WFD groundwater body. Although the source benefits from an existing abstraction licence, implementation of the drought option would increase abstraction and has the potential to affect groundwater levels and associated receptors. The groundwater body is classified as having poor overall WFD status, with Cycle 3 RNAG identifying groundwater abstraction and groundwater resource impacts as existing pressures. The drought option could therefore contribute to these pressures. Further investigation is required to determine the magnitude and extent of groundwater drawdown, the degree of groundwater-surface water interaction, and the sensitivity of environmental receptors to changes in the hydrological regime. Potential effects on nearby water bodies and groundwater-dependent habitats therefore remain uncertain at this stage. A WINEP AMP8 No Deterioration investigation is underway within the Wellfield, and the current Environment Agency position is that abstraction licences will be capped from 2030. Under this scenario, abstraction associated with the drought option would not exceed the no deterioration baseline and additional impacts would be limited. However, uncertainty remains regarding future licensing arrangements and the long-term implications for groundwater quality and status. Taking account of the groundwater body's existing poor status, potential contribution to existing pressures and residual uncertainty, a moderate adverse effect is assessed.	Moderate adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Low	Short-term	Temporary	Medium (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	This option would make use of existing assets to maintain water supplies during prolonged drought conditions through increased groundwater abstraction. While this would improve water supply resilience, further assessment is required to understand the extent of any environmental effects and confirm the sustainability of the proposed abstraction. The source benefits from an existing abstraction licence; however, abstraction would be subject to regulatory controls and any drought permit or order requirements. A WINEP AMP8 No Deterioration investigation is underway within the Wellfield, and the current Environment Agency position is that abstraction licences will be capped from 2030. Under this scenario, abstraction associated with the drought option would not be expected to exceed the no deterioration baseline. However, uncertainty remains regarding future licensing arrangements and the long-term implications for groundwater resources and WFD objectives. Taking account of the groundwater body's poor status, existing abstraction pressures and residual uncertainty regarding sustainable groundwater management, a moderate adverse effect is assessed.	Moderate adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Low	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The option would recommission an existing licensed groundwater source, increasing available water supplies during drought conditions and improving operational flexibility within the water supply network. By making use of existing boreholes and abstraction rights, the scheme would support more efficient use of available water resources. The option is estimated to deliver up to 9.09 Ml/d, reducing reliance on imported supplies to the Doncaster area and increasing resilience across the wider supply network during drought conditions.	None	Moderate beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	No Grade 3 agricultural land is located close to the borehole site. The precise location and extent of new infrastructure, including treatment facilities and network connection works, are not yet confirmed. Construction may include borehole relining, new headworks, treatment infrastructure, concrete slabs, and associated pipeline and electrical works. A precautionary assessment has therefore been applied. Potential effects on land use and soils associated with construction are expected to be medium-scale, temporary and reversible. The option would make use of an existing borehole site and existing infrastructure where feasible. Standard good practice for soil handling, storage and reinstatement would be implemented. The scheme relies on abstraction from an existing licensed groundwater source. No significant effects on geology or geomorphology are anticipated, as water would be abstracted and conveyed through treatment and distribution infrastructure. Temporary working areas and any disturbed land would be reinstated following construction.	Moderate adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Medium	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The borehole site is located adjacent to a main A road, within a built-up residential area and close to community infrastructure. The site is located more than 10 km from the nearest AQMA. Construction activities would generate temporary dust and air pollutant emissions from vehicle movements and construction plant. These effects would be minimised through the implementation of best practice construction measures. Given the scale of works and the site's location within a residential area, moderate adverse dust effects may occur during construction. During operation, energy would be required for groundwater abstraction, pumping and water treatment processes. Whilst this would increase electricity consumption, direct air emissions are expected to be negligible as power would be supplied via the electricity network.	Moderate adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Medium	Low	Short-term	Temporary	Medium (adverse)	Low (adverse)	Construction activities would generate temporary greenhouse gas emissions associated with material use, plant, transport and construction activities. The scheme has an estimated embodied carbon footprint of approximately 910 tCO_2e. During operation, energy would be required for groundwater abstraction, pumping and water treatment processes, resulting in an increase in electricity consumption and associated greenhouse gas emissions. The extent to which renewable energy sources or further energy efficiency measures may be incorporated is not known at this stage. However, the use of telemetry, process controls and variable speed drives may support more efficient operation.	Minor adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	Low	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The existing abstraction license applies. The scale of this scheme would make a beneficial contribution (up to 9.09 Ml/d) to securing a resilient water supply in the longer term to help meet the challenges of potential climate change impact on water supply reliability. The drought option allows. The option would reduce reliance on imported supplies within the Doncaster area and increase operational flexibility across the wider network. By diversifying available water sources during drought conditions, the scheme would improve the resilience of the water supply system to future climate-related risks.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Medium	Low	Short-term	Temporary	Medium (adverse)	Low (adverse)	The precise layout of new infrastructure, treatment facilities and network connection works is not yet confirmed. The potential effects on heritage assets therefore cannot be fully determined at this stage and a precautionary approach has been applied. There are nine Grade II listed buildings within 1 km of the borehole location - none within 100. There are no scheduled monuments within 1 km of the option. Best practice design and construction methods will be implemented to mitigate potential effects. While there is potential for construction to disturb previously unknown buried heritage assets, this risk will be assessed through desk-based studies and further investigations prior to construction. If required, a watching brief, surveys, and investigations will be implemented during construction to minimise the risk of adverse impacts on any unknown heritage features No significant operational effects on heritage assets are anticipated.	Minor adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Low	Short-term	Temporary	Medium (adverse)	Low (adverse)	The precise layout and extent of new infrastructure is not yet confirmed. The potential effects on landscape character and visual amenity therefore cannot be fully determined at this stage and a precautionary assessment has been applied. There are no National Parks, Areas of Outstanding Natural Beauty or Green Belt land within 10 km of the borehole site. Temporary adverse effects on visual amenity may occur during construction as a result of construction activities, plant, vehicle movements and materials storage. Some localised change in views may also result from the introduction of new above-ground infrastructure, although the site is located within an existing developed setting.	Minor adverse	None

Drought Plan Option Name: Pickering / Thirsk Groundwater Option 1

Drought Plan Option Description: This option provides support to Pickering / Thirsk Groundwater Option 1 WSSs. New boreholes at these sites would provide more reliability and resilience but require a significant network infrastructure upgrade. During lower groundwater levels, the flow at the Kelds springs east of the WTW reduces. When flow over the exit weir ceases, total daily abstraction is limited to 12 Ml/d from 17 Ml/d. A Drought Permit may be possible to increase abstraction when flow over the Kelds weir is zero. Yield is available in the aquifer. The likely benefit during a drought is 4 Ml/d.

SEA topics and objectives		Assessment of option								
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Biodiversity, flora and fauna	1.1 To conserve 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	Long-term	Permanent	Medium (adverse)	Low (adverse)	There are three SSSIs within 5km of the scheme. There are two areas of ancient woodland within 200m of the pipeline to the WTW. An SAC is located 12 km south-east of the borehole. Water-dependent qualifying species include Sea Lamprey, River Lamprey, Bullhead, Otter and water courses with Water-crowfoot. No impact pathways have been identified during the construction of this scheme. However, the scheme asset is hydrologically connected to the River Derwent (via the River Rye) and could therefore have operational impacts on an SAC. The scheme asset is hydrologically connected to the an SAC/SPA/Ramsar site and all of the qualifying features of the SAC, SPA and Ramsar site are water dependent (via the River Rye and another SAC). Potential impact pathways have been identified on sea and river lamprey only, due to the likely significant effects on functionally linked habitat present in the River Rye. A reduction in flow in this water body could significantly impact the in-channel habitats and, therefore, the suitability of habitats present to support sea lamprey, river lamprey, bullhead and otter. There are also morphology and point source water quality pressures in this water body that could be exacerbated as a result of the flow reduction, which may impact on qualifying features of these internationally designated sites. Therefore, likely significant effects cannot be ruled out at this stage during the operation. Please refer to the full HRA assessment. The HRA Stage 2 Appropriate Assessment undertaken for this option concluded no adverse effects to lamprey or otter (with implementation of suitable mitigation) as the increased abstraction is limited to when there is no flow entering the river system over the weir in Keld Springs. As there will be no flow entering the catchment and the weir acting as a barrier to fish passage, abstraction will not lead to adverse effect on lamprey or integrity of the SAC. Following an otter survey and the implementation of mitigation, there will be no adverse effect to otter.	Minor adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Long-term	Permanent	Medium (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	The scheme may have negligible effects on the hydrological cycle at a local scale, in influencing waterbody flows. The abstraction will make use of the existing license and stay within license limits, and no major water-dependent features are likely to be affected by the abstraction. An estimated 76 biodiversity units would be lost during the construction of pipelines and other infrastructure, resulting in minor adverse impacts. This will provide minor beneficial opportunities for compensatory planting and habitat enhancement. The scheme does not fall within a Natural Improvement Area. At this drought planning stage, the scale and location of BNG measures 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 To avoid introducing or spreading INNS.	Medium	High	Medium-term	Permanent	Low (adverse)	Low (adverse)	There is potential for the spread of INNS during the construction phase, although the extent of this risk remains uncertain. If introduced, INNS could have significant adverse effects due to the scheme's hydrological connection to the River Derwent (via the River Rye). However, this risk can be minimised through good construction practices, provided that appropriate mitigation measures (such as washing construction vehicles before they leave the site) are implemented. It is important to note that invasive species are already present along the construction route. No additional risk of INNS spread is anticipated during the operational phase should appropriate biosecurity protocols be implemented.	Negligible adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small (adverse) Large (beneficial)	Medium (adverse) High (beneficial)	Long-term	Permanent	Low (adverse) Low (beneficial)	Low (adverse) Medium (beneficial)	The scheme construction phase is likely to result in temporary minor effects from noise, dust and vibration, although the construction areas are in rural locations, with limited built-up areas, and no AQMAs or Noise Action Planning Important Areas nearby. Impacts will be mitigated as far as possible through best construction practices. The scheme will not increase licensed abstraction; however, it will increase the reliability and resilience of the overall supply system, maintaining supply under drought. The drought option will help to maintain essential public water supplies during drought conditions and therefore help maintain public health/wellbeing by supplying 4 Ml/d.	Negligible adverse	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Medium	Short-term	Temporary	Medium (adverse)	Low (adverse)	There may be temporary disturbance and disruption to local services during the construction phase. During construction, access to areas used for recreation may be reduced; however, if best practice is followed, suitable diversions will be put in place. There is a golf course within 300m of the pipeline, and impacts on recreational activities may occur during construction of the new pipeline. The proposed pipeline route traverses several public footpaths. A bridleway passes within 150m of the scheme assets. Construction and operation of the scheme are not expected to directly affect access to water-related recreation. During operation, the scheme will not affect access to open spaces.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Medium	Long-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Medium (beneficial)	There may be temporary disturbance and disruption to local services during the construction phase. Implementation of the drought option will contribute to the maintenance of supply reliability in drought conditions (4 Ml/d), ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment, if best practice is followed.	Negligible adverse	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Medium	Medium	Long-term	Permanent	Medium (adverse)	Low (adverse)	Resources for the construction of additional components to the scheme will be sourced locally where possible. The new infrastructure for the scheme will require significant volumes of materials for constructing pipelines, pumps and new assets. The scheme will make use of the existing WTWs. Construction activities will generate excavated materials, packaging, and spoil. During operation, additional power will be required to operate the scheme's assets as well as small quantities of natural resources for maintenance, repairs, and monitoring. for constructing pipelines, pumps and new assets, such as	Minor adverse	None
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Medium (beneficial)	The use of this drought option will help to maintain supply and will be accompanied by water conservation campaigns to promote efficient use of water to protect the environment and safeguard supplies. The option may generate some construction waste, which will be managed in accordance with standard construction waste protocols. This option will use the existing abstraction license to ensure sustainable resource management. Use of operational controls could help improve energy efficiency and reduce GHG emissions. Waste from construction and operation is expected to be commensurate with an option of this scale. Both factors are expected to result in negligible effects.	Negligible adverse	Minor beneficial

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Water	4.1 To maintain or improve the quality of surface and groundwater resources	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Overall, significant adverse effects on the quality of surface or groundwater resources are not anticipated and the option is considered likely to result in a minor adverse effect (low confidence) due to uncertainty regarding any indirect effects associated with changes to local hydrogeological conditions. The groundwater body is currently at Poor Chemical Status. However, the Environment Agency's RNAG assessment identifies the principal chemical pressures as diffuse agricultural pollution, sewage discharges, private sewage treatment systems and contaminated land. The proposed drought permit would not introduce new sources of pollution and is therefore unlikely to directly affect groundwater chemical quality. There is some uncertainty regarding the influence of increased abstraction on connected surface water bodies through groundwater-surface water interactions; however, no direct deterioration in surface water quality is anticipated during operation. Temporary adverse effects on surface water quality could occur during construction, although these would be minimised through standard pollution prevention and best-practice construction measures. Overall, the option is considered likely to result in a negligible effect on surface and groundwater quality, with effects primarily limited to temporary construction-related risks.	Negligible adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Low	Long-term	Permanent	Low (adverse)	Low (adverse)	The option would increase abstraction from a WFD groundwater body by up to 4 Ml/d. Although at Poor quantitative status, available information indicates that sufficient yield is available within the aquifer to support the proposed increase in abstraction. Whilst the additional abstraction has the potential to affect groundwater levels locally through increased drawdown, the increase in abstraction is unlikely to significantly impact groundwater resources. The additional abstraction may also influence connected surface water bodies. As the abstraction would only occur when no flow is entering the river system over the weir at Keld Spring, river flows would remain unaffected. Although there remains uncertainty regarding the extent of groundwater-surface water interaction and the magnitude of any associated hydrological effects, significant impacts on WFD elements are considered unlikely. Overall, a minor adverse effect is considered likely, although confidence is low due to uncertainty regarding groundwater drawdown and groundwater-surface water connectivity. Further investigation is required to confirm the magnitude of any effects and implications for WFD status objectives.	Minor adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Low	Long-term	Permanent	Low (adverse) Low (beneficial)	Medium (adverse) Low (beneficial)	The option would provide additional resilience to the associated water supply systems through a drought permit enabling increased abstraction from the scheme assets during drought conditions. Available information indicates that sufficient yield is available within the aquifer to support the proposed abstraction. Whilst the option has the potential to support water supply resilience, further assessment would be required before implementation to demonstrate compliance with WFD objectives and confirm that water-dependent habitats and species would not be adversely affected. The option would also be supported by water efficiency and conservation measures to promote the sustainable use of water resources during drought conditions. Overall, the option is considered likely to have a minor adverse effect (low confidence) reflecting the need for further assessment of potential effects on water-dependent ecosystems and WFD compliance.	Minor adverse	Negligible beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Low	Long-term	Permanent	Low (beneficial)	Low (beneficial)	This option involves increased abstraction for use. By improving operational flexibility, the scheme may indirectly support more sustainable water resource management. While the scheme does not improve efficiency directly, it is part of a broader drought response accompanied by public campaigns promoting efficient water use.	None	Negligible beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	High	Medium-term	Permanent	Low (adverse)	Low (adverse)	Most of the scheme and the permanent surface infrastructure is located within Grade 3 Agricultural Land. The scheme relies on the extraction of groundwater, but it is not anticipated that this will result in changes to geology. Abstracted groundwater is being introduced to the water supply via pipelines and an existing WTW, and as a result, geomorphology will not be impacted. Excavations and construction activities will affect soils through disturbance, compaction and erosion. There may also be contamination risks associated with construction. Construction of the pipeline will have a negligible effect on the quality and quantity of the soils in the area. Construction of the pumping station, intake, and pipeline would be constructed within largely built-up areas, which reduces the impact on land use/ soils. Given that the proposed new infrastructure would be permanent, permanent land take will occur. Pipeline corridors would be reinstated and returned to their previous land use, if that is practical. The scheme is inland and could make use of previously developed land, which supports the efficient use of land. Standard good practice will be implemented in relation to soil management.	Negligible adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Medium	High	Long-term	Permanent	Low (adverse)	Medium (adverse)	The scheme is not within any AQMAs. Construction of this option is likely to cause a minor adverse short-term impact on local air quality. Construction work and vehicle movements associated with the construction phase will give rise to air emissions and dust over the short term. The scheme is not within any AQMAs.. The works area could impact nearby SSSIs and aquatic species through dust emissions. Air emissions impacts will be minimised through best construction practices. Operational emissions are associated with the operation of the pumping station. If powered by the grid (especially renewable sources), operational emissions would be minimal to negligible.	Minor adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Small	Medium	Long-term	Permanent	Low (adverse)	Medium (adverse)	Construction work, use of materials and vehicle movements associated with the construction phase will give rise to GHG emissions; these will be minimised through best construction practices. Operational GHG emissions are associated with the operation of the pumping station. If powered by renewable sources, operational emissions would be reduced to negligible. Whilst in operation, control strategies would be used to optimise pump operation and to avoid unnecessary energy consumption.	Minor adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	High	Long-term	Permanent	Low (beneficial)	Medium (beneficial)	Although the scheme does not change the capacity of the existing YW network, it would make a moderate beneficial contribution to enhancing the reliability and resilience of the water supply as well as maximise the use of the current abstraction license. The drought option allows YW to diversify its water sources under drought conditions.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Medium	High	Short-term	Temporary	Low (adverse)	Low (adverse)	There is a scheduled monument within 400m of the new pipeline. There are 29 listed buildings within 1km of the scheme; one of the buildings is Grade I listed, and the rest are Grade II listed. Construction of this option has the potential to have a minor adverse effect on heritage assets. Construction work has the potential to disturb unknown buried assets. A watching brief, surveys and investigations would be implemented during construction to reduce the risk of adverse impact on any unknown heritage assets. Operation of the scheme and associated impacts are unlikely to have an adverse effect on any heritage assets or setting.	Negligible adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	High	Short-term	Temporary	Low (adverse)	High (adverse)	Parts of the scheme are located within a National Landscape. Impacts on the National Landscape will occur during construction; these impacts are expected to be moderate adverse but will be temporary. Minor adverse operational effects are expected due to one of the new assets being located within the National Landscape. Due to the nature of the assets, effects on landscape character will be minimal. A Greenbelt and National Park are both within 10km of the scheme.	Moderate adverse	None

Drought Plan Option Name: Selby Groundwater Option 1

Drought Plan Option Description: This option is to return a borehole (BH2) to service. The option will involve installation of automated run to waste/return to service valve to allow BH2 to run, turn out high turbidity and continue running whilst returning to supply. The likely benefit during a drought is 5 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 To conserve 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	Permanent	Low (adverse)	Low	A SSSI is located within 2 km of the option. The SSSI has features that depend on seasonal flooding and associated water habitats, including floodplain meadows, wetland mosaic, water-dependent species such as water vole, wetland birds, aquatic plants, and macroinvertebrates. The closest patch of ancient woodland is located approx. 2km from the proposed scheme site. There are no SACs/SPAs within 5km of the option. The location of the new borehole is currently unknown, however, it is anticipated that construction would not adversely impact the identified designated sites. Minor impact pathways are associated with construction, related to the introduction or spread of INNS, as well as the introduction of dust, noise, and vibration, and localised groundwater or soil disruption. Employing best practice in both design and construction will help mitigate any potential risks. In terms of operational effects, the use of an existing (but currently unused) licence suggests minimal new hydrological pressures. There is no net change in groundwater abstraction or licensed hydrological balance if the abstraction stays within licensed volumes, and no likely significant flow reduction impacts are anticipated. No significant opportunities for habitat creation or restoration are anticipated as part of this option. This option is unlikely to directly contribute to the sustainable management of natural habitats.	Negligible adverse	Negligible beneficial
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Medium	Short-term	Permanent	Low (adverse)	Low	The abstraction uses an existing but currently unused licence. The scheme is expected to have negligible effects on the local hydrological cycle as there is no net change in groundwater abstraction or licensed hydrological balance, If the abstraction stays within licensed volumes. No significant water-dependent features or associated aquatic or terrestrial species, including migratory fish, are likely to be affected. Depending on whether biodiversity units are lost during the construction of the replacement borehole, beneficial opportunities for compensatory planting and habitat enhancement may be available. At this drought planning stage, the scale and location of BNG measures 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. The proposed scheme supports long-term groundwater resource management by restoring to full licensed capacity, enhancing the reliability of abstraction during periods of variable demand and contributing to the resilience of local water supply infrastructure without exceeding licensed volumes.The use of a groundwater source with no surface water connections helps protect surface habitats and aquatic biodiversity from hydrological stress.	Negligible adverse	Negligible beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Small	High	Medium-term	Permanent	Low (adverse)	Low	There is a small risk of introducing/spreading INNS during construction. Construction and operation activities will have vehicle and equipment movement and ground disturbance, which could create introduction or spread pathways for INNS. Mitigation measures will be implemented to avoid this. Invasive species on site will be identified and removed or treated in advance of construction works. Abstracting and discharging water within the same catchment (especially when functionally linked to designated sites) may pose INNS risks if proper controls aren't in place. However, operation of the scheme is not expected to introduce or spread INNS, provided that appropriate biosecurity measures are implemented and maintained. An INNS risk assessment and management plan should be completed prior to operation.	Negligible adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (adverse) Medium (beneficial)	Low	The option's construction phase is likely to result in temporary minor effects such as noise, dust, and vibration. The exact location is currently unknown but the area around Selby Groundwater Option 1 is predominantly rural; as such, these impacts are expected to be less significant compared to those in more densely populated areas. Mitigation will be applied as far as possible through best construction practices. The drought option will increase the reliability and resilience of the overall supply system and help to maintain essential public water supplies during drought conditions, therefore maintaining public health/wellbeing by supplying 5 Ml/d.	Negligible adverse	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low	There are no recreational areas or no national trails nearby and likely significant effects are not expected during the implementation of the drought option. A public footpath runs through the proposed site. Any impacts on nearby recreational amenities are anticipated to be temporary during the construction phase and will be mitigated through good practice measures. The scheme will aim to protect existing recreational access and green infrastructure with post-construction reinstatement. Opportunities for minor enhancements (e.g. planting or habitat links) will be considered as part of the scheme delivery.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Low	Short-term	Temporary	Medium (beneficial)	Medium	Implementation of the drought option will contribute to the maintenance of supply reliability in drought conditions (5 Ml/d), ensuring a resilient supply for customers and economic activity with no permanent adverse effects on the environment provided best practice is followed.. A secure and adaptable water supply is crucial for maintaining public health, supporting economic activities, housing and infrastructure development. The scheme may provide short-term local employment opportunities during the construction phase and stimulate local procurement.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Permanent	Low (adverse) Low (beneficial)	Low	Construction will require the use of new materials for valve replacement and borehole drilling. The scheme involves upgrading BH2 and replacing BH3, and will make use of the existing infrastructure as far as possible. Construction activities will generate excavated materials, packaging, and spoil. Standard best practice in construction waste management would be implemented (such as a Site Waste Management Plan), and recycling of inert waste will be maximised. There may be opportunities to reduce packaging/material inputs in procurement. During operation, additional power will be required to operate the scheme's assets as well as small quantities of natural resources for maintenance, repairs, and monitoring. The scheme does not directly reduce demand but supports secure abstraction. System controls may support more efficient abstraction, improve energy efficiency, and reduce associated greenhouse gas emissions.	Minor adverse	Negligible beneficial

SEA topics and objectives		Assessment of option								
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Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Small	Medium	Medium-term	Permanent	Low (beneficial)	Medium	The drought option would make greater use of the existing abstraction licence, meaning fewer constraints on output during normal and drought conditions, whilst improving the existing water resource management efficiency needed to maintain essential public water supplies during drought conditions. The use of automated flushing of poor-quality water could reduce manual intervention and minimise downtime after restart, allowing smoother, more consistent options. Bringing BH2 back online and replacing BH3 restores the site's original design capacity, meaning fewer constraints on output during normal and drought conditions. The scheme could result in better redundancy, lower risk of service interruptions, and more stable supply.	None	Minor beneficial
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Small	Low	Short-term	Permanent	Low (adverse)	Low	Installation of the new borehole may mobilise contaminants depending on location/ geological conditions, and alter groundwater flow paths. Abstraction would be from a WFD groundwater body. The RNAG (17 March 2025) for the groundwater body in cycle 3 were associated with chemicals, with a suspected abstraction/flow issue under review. The option is intended to manage the turbidity spikes at BH2, to limit high turbidity water from entering the supply system (benefit). The option will be making better use of the existing abstraction license, so there will be no additional abstraction than what has already been agreed. The option would be subject to full WFD compliance assessment prior to implementation.	Negligible adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Low	Short-term	Temporary	Low (adverse)	Low	Abstraction would be from a WFD groundwater body. The options will increase abstraction by ~5Ml/d. This additional abstaction is within the current licence, but has the potential to impact elements in the waterbody. There is currently insufficient data to be able to assess the significance of the groundwater drawdown, however, it is anticpated that impacts would be limited to a localised increase in depression of groundwater levels. Information provided by Yorkshire Water indicates that there is no interaction with surface water. Further investigation would be required prior to implementation to inform this assessment.	Negligible adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Low	Short-term	Permanent	Low (adverse Low (beneficial)	Medium	The option provides short-term resilience benefits by utilising an existing (unused) abstraction licence. Water availability may be constrained despite an existing licence. The groundwater body is not at good WFD status due to chemical pressures and suspected abstraction impacts. Increased use requires environmental review and will be subject to permit approvals. While short-term benefits exist, long-term sustainability depends on permitting, monitoring, and aquifer response, with cumulative pressures considered across the region.	Negligible adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Small	Low	Short-term	Permanent	Low (beneficial)	Low	The scheme would not have direct effects on water efficiency. The scheme does not directly contribute towards improving the awareness of water sustainability and its true value. Implementation as part of a broader drought response will be accompanied by public conservation campaigns to encourage efficient water use and increase awareness of water's value. By improving operational flexibility and maximising the use of existing licensed abstraction, the scheme may indirectly support more sustainable water resource management.	None	Negligible beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Small	High	Short-term	Temporary	Low (adverse)	Medium	The exact location of the replacement borehole and the impact on agricultural land are not known. Drilling the replacement borehole is not expected to impact soils or the underlying geology. A small amount of land take will be required due to the nature of the works. Wherever possible, land will be restored following construction. Consequently, land use changes associated with this drought option are anticipated to be minor, and no impacts on geologically important sites are expected. The scheme relies on the abstraction of groundwater, but it is not anticipated that this will result in changes to geology. Abstracted groundwater is being introduced to the water supply via pipelines and an existing WTW, and as a result, geomorphology will not be impacted. The scheme uses existing infrastructure sites/ corridors, which support efficient use of land- standard good practice will be implemented for soil management.	Minor adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Small	High	Medium-term	Temporary	Low (adverse)	Low	The scheme is not within any AQMAs. The site would be in close proximity to the built-up area of Selby Groundwater Option 1. Construction work and vehicle movements associated with construction will give rise to air emissions and dust over the short term; these will be minimised through best construction practices. Increased pumping of water is expected; therefore, some additional energy use is envisaged during operation.	Negligible adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Small	High	Medium-term	Temporary	Low (adverse)	Low	Construction work and vehicle movements associated with the construction phase will give rise to GHG emissions, which will be minimised through best construction practices. During operation, there will be increased pumping of water, so some additional greenhouse gas emissions are envisaged during operation. Extent of use of renewable energy or energy efficiencies is not known at this stage.	Negligible adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (beneficial)	Low	The drought action allows YW to diversify its water sources under drought conditions. This drought action has the potential to change the capacity of the existing YW network if more water can be used as a result, which will enhance the reliability and resilience by allowing greater flexibility in targeted delivery to areas in a water deficit, as well as maximise the use of the current abstraction licenses.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Small	High	Short-term	Temporary	Low (adverse)	Low	There are 12 listed buildings within 1km of the option, the closest of which (approx. 320m west of the proposed scheme) is Grade II. There are no scheduled monuments within 1km. There are unlikely to be any water-dependent heritage sites in the area. The impacts from borehole drilling are expected to be confined to a small area. Best practice design and construction methods will be employed to mitigate potential impacts. While there is potential for construction to disturb previously unknown buried heritage assets, this risk will be assessed through desk-based studies and further investigations prior to construction. If required, a watching brief, surveys, and investigations will be implemented during construction to minimise the risk of adverse impacts on any unknown heritage features No operational impacts are anticipated.	Negligible adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	High	Short-term	Temporary	Low (adverse)	Low	Some limited short-term construction impacts on visual amenity may be expected in rural areas; however, these would be temporary. The exact location of the new borehole is unconfirmed but the works are not anticpated to be located within the Green Belt or near designated National Landscapes or National Parks, so any impact on the openness of the land would be minimal. The proposed scheme falls within an area designated as (23) Levels Farmland in the North Yorkshire Council Landscape Character Assessment (2024). Guidance includes the promotion of landscape integration using hedgerows and biomass planting, conserving archaeological and ecological features by maintaining water levels, enhancing habitats, managing watercourses, preserving openness, and improving public access and enjoyment.	Minor adverse	None

Drought Plan Option Name: Selby Groundwater Option 2

Drought Plan Option Description: This option comprises enabling works at the operational Selby Groundwater Option 2 groundwater source to increase abstraction and transfer capacity. Selby Groundwater Option 2 currently has three boreholes in service, with a combined output of approximately 10.0 to 10.4 Ml/d, compared with an annual licensed abstraction quantity of 13.7 Ml/d. The proposed schem quantity, providing an estimated deployable output benefit of approximately 3.2 Ml/d.

The scheme would comprise works to improve the performance of Borehole 3 (BH3), with potential works to Boreholes 1 and 2 subject to the findings of further surveys. It would also include enabling works to improve the transfer capability of the existing rising main between the Selby Groundwater Option 2 borehole site and Selby Groundwater Option 1, where the abst The source benefits from an existing active abstraction licence.

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 To conserve 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 (adverse)	The option comprises enabling works to improve the performance of BH3, with potential works to BH1 and BH2 subject to further surveys, alongside works to improve the transfer capability of the existing rising main between Selby Groundwater Option 2 and Selby Groundwater Option 1. Construction activities are likely to be small to medium-scale and would primarily utilise existing infrastructure and pipeline corridors. A precautionary assessment has therefore been applied. The site benefits from an active abstraction licence. There are a number of European designated sites within 10km of the scheme: an SAC, an SAC/SPA/Ramsar, an SAC, an SAC/SPA/Ramsar, and an SPA. There are 2 SSSIs within 5km. Of these sites, none are within or directly adjacent to the scheme's sites. There are no national/priority habitats within 1km. The updated HRA identifies no likely significant effects during construction. However, during operation, a potential impact pathway has been identified in relation to an SAC, as the Selby Groundwater Option 2 abstraction and the SAC are located within the same aquifer. Although the superficial geology is dominated by relatively impermeable lacustrine deposits and surface water connectivity is considered unlikely, uncertainty remains regarding groundwater connectivity and the potential effects of increased abstraction on groundwater contributions to the SAC, particularly during severe and prolonged drought conditions. The HRA therefore identifies a likely significant effect for the SAC and concludes that adverse effects on site integrity cannot currently be ruled out beyond reasonable scientific doubt. For the other European sites considered, no likely significant effects have been identified. Whilst the option would largely utilise existing infrastructure and licensed groundwater abstraction and construction effects are expected to be limited with no direct impacts on designated sites, ancient woodland or priority habitats identified, uncertainty remains regarding operational effects on the SAC. The updated HRA identifies a likely significant effect due to the potential hydraulic connection between the Pollington abstraction and the SAC within the same aquifer. Although groundwater connectivity and impact pathways are currently uncertain, adverse effects on site integrity cannot be ruled out beyond reasonable scientific doubt. As a European site is potentially affected, the option is assessed as having a potentially adverse effect on biodiversity pending further hydrogeological evidence and HRA assessment. There are no areas of ancient woodland in the land between Selby Groundwater Option 1 and Selby Groundwater Option 2.	Minor adverse	None
Biodiversity, flora and fauna	1.2 To 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)	Low (adverse)	The scheme is expected to have negligible effects on the local hydrological regime. The option would comprise enabling works to improve the performance of BH3, with potential works to BH1 and BH2 subject to further surveys, at an existing operational groundwater source and would make use of an active abstraction licence. The review identifies no surface water connections, no impacts on springs and only a low risk of short-term groundwater level effects. No significant water-dependent features are anticipated to be affected. The option primarily comprises enabling works to improve borehole performance and the transfer capability of the existing rising main to Selby Groundwater Option 1, primarily utilising existing infrastructure. Significant habitat loss is not anticipated. At this stage, the scale and location of any biodiversity net gain (BNG) measures cannot be defined and remain subject to detailed design. Potential BNG benefits have therefore not been included in the assessment. The proposed scheme would increase deployable output by approximately 3.2 Ml/d, enabling greater deployment of the existing licensed quantity of 13.7 Ml/d, increasing the reliability and resilience of water supplies during drought conditions without requiring additional licensed abstraction volumes.	Negligible adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Small	High	Medium-term	Temporary	Low (adverse)	Low (adverse)	Construction activities are expected to be localised and largely confined to existing operational areas, reducing the potential for disturbance-related pathways associated with the introduction or dispersal of INNS. No direct hydrological connections or other pathways to sensitive habitats or waterbodies that could facilitate the spread of INNS have been identified. Any short-term risk can be effectively managed through the implementation of appropriate biosecurity measures and good-practice construction controls, including the inspection and cleaning of equipment where necessary. Consequently, effects relating to the introduction or spread of INNS are anticipated to be negligible.	Negligible adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (adverse) Medium (beneficial)	Low (adverse) Low (beneficial)	Construction activities associated with enabling works to improve borehole performance and the transfer capability of the existing rising main may result in temporary noise, dust and vibration effects. Given the predominantly rural location and the use of existing infrastructure, these effects are expected to be temporary and localised. Appropriate mitigation would be implemented through best practice construction methods. The option would provide an estimated deployable output benefit of approximately 3.2 Ml/d, helping to maintain essential public water supplies and support public health and wellbeing, particularly during drought conditions. The additional water would be transferred to Selby Groundwater Option 2 for treatment and would increase the resilience and reliability of water supplies serving the wider network, including the Selby and Doncaster supply areas.	Negligible adverse	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There are no recreational areas or national trails in close proximity to the option. Construction activities associated with enabling works to improve borehole performance and the transfer capability of the existing rising main are therefore unlikely to affect recreational receptors or public access. No significant effects on recreation, amenity or access are anticipated during construction or operation.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Low	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Implementation of the drought option would contribute to maintaining water supply reliability during drought conditions through the provision of an estimated 3.2 Ml/d deployable output. Water would be transferred to Selby Groundwater Option 1 for treatment, supporting supplies across the wider network and increasing the resilience of water services for customers and economic activity. A secure and adaptable water supply is important for supporting public health and wellbeing, economic activity, housing and infrastructure development. By restoring capacity from an existing licensed groundwater source, the option would contribute to the resilience of the water supply system during periods of drought.	None	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Construction activities associated with enabling works to improve borehole performance and the transfer capability of the existing rising main between Selby Groundwater Option 2 and Selby Groundwater Option 1 may require the use of additional materials and generate construction waste. However, the option would make use of existing infrastructure and assets wherever feasible, limiting the requirement for new infrastructure and associated resource use. During operation, additional energy would be required for groundwater abstraction and pumping to enable increased deployment of the existing licensed quantity. Overall resource use and emissions are expected to remain relatively low due to the limited scale of the enabling works and the use of existing assets and transfer infrastructure.	Negligible adverse	None
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Small	Low	Short-term	Temporary	Low (beneficial)	Medium (adverse)	The option would increase deployment of an existing licensed groundwater resource through targeted improvements to borehole performance and transfer capacity, maximising the use of existing infrastructure and assets. By increasing deployable output by approximately 3.2 Ml/d and improving supply resilience, the scheme would support more efficient water resource management and help maintain water supplies during periods of increased demand and drought. This is assessed as a negligible beneficial effect. Construction requirements and operational energy demand are expected to be limited due to the relatively small scale of the works, reliance on existing infrastructure, and the modest increase in abstraction and pumping required to deliver the additional deployable output. Minor adverse effects are identified due to potential WFD compliance issues relating to water balance, which may affect the sustainable management of water resources	Minor adverse	Negligible beneficial

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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 To maintain or improve the quality of surface and groundwater resources	Small	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	A WFD compliance assessment completed as part of a different project identified the groundwater body as having potential to be affected during operation of the scheme. The scheme would restore utilisation of the existing borehole licence, increasing abstraction from current operational rates (approximately 10.4 Ml/d) to the licensed abstraction quantity of 13.7 Ml/d. While no increase in licensed abstraction is proposed, the additional abstraction could influence groundwater levels and flow patterns. The WFD assessment identified a potential risk of non-compliance for the groundwater body water balance element. Evidence from the WINEP investigation indicates that current abstraction rates are already close to the long-term average recharge available within the groundwater body, and abstraction at the licensed rate could exceed this recharge. The assessment also identified uncertain effects on the chemical status of the groundwater body, as changes in groundwater flows have the potential to exacerbate existing chemical pressures within a groundwater body currently classified as having poor chemical status. No significant effects were identified in relation to dependent surface water bodies, groundwater-dependent terrestrial ecosystems or saline intrusion. The assessment concluded that the groundwater body is unlikely to have a hydraulic connection with surface waters due to the depth of the groundwater level and the presence of low-permeability superficial deposits. Potential construction-phase pollution risks would be managed through standard good practice and pollution prevention measures. Overall, a minor adverse effect is anticipated for the water quality objective due to the uncertain potential for deterioration in groundwater chemical status. Potential construction-phase pollution risks would be managed through standard good practice and pollution prevention measures.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Medium	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The WFD compliance assessment identified the groundwater body as having the potential to be affected during operation of the scheme. The scheme would restore utilisation of the existing borehole licence, increasing abstraction from current operational levels (approximately 10.4 Ml/d) to the licensed abstraction quantity of 13.7 Ml/d. While no increase in licensed abstraction is proposed, the additional abstraction could influence groundwater levels and flow patterns within the groundwater body. The WFD compliance assessment identified a potential risk of non-compliance for the groundwater body water balance element. Evidence from the WINEP investigation indicates that abstraction at the licensed rate could exceed the long-term average recharge available within the groundwater body, which is currently at poor status for water balance. As a result, the scheme has the potential to adversely affect groundwater levels and flows and could contribute to a continued failure to achieve good status. However, no significant effects were identified in relation to dependent surface waters, groundwater-dependent terrestrial ecosystems or saline intrusion. The WFD assessment concluded that hydrological connectivity between the groundwater body and surface waters is unlikely due to the depth of the groundwater table and the presence of low-permeability superficial deposits; therefore, no significant effects on surface water levels or flows are anticipated.	Moderate adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Medium	Short-term	Temporary	Medium (beneficial)	Low (beneficial)	Abstraction would remain within the limits of an existing active licence, with the option enabling increased deployment of the existing groundwater source through works to improve borehole performance and the transfer capability to Selby Groundwater Option 1. The option would help to maintain water supplies during drought conditions whilst making use of existing licensed abstraction capacity. The option review identifies no surface water connections, no impacts on springs and only a low risk of short-term groundwater level effects. However, further investigation may be required to confirm the magnitude of groundwater drawdown and any potential effects on groundwater-dependent receptors and WFD objectives. Subject to operation within existing licence limits and regulatory controls, the option is expected to support the sustainable management of water resources whilst maintaining water supplies during drought conditions.	None	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Small	Low	Short-term	Temporary	Medium (beneficial)	Low (beneficial)	The option would enable increased deployment of the existing groundwater source through works to improve borehole performance and the transfer capability to Selby Groundwater Option 1. This would maximise the use of existing infrastructure and licensed abstraction capacity during drought conditions.	None	Minor beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Small	High	Short-term	Temporary	Low (adverse)	Low (adverse)	Works would be undertaken within the existing Selby Groundwater Option 2 borehole site and may also include temporary interventions along the existing rising main corridor to Selby Groundwater Option 1. The Selby Groundwater Option 2 site is located on Grade 3 agricultural land and four historic landfill sites are present within 1 km, although no works are proposed within these landfill areas. Temporary ground disturbance may occur as a result of enabling works to improve borehole performance and any access or construction requirements associated with works to improve the transfer capability of the existing rising main. However, effects on soils, geology and geomorphology are expected to be localised, temporary and reversible. Appropriate construction practices should be implemented to minimise soil disturbance, compaction and reinstatement requirements.	Negligible adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Small	High	Medium-term	Temporary	Low (adverse)	Low (adverse)	Construction activities would generate temporary emissions from construction plant, vehicle movements and dust; however, these effects would be localised, short-term and controlled through standard good practice measures. There are no Air Quality Management Areas (AQMAs) within 1 km of the Selby Groundwater Option 2 borehole site. During operation, vehicle movements would remain low and limited to routine maintenance activities. As the scheme comprises improvements to existing infrastructure and does not introduce any significant ongoing sources of air emissions, no significant long-term effects on air quality are anticipated.	Negligible adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Small	High	Medium-term	Temporary	Low (adverse)	Low (adverse)	Construction activities associated with enabling works to improve borehole performance and the transfer capability of the existing rising main between Selby Groundwater Option 2 and Selby Groundwater Option 1 would generate temporary greenhouse gas emissions associated with materials, plant, transport and construction activities. These emissions would be minimised through best practice construction methods. During operation, energy would be required for groundwater abstraction and pumping to support the approximately 3.2 Ml/d deployable output benefit. Additional emissions may also arise from routine maintenance activities. However, the option primarily utilises existing infrastructure and transfer assets, resulting in relatively low operational emissions. Consequently, the scheme is expected to result in a minor long-term adverse effect on greenhouse gas emissions.	Negligible adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Medium (beneficial)	The option would improve the resilience of water supplies during drought conditions, which are expected to become more frequent and severe as a result of climate change. By improving borehole performance and the transfer capability of the existing rising main to Selby Groundwater Option 1, the scheme would provide an estimated deployable output benefit of approximately 3.2 Ml/d. By enabling greater deployment of the existing licensed quantity of 13.7 Ml/d and maximising the use of existing infrastructure and licensed abstraction capacity, the scheme would support the long-term resilience of the water supply system to climate-related risks.	Negligible adverse	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Small	High	Short-term	Temporary	Low (adverse)	Low (adverse)	There are 7 listed buildings within 1km of the scheme construction, of which two listed buildings are located within 500m of the scheme. Construction activities associated with enabling works to improve borehole performance and the transfer capability of the existing rising main to Selby Groundwater Option 1 may give rise to temporary effects on the setting of nearby heritage assets through noise, dust, vibration and vehicle movements. However, any such effects would be localised, short-term and minimised through standard good practice construction measures. Ground disturbance associated with borehole performance improvements and any access or construction requirements associated with works to the existing rising main has the potential to affect previously unknown buried archaeological remains. Appropriate archaeological investigations and mitigation measures, such as a watching brief, may be required where excavation is proposed. Once operational, no adverse effects are anticipated.	Negligible adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	High	Short-term	Temporary	Low (adverse)	Low (adverse)	Temporary adverse effects on landscape character and visual amenity may occur during construction as a result of activities at the Selby Groundwater Option 2 borehole site and any temporary work areas required along the existing rising main corridor to Selby Groundwater Option 1. These effects would be localised, short-term and reversible, and would be mitigated through standard good practice construction measures and reinstatement of temporary working areas. During operation, the scheme would primarily comprise enabling works to improve borehole performance and the transfer capability of the existing rising main, with works largely associated with existing operational infrastructure. Consequently, permanent effects on landscape character, townscape or visual amenity are expected to be negligible.	Negligible adverse	None

Drought Plan Option Name: Selby Aquifer Storage and Recovery Scheme 1

Drought Plan Option Description: This option comprises recommissioning and automating the existing Selby Aquifer Storage and Recovery Scheme 1. Treated water derived from the River Derwent would be injected into an ASR borehole for storage and recovered during drought conditions. The option would utilise the existing ASR licence and is expected to provide approximately 4 to 5 Ml/d during drought conditions.

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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 To conserve 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	Low	Short-term	Temporary	Medium (adverse)	Medium (adverse)	The option comprises recommissioning and automating the existing Selby Aquifer Storage and Recovery Scheme 1. Construction works are likely to be small-scale and include replacement of the borehole pump, valves, pipework, MCC kiosk, telemetry, instrumentation, cabling and a new concrete slab. The option would primarily utilise existing infrastructure and an existing ASR borehole. A precautionary assessment has therefore been applied. There are several internationally designated sites within 10 km of the option, including an SAC (within the abstraction system), an SAC/SPA/Ramsar (approximately 2.6 km), an SAC/SPA/Ramsar (approximately 4.6 km), and an SAC (approximately 7.9 km). The option is hydrologically connected to an SAC and indirectly connected to a number of European sites via the River Derwent. There are also several nationally designated sites associated with the River Derwent corridor, including 5 SSSI's. There are no areas of ancient woodland within 1 km of the option. HRA screening identified potential impact pathways to an SAC through changes to hydrology and construction-related disturbance, pollution and sedimentation. Potential impact pathways were also identified to an SAC/SPA/Ramsar Site through hydrological connectivity with the River Derwent. The option would recharge and recover water through an existing ASR borehole using treated water derived from the River Derwent. The ASR output licence is due to expire in 2027 and may require renewal or amendment. Further assessment is required to confirm potential effects on hydrology and water-dependent designated sites; therefore, a precautionary assessment has been applied.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Low	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium (adverse) Low (beneficial)	There is potential for effects on water-dependent habitats and ecosystem services associated with nearby designated sites, particularly where these are linked to the River Derwent. The option requires recharge and recovery of water through the ASR scheme and may require licence renewal or amendment. Further assessment is required to understand potential hydrological effects. The scheme would increase the resilience of local water supplies by providing stored water during drought conditions. Due to the limited scale of construction works and use of existing infrastructure, significant habitat loss is not anticipated. Opportunities for habitat enhancement may arise through detailed design; however, biodiversity net gain (BNG) measures cannot be defined at this stage and have not been included in the assessment. There are no Nature Improvement Areas in close proximity to the option.	Minor adverse	Negligible beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Small	Low	Short-term	Temporary	Low (adverse)	Low (adverse)	The recharge and recovery of water through the aquifer storage and recovery (ASR) system may present a low risk of introducing or spreading invasive non-native species (INNS) if appropriate controls are not in place. As water would be treated at the site WTW before recharge and subsequent recovery, the risk is considered low. Appropriate biosecurity measures, together with an INNS risk assessment and management plan, should be implemented during both construction and operation to minimise the risk of introducing or spreading INNS.	Negligible adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	Construction activities associated with the scheme may result in temporary noise, dust and vibration effects. Given the limited scale of the works and use of an existing operational site, these effects are expected to be temporary and localised. Appropriate mitigation would be implemented through best practice construction methods. The option is expected to provide approximately 4 to 5 Ml/d during drought conditions, helping to maintain essential public water supplies and support public health and wellbeing. By storing treated water when surplus is available for later recovery during drought periods, the scheme would increase the resilience and reliability of the water supply system.	Minor adverse	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	The option requires only limited mechanical, electrical and control system upgrades at an existing operational site. Temporary disturbance may occur during installation works; however, no significant effects on recreation, access or local amenity are anticipated.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Low (adverse) Medium (beneficial)	Construction activities associated with the scheme may result in temporary disruption to site operations and local services. These effects are expected to be short term and localised. The option would provide approximately 4 to 5 Ml/d during drought conditions, helping to maintain reliable water supplies for households, businesses and essential services. By improving operational flexibility and enabling stored water to be recovered during periods of reduced water availability, the scheme would support community resilience and economic activity during drought conditions.	Negligible adverse	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	There is potential for effects on water-dependent habitats and ecosystem services associated with nearby designated sites, particularly where these are linked to the River Derwent. The option requires recharge and recovery of water through the ASR scheme and may require licence renewal or amendment. Further assessment is required to understand potential hydrological effects. The scheme would increase the resilience of local water supplies by providing stored water during drought conditions. Due to the limited scale of construction works and use of existing infrastructure, significant habitat loss is not anticipated. Opportunities for habitat enhancement may arise through detailed design; however, biodiversity net gain (BNG) measures cannot be defined at this stage and have not been included in the assessment. There are no Nature Improvement Areas in close proximity to the option.	Negligible adverse	None
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The option would utilise the existing ASR scheme to store treated water when surplus supplies are available and recover it during drought conditions. This would make efficient use of existing infrastructure, water resources and licensed capacity whilst helping to maintain water supplies for homes and businesses during periods of reduced water availability. Automation of the ASR system would improve operational flexibility and resource efficiency by reducing reliance on manual operation and enabling more effective management of stored water resources.	None	Moderate beneficial
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Small	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	This drought option would involve the recharge and recovery from the a groundwater Body. The groundwater body is currently classified as having poor overall status due to natural mineralisation.based on RNAG (2019). Water used for recharge would be derived from treated supplies sourced from the River Derwent. Whilst the scheme would operate within existing licensed arrangements, licence renewal or amendment may be required. Further assessment is necessary to determine the potential effects of groundwater recharge and abstraction on groundwater and surface water quality.	Minor adverse	None

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Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	This drought option would involve the recharge and abstraction from the groundwater body. The scheme is expected to provide a deployable output of approximately 4 to 5 Ml/d during drought conditions. The ASR scheme would operate using existing licensed arrangements; however, renewal or amendment of the ASR licence and potential changes to the River Derwent source licence may be required. Recharge would only occur when surplus water is available from the River Derwent. Further assessment is required to determine the potential effects of recharge and abstraction on groundwater levels, groundwater-surface water interactions and hydrological processes within connected water-dependent habitats. The significance of any impacts on water flows cannot currently be determined.	Minor adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	This option makes use of the existing ASR scheme to help maintain water supplies during drought conditions. There are no Flood Zone 2 or Flood Zone 3 areas in close proximity to the scheme. The option would involve the recharge and subsequent abstraction of water within the groundwater body using treated water derived from the River Derwent. Recharge would only occur when surplus water is available, and the stored water would be recovered during drought conditions. Further assessment is required to understand potential effects on hydrology, water-dependent ecosystems and designated sites, particularly given the identified hydrological connectivity to an SAC. The scheme would be operated in accordance with licence requirements and regulatory controls, including any licence renewal or amendments that may be required. Moderate beneficial effects are anticipated through improved drought resilience and more efficient use of available water resources. However, minor adverse effects may arise due to uncertainty regarding the potential hydrological effects of recharge and abstraction on connected water-dependent ecosystems.	None	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The option would promote more efficient use of available water resources by storing treated water when surplus supplies are available and recovering it during drought conditions. By making use of the existing ASR scheme, the option would increase operational flexibility and improve the sustainable management of water resources. Automation of the ASR system would support more efficient operation and management of stored water resources, helping to maximise the use of existing infrastructure and licensed capacity during periods of water stress.	None	Moderate beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Small	Medium	Medium-term	Temporary	Low (adverse)	Low (adverse)	The option would primarily utilise existing infrastructure, including the existing ASR borehole and associated assets. Limited construction works would be required. Given the small scale of works and use of an existing operational site, effects on land use and soils are expected to be minor and temporary. The scheme relies on recharge and abstraction within the groundwater body. No significant effects on geology or geomorphology are anticipated, as the option would utilise an existing borehole and existing infrastructure corridors. Standard good practice for soil handling and site reinstatement would be implemented where ground disturbance is required.	Negligible adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Small	Medium	Medium-term	Temporary	Medium (adverse)	Low (adverse)	Construction activities would generate temporary dust and vehicle emissions. Given the limited scale of the works and use of an existing operational site, these effects are expected to be localised and short term. During operation, additional energy would be required for water recharge, recovery and pumping activities associated with the ASR scheme. Minor adverse effects on air quality may arise indirectly through increased energy consumption; however, direct operational air emissions are expected to be negligible.	Minor adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Small	Medium	Medium-term	Temporary	Medium (adverse)	Low (adverse)	Construction activities would generate greenhouse gas emissions through the use of materials, plant and transport. However, these effects are expected to be limited given the relatively small scale of the works. During operation, additional energy would be required for groundwater recharge, recovery, pumping and operation of associated control systems. As a result, a minor increase in greenhouse gas emissions is anticipated. The use of renewable energy sources and the extent of further energy efficiency measures are not known at this stage. However, automation and remote monitoring may improve operational efficiency and optimise operation of the ASR system.	Minor adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The option would improve the resilience of water supplies during drought conditions by storing treated water when surplus supplies are available and recovering it during periods of reduced water availability. This approach would help address the increasing risk of drought associated with climate change and provide an estimated deployable output of 4 to 5 Ml/d. By increasing operational flexibility and making use of the existing ASR scheme, the option would diversify available water resources during drought conditions and improve the resilience of the wider water supply network.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Construction activities may result in limited ground disturbance. However, these works would be confined to an existing operational site and are unlikely to result in significant effects on heritage assets. Any potential effects on previously unidentified buried archaeological remains would be managed through standard good practice and, where required, appropriate archaeological investigation and mitigation measures. Given the limited scale of the works, no significant operational effects on heritage assets are anticipated.	Negligible adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Construction activities may result in temporary localised effects on visual amenity. However, these works would be undertaken within an existing operational site and are expected to be small in scale and short term. Once operational, the scheme would make use of existing infrastructure and the existing ASR borehole. The replacement infrastructure would be located within the existing site footprint and is not anticipated to result in significant long-term effects on landscape character or visual amenity.	Negligible adverse	None

Drought Plan Option Name: York Groundwater Option 1

Drought Plan Option Description: This option comprises recommissioning York Groundwater Option 1 and associated groundwater sources. Groundwater would be abstracted from the Sherwood Sandstone aquifer, with new boreholes likely to be required. The scheme would require renewal of assets, new treatment infrastructure and a new abstraction licence. The estimated deployable output during drought co

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Biodiversity, flora and fauna	1.1 To conserve 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	Low	Short-term	Permanent	Medium (adverse)	Medium (adverse)	This option comprises recommissioning York Groundwater Option 1 and associated groundwater sources, with works including drilling up to three new boreholes, installation of new pumps, MCC kiosks, telemetry, pipework, treatment infrastructure and associated connections. Land acquisition may be required at one of the sites. As the final borehole locations and extent of works are not yet confirmed, a precautionary assessment has been applied. There are no European sites within 10 km of the option; however, an SAC and a Ramsar Site are hydrologically connected with the wider catchment. A SSSI is located approximately 2.3 km from the option, and priority habitats including lowland fen, deciduous woodland and grassland occur within 500 m of the site. There are no Local Nature Reserves, National Nature Reserves or areas of ancient woodland within 500 m. HRA screening identified potential impact pathways to lamprey interest features associated with an SAC and Ramsar Site through construction-related pollution risks to the functionally linked River Ure, and potential in-combination operational effects associated with groundwater abstraction. Further assessment is therefore required to understand potential effects on designated sites, protected species and hydrological processes. A precautionary moderate adverse effect is anticipated.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	The scheme would improve the resilience of local water supplies during drought conditions through recommissioning of groundwater sources and associated treatment infrastructure. However, there is potential for effects on water-dependent ecosystem services and natural capital assets associated with groundwater abstraction and hydrological change. Further assessment is required to understand potential effects on the functionally linked River Ure and associated ecological receptors. The scheme may require new boreholes, land acquisition, treatment infrastructure and associated assets. At this stage, the scale and location of any biodiversity enhancement or biodiversity net gain (BNG) measures cannot be defined and remain subject to further design development. Potential BNG benefits have therefore not been included in the assessment.	Minor adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Small	High	Short-term	Permanent	Low (adverse)	Low (adverse)	Construction activities may result in a low risk of introducing or spreading invasive non-native species (INNS) through vehicle movements, ground disturbance and the transfer of materials between sites. During operation, there is a low risk of introducing or spreading aquatic INNS through groundwater abstraction and treatment activities. Abstracted water would be directed through the treatment process at Marton WTW, reducing the likelihood of transfer. It is not anticipated that the option would result in the introduction or spread of INNS where good practice is implemented. Appropriate mitigation measures should be adopted, including pre-construction surveys where required, biosecurity controls, and the identification, treatment or removal of INNS prior to construction and disposal activities.	Negligible adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	High	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Medium (beneficial)	Construction activities may give rise to temporary dust, noise and vibration effects. During drought conditions, recommissioning York Groundwater Option 1 and the associated groundwater sources would help maintain a resilient public water supply through the provision of approximately 4 Ml/d. This would support public health and wellbeing by maintaining reliable access to potable water during periods of reduced water availability.	Negligible adverse	Minor beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	High	Short-term	Permanent	Low (adverse)	Low (adverse)	Construction activities may result in temporary adverse effects on local amenity through noise, dust, traffic and visual disturbance. Temporary disruption to access and services may also occur during construction. Given the location of the scheme and the nature of the proposed works, no significant effects on formal or informal recreation are anticipated. No operational effects on recreation and access are expected following completion of the works.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Low	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Medium (beneficial)	Construction activities may create short-term local employment opportunities and support local procurement. Temporary adverse effects may arise from construction traffic, noise, dust and disruption to access or local economic activities. The option would provide an estimated deployable output of 4 Ml/d during drought conditions, helping to maintain water supplies to homes, businesses and essential services. By increasing the resilience and reliability of the water supply network, the scheme would support local communities and economic activity during periods of water stress.	Negligible adverse	Minor beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Permanent	Medium (adverse)	Low (adverse)	Construction activities associated with the drilling of new boreholes, installation of new treatment infrastructure, pumps, MCC kiosks, telemetry, pipework, contact tanks and associated assets would require additional materials and generate construction waste. The scheme would make use of existing WTW and pipeline infrastructure where feasible. During operation, ongoing resource requirements would include energy consumption for groundwater abstraction, pumping, treatment and monitoring activities, together with periodic maintenance, repair and replacement of infrastructure and treatment components.	Minor adverse	None
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Small	Medium	Medium-term	Permanent	Low (beneficial)	Medium (beneficial)	The scheme would enhance water resource management by recommissioning groundwater sources and associated treatment infrastructure to provide an additional 4 Ml/d during drought conditions. By restoring previously decommissioned assets and increasing the availability of local water resources, the option would help maintain water supplies for homes, businesses and essential services during periods of water stress.	None	Minor beneficial
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Small	Medium	Short-term	Temporary	Low (adverse)	Medium (adverse)	Construction activities associated with the scheme may give rise to temporary pollution risks if not appropriately managed. Abstraction would be from a WFD groundwater body, which is currently classified as having poor overall status. A new abstraction licence and groundwater investigation consent would be required. Further assessment is necessary to determine the potential effects of the proposed abstraction regime on groundwater quality, other users and downstream receptors. The source was previously decommissioned due to water quality issues, including hardness, iron and manganese, and treatment would be required to meet current drinking water standards. The proposed scheme includes lime dosing, pressure filtration and chlorination to address these historical water quality constraints. York Groundwater Option 1 site is located within 500 m of a Nitrate Vulnerable Zone (NVZ). Further investigation and water quality monitoring would be required to confirm current groundwater quality and treatment requirements.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Construction activities associated with borehole drilling, treatment infrastructure and associated works may present temporary risks to surface water and groundwater receptors if not appropriately managed. Abstraction would be from a WFD groundwater body (poor overall status). A new abstraction licence and groundwater investigation consent would be required, and a full environmental investigation is likely to be necessary. Further information on proposed abstraction volumes, groundwater availability and borehole yields would be required before the effects on groundwater resources and hydrology can be assessed.	Negligible adverse	None

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Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Medium (beneficial)	The scheme would provide approximately 4 Ml/d during drought conditions through the recommissioning of groundwater sources and associated treatment infrastructure. A new abstraction licence and groundwater investigation consent would be required prior to implementation. Further investigation and environmental assessment would be required to demonstrate that abstraction can be managed sustainably and without unacceptable effects on groundwater resources, connected ecosystems or other water users. Subject to appropriate licensing and regulatory controls, the option would contribute to maintaining water supplies during periods of drought whilst supporting the sustainable management of water resources.	Negligible adverse	Minor beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	The scheme would improve operational flexibility by restoring groundwater sources and associated treatment infrastructure that are currently out of service. By increasing the availability of water during drought conditions, the option would support more efficient and resilient management of available water resources.	None	Minor beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Small	High	Short-term	Temporary	Medium (adverse)	Low (adverse)	The scheme would require new borehole drilling, construction of treatment infrastructure, installation of pumps, MCC kiosks, pipework, contact tanks and associated assets. Temporary effects on land use and soils may arise through ground disturbance, excavation, compaction, erosion and accidental contamination during construction. Land acquisition may also be required at another site depending on the final borehole locations. The option would make use of existing WTW and pipeline infrastructure where feasible; however, new infrastructure and connections would be required to recommission the source. Standard good practice measures for soil management, storage and reinstatement would be implemented during construction.	Minor adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Small	Medium	Medium-term	Temporary	Low (adverse)	Low (adverse)	Construction activities may result in temporary dust generation, vehicle emissions and other short-term air quality effects. These impacts would be managed through standard construction good practice. During operation, additional energy would be required for groundwater abstraction, pumping and water treatment processes. This may result in a minor indirect increase in air pollutant emissions associated with electricity consumption; however, no significant operational effects on local air quality are anticipated. There are no AQMAs in close proximity to the scheme.	Negligible adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Small	Medium	Medium-term	Temporary	Low (adverse)	Low (adverse)	Construction activities may result in temporary greenhouse gas emissions. These impacts would be managed through standard construction good practice. During operation, additional emissions may result from the electricity needed for groundwater abstraction, pumping and water treatment processes, however, no significant operational effects on air and climate are anticipated.	Negligible adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	Drought plan options are a key component of Yorkshire Water's Drought Plan. The scheme is expected to provide approximately 4 Ml/d during drought conditions, helping to maintain reliable water supplies to customers and increasing operational flexibility within the wider water supply network. By diversifying available water sources, the option would make a minor beneficial contribution to long-term water supply resilience, at a time when droughts are expected to become more frequent and severe as a result of climate change.	None	Minor beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Small	Medium	Medium-term	Temporary	Low (adverse)	Low (adverse)	There are two listed buildings within 1km of the site (approx 950 m north-northwest of the site), but no scheduled monuments or World Heritage sites. Construction activities may result in temporary effects on the setting of nearby heritage assets through noise, dust, vibration and vehicle movements. These effects are expected to be localised and temporary and would be reduced through standard good practice construction measures. Ground disturbance associated with new boreholes, foundations, pipework and associated infrastructure has the potential to affect previously unidentified buried archaeological remains. This risk would be further assessed through desk-based studies and, where required, archaeological investigation, surveys and mitigation measures such as a watching brief during construction. No significant operational effects on heritage assets are anticipated.	Negligible adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	Temporary effects on landscape character and visual amenity may occur during construction as a result of construction activities, plant, vehicle movements and materials storage. Localised permanent visual changes may also arise from the introduction of new above-ground infrastructure, particularly where new boreholes or land acquisition are required. The sites are not located within or adjacent to any nationally designated landscapes. Whilst further assessment will be required once the final layout is confirmed, significant effects on landscape character are not anticipated.	Negligible adverse	None

Drought Plan Option Name: Optimisation of York WTW 2

Drought Plan Option Description: The proposed solution is to increase the capacity of York WTW 2 which is currently capped at approximately 223 Ml/d, due to GAC contact time. The plant is capable of 270 Ml/d. The proposed scheme would optimise York WTW 2 throughput by upgrading the high-lift pumps at the works and adding GAC beds. The likely benefit during a drought is 47 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 To conserve 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	Permanent	Medium (adverse)	Medium (adverse)	There are 7 SSSI's and 1 SPA/SAC located within 10km of the proposed site. There are no Ramsar sites within 10km. The proposed works would largely be confined to the existing treatment works and associated operational land, limiting direct habitat loss. However, the close proximity of internationally designated sites and associated habitats creates potential pathways for disturbance during construction through noise, vibration, dust and pollution incidents. Functionally linked habitat, including areas of grazing marsh and lowland meadow adjacent to the works, may also support qualifying SPA and Ramsar bird species. There is also potential for temporary disturbance to protected and notable species associated with the River Derwent corridor, including fish, birds, bats, otter, water vole, reptiles and great crested newts. Whilst best-practice construction techniques would reduce risks, some uncertainty remains regarding the presence and sensitivity of these receptors. During operation, the scheme could facilitate an increase in abstraction from the River Derwent of up to 47 Ml/d during drought conditions, subject to permitting requirements. Changes to flows and hydrology may affect aquatic habitats, qualifying SAC features and associated SPA, Ramsar and wetland habitats. The HRA identifies likely significant effects on an SPA/SAC/Ramsar and an SAC pending further assessment. Consequently, a potentially moderate significant adverse effect on biodiversity, flora and fauna is identified.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Short term	Temporary	Medium (adverse) Low (beneficial)	Medium (adverse) Low (beneficial)	Construction activities associated with the optimisation works, including installation of additional GAC beds and pump upgrades, may result in minor localised effects on natural capital and ecosystem services. As works are expected to be largely confined to existing operational land within the treatment works, direct habitat loss is anticipated to be limited. However, the option has the potential to affect water-dependent habitats and ecosystem services associated with a number of European designated sites through changes to abstraction rates and hydrological conditions during drought operation. Further HRA assessment is required to determine the nature and significance of these effects. Opportunities for habitat enhancement and Biodiversity Net Gain are likely to be limited due to the works being primarily contained within existing operational land. At this stage, the scale and location of any enhancement measures remain uncertain and have therefore not been included within the assessment. There are no Nature Improvement Areas within 10 km of the scheme. The proposed scheme supports water supply resilience through the optimisation of existing infrastructure and treatment capacity.	Moderate adverse	Negligible beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Medium	Medium	Short term	Permanent	Low (adverse)	Medium (adverse)	There is a small risk of spreading terrestrial INNS through construction. Mitigation measures will be in place to minimise risk, including the identification, removal, or treatment of INNS prior to construction waste disposal. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented. During operation, the scheme does not introduce new abstraction pathways and therefore does not present a risk of INNS spread.	Minor adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	Medium	Short term	Temporary	Medium (adverse) High (beneficial)	Low (adverse) Medium (beneficial)	Given the scale of the works proposed and the proposed location, minor dust, noise, traffic and vibration impacts are likely. Best construction practices will be used to minimise disruption. The drought option would deliver up to 47 Ml/d, helping to maintain essential public water supplies during drought conditions and therefore help to maintain public health and well-being.	Minor adverse	Major beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Medium	Short term	Temporary	Low (adverse)	Low (adverse)	Minor, short-term disturbance to local tranquillity and access during construction may slightly affect nearby walkers, anglers or other recreational users, and any effects are expected to be negligible.	Negligible adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Medium	Short term	Temporary	Low (adverse) High (beneficial)	Low (adverse) Medium (beneficial)	There may be temporary disruptions of services or access/disturbance during the construction phase. The scheme may provide short-term local employment opportunities during the construction phase and stimulate local procurement. The option will contribute up to 47 Ml/d to the maintenance of supply reliability in drought conditions, ensuring a resilient supply for customers and economic activity. However, increased operational energy use may increase operational costs which may be passed onto customers.	Negligible adverse	Major beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Medium	High	Short term	Temporary	Medium (adverse)	Medium (adverse)	The optimisation works would require a moderate quantity of construction materials and generate some construction waste associated with the installation of additional GAC beds and upgrades to existing pumping infrastructure. However, impacts are reduced through the optimisation and upgrading of existing assets rather than the construction of substantial new infrastructure. Operational energy and resource use would increase as a result of higher treatment throughput and additional GAC capacity. The option review notes that pump upgrades may sacrifice some energy efficiency to increase throughput. However, optimisation of pumping infrastructure, control systems and treatment processes may help reduce unnecessary resource consumption over time.	Moderate adverse	None
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Medium	Medium	Short term	Temporary	Medium (adverse) High (beneficial)	Low (adverse) Medium (beneficial)	The scheme optimises existing treatment and pumping infrastructure at the WTW, improving the efficiency and reliability of water production using an existing abstraction licence. Construction waste would be generated and managed in accordance with standard construction waste protocols. By increasing treatment capacity and enhancing operational flexibility, the scheme supports sustainable water resource management and helps maintain resilient water supplies for homes, industry, and the wider regional network, without introducing significant new abstraction pressures. Pipeline testing and hydraulic assessment are required to confirm the final achievable capacity.	Minor adverse	Major beneficial
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Medium	Medium	Short term	Temporary	Low (adverse)	Medium (adverse)	Any construction-phase risks to water quality, such as sediment mobilisation, accidental spills or contamination incidents, would be managed through standard best-practice construction and pollution prevention measures. Given the proximity of the internationally designated sites associated with the River Derwent, careful management of construction activities would be required. The scheme is not expected to significantly affect surface or groundwater quality. The scheme involves adding GAC beds to maintain the required contact time and compliance standards. Any discharge must be within permit conditions.	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/ 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 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Short term	Temporary	Medium (adverse)	Medium (adverse)	The scheme would utilise the existing River Derwent intake and optimise treatment and pumping infrastructure at the WTW. However, operation of the option could facilitate an increase in abstraction of up to 47 Ml/d during drought conditions, subject to any required drought permit and environmental approvals. As a result, there is potential for changes to river flows and hydrological conditions within the River Derwent and associated water-dependent habitats. The HRA has identified potential hydrological impact pathways affecting European designated sites and further assessment is required to determine the magnitude of any effects on water levels and flows.	Moderate adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Low	Short term	Temporary	Low (adverse) High (beneficial)	Medium (adverse) Medium (beneficial)	The scheme would improve drought resilience by increasing treatment capacity and operational flexibility at the WTW, enabling greater use of existing infrastructure and increasing deployable output during drought conditions. Any increase in abstraction beyond existing licence limits would require a temporary drought permit and environmental assessment. Operational controls, abstraction licensing requirements and environmental permitting would be used to help protect water-dependent ecosystems and support compliance with environmental objectives, including those of the Water Framework Directive.	Minor adverse	Major beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Medium	Short term	Temporary	Low (beneficial)	Medium (beneficial)	By improving operational flexibility and maximising the use of existing licensed abstraction, the scheme may indirectly support more sustainable water resource management. If implemented as part of a broader drought response, it will be accompanied by public conservation campaigns to encourage efficient water use and increase awareness of water's value.	None	Minor beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short term	Temporary	Low (adverse)	Low (adverse)	The scheme is located within an existing WTW and pumping station footprint. Construction works are expected to occur within previously developed sites. Minor short-term ground disturbance may occur during construction, but no impacts on geologically sensitive sites are anticipated. No loss of agricultural land is anticipated.	Negligible adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Medium	Medium	Short term	Temporary	Low (adverse)	Medium (adverse)	Although the WTW lies several miles outside York's designated AQMAs, construction traffic and on-site activity could still cause minor, temporary localised reductions in air quality; however, these would be mitigated through standard best-practice dust and emissions controls, resulting in only minor residual effects. During operation, increased pumping and treatment throughput would slightly raise energy demand, leading to a small proportional increase in indirect emissions from grid electricity, though overall air-quality impacts are expected to remain low.	Minor adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Medium	Medium	Short term	Temporary	Low (adverse)	Medium (adverse)	Construction would generate GHG emissions associated with materials, plant and transport. The optimisation works, particularly the installation of higher-capacity pump impellers that deliberately sacrifice efficiency for increased throughput, would lead to an overall rise in energy consumption during operation. As a result, the scheme is expected to generate a minor to moderate increase in greenhouse-gas emissions compared with current operations, although impacts remain lower than those associated with constructing a new treatment works.	Minor adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	Medium	Short term	Temporary	High (beneficial)	Medium (beneficial)	The Plan aims to ensure resilience of water supplies to drought which may become more prevalent due to climate change by optimising the WTW. Enhancing the availability of this existing source strengthens the reliability of water supplies for the local area and provides additional support to the wider regional network during periods of high demand or drought.	None	Major beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Medium	Medium	Short term	Temporary	Low (adverse)	Low (adverse)	Construction work has the potential to disturb unknown buried assets. Works are expected to occur within an existing developed site with low potential for designated heritage assets or unknown archaeological remains. However, this would be further evaluated by desk studies and other investigations prior to construction. A watching brief, surveys and investigations may be implemented during construction if required to reduce the risk of adverse impact to any unknown heritage assets.	Negligible adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	High	Short term	Temporary	Low (adverse)	Medium (adverse)	There are no National Landscapes or National Parks within 10km. The upgrade of the WTW would have a temporary minor adverse impact on visual amenity of the surrounding countryside. Minor long-term visual effects may arise from the presence of additional treatment infrastructure, including any new GAC cells, although these would be viewed in the context of an existing operational water treatment works and are therefore expected to be localised.	Minor adverse	None

Drought Plan Option Name: Mobile Package Plants (Desalination, Micro-filtration or Ultrafiltration)

Drought Plan Option Description: This option considers the deployment of mobile, plug-and-play package treatment plants for use with a variety of small surface water or groundwater sources to provide additional supplies during extreme drought conditions. Potential treatment technologies include ion exchange, granular activated carbon (GAC) and reverse osmosis (RO) desalination, allowing the treatment of sources affected by nitrates, pesticides, salinity and other water quality constraints. Package plants are typically capable of treating 1.5-2 Ml/d per container and can be deployed in clusters to provide up to 7 Ml/d of treated water for direct supply to an existing main, service reservoir or treated water storage location. Some temporary pipework connections, site preparation works and waste management infrastructure may be required, although tankering could also be used where appropriate.

Potential locations for use of package plans include:
- Hull/Wolds BHs
- Goosehouse (pesticide treatment)
- Mobile desalination solutions for constrained coastal supply areas

SEA topics and objectives		Assessment of option								
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Biodiversity, flora and fauna	1.1 To conserve 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	Low	Short term	Temporary	Low (adverse)	Medium (adverse)	The scale of works is expected to be small and largely temporary, comprising mobile treatment units, associated pipework connections, hardstanding, waste storage infrastructure and site preparation works. New licences, permits and regulatory approvals may be required depending on the treatment technology and deployment location. Potential deployment sites include Hull/Wolds BHs and Goosehouse, whilst mobile desalination may be used in constrained coastal supply areas. The environmental sensitivity of individual sites would vary and would need to be assessed on a site-specific basis prior to deployment. Potential effects could arise from temporary construction activities, increased vehicle movements, wastewater management requirements and disturbance to habitats and species associated with the selected site. Due to the uncertainty regarding the location, treatment type, deployment scale and receiving environment of future mobile package plant installations, a precautionary approach has been adopted. Whilst effects are expected to be localised and temporary, a minor adverse effect has been identified to reflect the potential for impacts on biodiversity receptors at sensitive deployment sites.	Minor adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Small	Low	Short term	Temporary	Low (adverse) Low (beneficial)	Medium (adverse) Low (beneficial)	The example sites at Hull/Wolds BHs and Goosehouse support priority habitats within the surrounding area. However, the final deployment locations, treatment technologies and associated infrastructure requirements for mobile package plants are currently unknown and would be subject to future site selection and environmental assessment. Temporary disruption to ecosystem services may occur through site preparation works, pipework connections, waste management activities and vehicle movements; however, the mobile and reversible nature of the infrastructure is expected to limit long-term effects on natural capital and ecosystem services. Depending on the final deployment location and extent of temporary works, there may be limited opportunities for habitat enhancement and compensatory planting. At this stage, the location, scale and design of any Biodiversity Net Gain measures remain uncertain and have therefore not been included within the assessment. Due to the uncertainty regarding future deployment locations and treatment requirements, a precautionary approach has been adopted and a minor adverse effect has been identified.	Minor adverse	Negligible beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Small	Low	Short term	Temporary	Low (adverse)	Low (adverse)	There is a small risk of spreading terrestrial INNS. Mitigation measures will be in place to minimise risk, including the identification, removal, or treatment of INNS prior to construction waste disposal. During operation, intake systems may entrain aquatic organisms. Abstracting and discharging water within the same catchment (especially when functionally linked to designated sites) may pose INNS risks if proper controls aren't in place. There is a low risk of introducing or spreading invasive non-native species (INNS) during the operation of the scheme, given that abstracted water will be directed through treatment works/ processes. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	Negligible adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Small	Low	Short term	Temporary	Low (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	Temporary impacts on health and wellbeing could arise during the deployment of mobile treatment units through construction activity, vehicle movements, noise and operational processes such as waste tankering. At the example sites at Hull/Wolds BHs and Goosehouse, the extent of any effects on nearby receptors would depend on the final layout, operational requirements and surrounding land uses. Given the relatively small scale and temporary nature of the infrastructure, any adverse effects are expected to be localised and short-term. Best-practice construction and operational management measures would be implemented to minimise disturbance. The option would improve the resilience of public water supplies during drought conditions by enabling the deployment of mobile treatment systems capable of providing up to 7 Ml/d of treated water, helping to maintain supplies in areas affected by water quality constraints or local supply pressures. The location of any future deployments beyond the example sites is currently uncertain and would be subject to site-specific assessment. Overall, a moderate beneficial effect is anticipated.	Minor adverse	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Small	Low	Short term	Temporary	Low (adverse)	Medium (adverse)	Temporary disturbance to recreational receptors could occur during the deployment, operation and removal of mobile treatment units as a result of construction activity, vehicle movements and tankering operations. At the example sites assessed, any effects on public access, recreation and local amenity are expected to be localised and short-term due to the relatively small scale of the infrastructure and limited site preparation works. Access to recreational assets could be temporarily affected where deployment occurs close to public rights of way or other recreational resources. However, best-practice construction management measures would be implemented and, where required, suitable diversions or access arrangements would be provided to minimise disruption. The location of future deployments beyond the example sites is currently unknown and would be subject to site-specific assessment. Therefore, a precautionary approach has been adopted and a minor adverse effect has been identified.	Minor adverse	None
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Small	Low	Short term	Temporary	Low (adverse) Medium (beneficial)	Low (adverse) Medium (beneficial)	There may be temporary disruption to local access, services or activities during deployment of the mobile treatment units, associated infrastructure and any tankering operations. The scheme may also provide short-term employment opportunities and support local procurement during installation, operation and removal of the treatment systems. Implementation of the option would contribute to maintaining water supply reliability during drought conditions through the provision of up to 7 Ml/d of additional treated water capacity. Mobile package plants could be deployed to address local water quality constraints and improve resilience in areas experiencing supply pressures, thereby supporting customers, communities and economic activity during drought conditions.	Negligible adverse	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Low	Short term	Temporary	Medium (adverse)	Low (adverse)	New licences, permits or approvals may be required depending on the treatment technology and deployment location. The modular and prefabricated nature of the mobile treatment units would reduce the need for extensive construction works and associated material use. Waste generation is expected to be relatively low; however, treatment processes may generate waste streams requiring management and disposal. These could include brine from ion exchange systems, backwash water from GAC units, spent treatment media and, for reverse osmosis applications, concentrated waste streams. Appropriate waste storage, tankering and disposal arrangements would be required. The option would support the continued use of existing water sources during drought conditions and help maintain essential public water supplies through targeted water quality treatment. Minor adverse effect is anticipated due to additional resource consumption, chemical use and waste generation associated with mobile treatment processes	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/ 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 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Small	Low	Short term	Temporary	Low (adverse) Medium (beneficial)	Low (adverse) Medium (beneficial)	New licenses or approvals would be required. Construction waste would be generated and managed in accordance with standard construction waste protocols. The option would support the sustainable management of water resources by enabling the use of existing groundwater and surface water sources that are currently constrained by water quality issues, including nitrates, pesticides or salinity. Mobile treatment systems could provide up to 7 Ml/d of additional treated water during drought conditions, helping to maintain resilient supplies to homes, businesses and local communities Due to the temporary and flexible nature of the infrastructure, the option is expected to have a moderate beneficial effect on water resource management and supply resilience	Negligible adverse	Moderate beneficial
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Small	Low	Short term	Temporary	Low (adverse)	Medium (adverse)	Water quality effects will depend on the final deployment location, treatment technology and operational arrangements. At the example sites at Hull/Wolds and Goosehouse, mobile treatment units are intended to address existing water quality constraints associated with nitrates and pesticides respectively, thereby supporting the continued use of existing sources during drought conditions. Temporary construction and installation activities could give rise to minor localised risks to surface water or groundwater quality. However, these effects are expected to be managed through standard pollution prevention measures, permitting requirements and best-practice construction methods. Depending on the treatment process employed, operational activities may generate waste streams such as brine, concentrate or backwash water, which would require appropriate management and disposal arrangements. New licences, permits or approvals may also be required. With appropriate controls in place, significant effects on surface or groundwater quality are not anticipated.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Small	Low	Short term	Temporary	Low (adverse)	Medium (adverse)	The deployment of mobile package plants is not expected to require substantial new abstraction volumes and would primarily facilitate the treatment and use of existing water sources affected by water quality constraints. At the example sites at Hull/Wolds and Goosehouse, the objective is to maximise the use of existing sources rather than significantly increase abstraction. New licences, permits or approvals may be required depending on the source, deployment location and operational arrangements. Temporary abstraction, treatment and discharge activities could result in localised effects on water levels and flows; however, given the relatively small treatment capacities involved (typically 1.5-2 Ml/d per unit and up to 7 Ml/d in clustered deployment), significant alterations to hydrological conditions are not anticipated.	Minor adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Small	Low	Short term	Temporary	Low (adverse) Medium (beneficial)	Low (adverse) Medium (beneficial)	Operational controls, permitting requirements and any necessary drought authorisations would be used to ensure abstraction, treatment and discharge activities remain environmentally appropriate and support compliance with relevant environmental objectives, including the Water Framework Directive. Appropriate safeguards would also be required to protect sensitive water-dependent ecosystems where present. This option is designed to maintain water supplies (up to 7Ml/d) and is not optimised for sustainable management of abstractions. Further investigation would be needed to ascertain any effect on ecosystem services or WFD compliance. The mobile and temporary nature of the infrastructure provides flexibility and limits long-term effects on water resources. However, the final deployment locations, source waters and operational arrangements remain uncertain and would require site-specific assessment to determine any effects on ecosystem services, hydrology and WFD objectives. The drought option would be implemented alongside wider drought management measures, including water conservation campaigns to promote efficient water use and safeguard water resources during drought conditions	Negligible adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Small	Low	Short term	Temporary	Medium (beneficial)	Low (beneficial)	By improving operational flexibility and enabling the temporary treatment of water sources constrained by water quality issues, the scheme may indirectly support more sustainable water resource management. If implemented as part of a broader drought response, it will be accompanied by public conservation campaigns to encourage efficient water use and increase awareness of water's value.	None	Minor beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Small	Low	Short term	Temporary	Low (adverse)	Low (adverse)	The deployment of mobile treatment units would require limited site preparation works, including temporary hardstanding, pipework connections and ancillary infrastructure. At the example sites assessed, land take is expected to be small and largely reversible following decommissioning of the mobile treatment facilities. Minor short-term disturbance to soils may occur during installation and removal of the treatment units; however, the temporary and modular nature of the infrastructure reduces the potential for significant effects on soils, land use or geodiversity. No substantial permanent land take is anticipated.	Negligible adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Small	Low	Short term	Temporary	Low (adverse)	Low (adverse)	Temporary air quality effects may arise from site preparation works, vehicle movements, deployment activities and waste tankering associated with the installation and operation of mobile treatment units. Given the relatively small scale and temporary nature of the infrastructure, any air quality impacts are expected to be localised and short term. Appropriate dust suppression and construction management measures would be implemented where required. During operation, additional energy would be required for treatment processes, pumping and associated ancillary equipment. Depending on the treatment technology employed, waste tankering and periodic maintenance activities may also result in minor vehicle emissions. However, no significant effects on local air quality are anticipated.	Negligible adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Small	Low	Short term	Temporary	Low (adverse)	Low (adverse)	Construction work and vehicle movements associated with the construction phase may give rise to temporary GHG emissions over the short term, but these will be minimised through best construction practices. During operation, additional energy would be required for treatment processes, pumping and ancillary equipment. The extent of operational greenhouse gas emissions would depend on the treatment technology deployed, with reverse osmosis likely to have higher energy requirements than ion exchange or GAC treatment. The use of renewable energy sources and energy-efficient equipment is currently unknown. Overall, a minor increase in greenhouse gas emissions is anticipated.	Negligible adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Small	Low	Short term	Temporary	Medium (beneficial)	Medium (beneficial)	The scale of this scheme would deliver up to 7Ml/d beneficial contribution to securing a resilient water supply in the longer term to help meet the challenges of potential climate change impact on water supply reliability. The drought option allows YW to diversify its water sources under drought conditions.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Small	Low	Short term	Temporary	Low (adverse)	Medium (adverse)	The deployment of mobile treatment units may have the potential to affect the setting of nearby heritage assets through temporary construction activity, vehicle movements and the presence of containerised treatment infrastructure. However, the scale of works is expected to be limited and the infrastructure would be temporary and reversible. The use of modular, containerised and demountable treatment units would help to limit impacts on the historic environment. Due to the uncertainty regarding future deployment locations, a precautionary approach has been adopted and a minor adverse effect has been identified.	Minor adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Small	Low	Short term	Temporary	Low (adverse)	Low (adverse)	Landscape and visual effects will depend on the final deployment location and treatment configuration. The mobile treatment units would comprise containerised, temporary infrastructure requiring limited site preparation works, temporary pipework connections and ancillary equipment. Given the small scale, temporary nature and reversibility of the infrastructure, significant effects on landscape character and visual amenity are not anticipated. Any visual impacts are expected to be localised and temporary and would reduce following removal of the treatment units and reinstatement of the site.	Negligible adverse	None

Drought Plan Option Name: **Transfers**

Drought Plan Option Description: **In an extreme drought, water could be transferred within YWS' supply area to support customers at risk of running out, where network limitations prevent support from other assets and WTWs across the company area.**

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 To conserve 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	Low	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	No construction of new infrastructure is associated with this option. The option involves operational transfers within the existing network. Indirect effects may arise if increased abstraction or changes to operations are required to facilitate the transfers. Any changes would remain within licensed limits and existing environmental permit controls.	Negligible adverse	Negligible beneficial
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Low	Short-term	Temporary	Low (beneficial)	Low (beneficial)	No construction of new infrastructure or land use change is associated with this option. 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 options supports more efficient use of existing water resources during extreme drought by redistributing the supply.	None	Negligible beneficial
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Medium	Medium	Short-term	Temporary	Low (adverse)	Low (adverse)	As the option relies on existing infrastructure and does not introduce new abstraction points or sources, the risk of spreading INNS is negligible.	Negligible adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Large	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium (adverse) Medium (beneficial)	Transfers are likely to have an overall beneficial effect on health and wellbeing by helping maintain reliable water supplies during drought and improving the spatial distribution of available water. This enables the company to redirect supplies to areas that are more vulnerable under drought conditions, reducing pressure on environmentally sensitive sources and enhances resilience. However, there are potential adverse effects if transfers affect the flows/water quality of local rivers, wetlands or recreational waters, or if water quality risks are not fully controlled through environmental assessments and operational regimes.	Minor adverse	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Low	Short-term	Temporary	Low (adverse) Low (beneficial)	Low (adverse) Low (beneficial)	Transfers may help protect recreational opportunities during drought by maintaining water in levels in rivers and lakes. However, transfers can also have localised adverse effects where they change water levels or flows, potentially reducing the quality of angling, boating, bathing, and water access.	Negligible adverse	Negligible beneficial
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Low	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	By maintaining water supply to households and businesses during extreme drought, the option supports economic stability and community resilience.	None	Moderate beneficial
Material assets and resource use	3.1 To minimise waste, promote resource efficiency and move towards a circular economy.	Small	Medium	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	The option aims to be resource-efficient by utilising existing infrastructure where possible. However, additional pumping or operational changes may increase energy consumption.	Minor adverse	Minor beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	This drought option would enhance the efficiency of water resource management to support the maintenance of essential public water supplies during drought conditions.	None	Moderate beneficial
Water	4.1 To maintain or improve the quality of surface and groundwater resources	Medium	Low	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	Transfers could help protect water quality in receiving areas by reducing pressure on stressed sources during drought, but they also introduce risks where transferred water differs in quality, or where new pipelines and operational changes create potential for pollution incidents or sediment disturbance. Water quality risks would be managed through existing licenses.	Minor adverse	Minor beneficial
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Low	Short-term	Temporary	Low (adverse) Low (beneficial)	Medium (adverse) Medium (beneficial)	Transfers can help protect groundwater and surface-water levels in receiving areas by reducing reliance on stressed local sources during drought. Transfers can alter natural flow regimes, particularly where bulk supply movements are significant, but would remain within existing consented limits.	Minor adverse	Minor beneficial
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Short-term	Temporary	Low (adverse) High (beneficial)	Medium (adverse) Medium (beneficial)	Transfers can support sustainable abstraction management by reducing pressure on locally stressed sources and helping maintain essential public water supplies, but they may also alter flow regimes in ways that affect ecosystem function. The movement of different water types requires careful regulation and monitoring to ensure compliance with WFD objectives and avoid adverse ecological effects.	Minor adverse	Moderate beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Medium	Short-term	Temporary	Low (beneficial)	Medium (beneficial)	While the option does not directly improve water-use efficiency, it forms part of the wider drought management framework that promotes efficient and sustainable water use across the system.	None	Minor beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	NA	NA	NA	NA	NA	NA	No land take or ground disturbance is anticipated.	None	None

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Air and Climate	6.1 To maintain and improve air quality.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	No construction emissions are anticipated. Operational transfers may increase pumping and associated indirect emissions during extreme drought events.	Minor adverse	None
Air and climate	6.2 To reduce greenhouse gas emissions.	Medium	Low	Short-term	Temporary	Low (adverse)	Medium (adverse)	Increased pumping during transfers may increase electricity consumption and associated carbon emissions during drought. However, impacts would be intermittent and short-term.	Minor adverse	None
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	Medium	Short-term	Temporary	Medium (beneficial)	Medium (beneficial)	The option enhances operational flexibility and supports climate change adaptation by improving resilience of the supply network during extreme drought events.	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	NA	NA	NA	NA	NA	NA	No land take or ground disturbance is anticipated. No impacts on heritage sites are expected.	None	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	NA	NA	NA	NA	NA	NA	The option does not involve new infrastructure and would not affect landscape character or visual amenity.	None	None

Drought Plan Option Name: Network Changes

Drought Plan Option Description: As an option for the transfer of treated water and an alternative to tankering, the YW supply network could be extended in parts to transfer water to areas at risk. This could be through the use of overland pipes where required. This could also be combined with package plant options, where a source is identified which can be fed into the existing local transfer network. Yield typically ranges from 1 -5 Ml/d, so a DO of 3 Ml/d has been stated. Abstraction would be within existing permissions, but additional pipelines would have an impact on the land.

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Biodiversity, flora and fauna	1.1 To conserve 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	Medium	Temporary	Medium	Medium	While the exact scale and location of this drought option are not known, and proximity and pathways to designated sites cannot be determined at this stage, this is a moderate-to-large-scale infrastructure project, with likely rural overland pipe extensions and potential modular treatment plants. While the infrastructure itself could be dismantled post-drought, components like pipeline corridors, abstraction systems, and network connections represent permanent or semi-permanent changes with environmental and planning implications. Minor impact pathways are associated with construction, related to the introduction or spread of INNS, as well as the introduction of dust, noise, and vibration, and localised groundwater or soil disruption. Temporary access restrictions to footpaths or green spaces during construction. This option requires crossing sensitive landscapes and watercourses, though impacts can be mitigated through engineering design. There may be potential impacts on migratory fish if pipelines abstract or discharge into sensitive waterbodies. Direct or indirect impact on SSSIs, SACs, or LWS if pipeline routes or construction compounds overlap. New infrastructure can fragment habitats (e.g. hedgerow removal). Given the uncertainties around scale and location, a moderate adverse effect is concluded. Benefits are only realised if enhancement is explicitly designed into the scheme. The use of an existing (but currently unused) licence suggests minimal new hydrological pressures. There is no net change in abstraction or licensed hydrological balance if the abstraction stays within licensed volumes, and no likely significant flow reduction impacts are anticipated.	Moderate adverse	None
Biodiversity, flora and fauna	1.2 To protect and enhance sustainable natural resources and the ecosystem services they provide and deliver a biodiversity net gain.	Medium	Medium	Medium	Temporary	Medium	Medium	The option supports resilience by enabling water transfers during drought, which could help protect habitats that would otherwise be affected by water scarcity. However, the construction of large-diameter pipelines across rural landscapes may cause temporary disruption or fragmentation of habitats. Water-dependent features or associated aquatic or terrestrial species, including migratory fish, could be affected. The project depends on landscape and ecological systems to host infrastructure (e.g. rural pipeline corridors). Abstraction and treatment of identified sources could reduce the water available in the natural environment; however, abstraction would be within existing permitted volumes. Risk of undermining soil, water, and biodiversity assets if poor construction or routing methods are used. Potential to offset natural capital losses or enhance ecosystem services. Can contribute to climate adaptability and sustainable habitat management if habitat reinstatement and adaptive measures are included. Potential to improve local connectivity and contribute to long-term climate change adaptability. Depending on whether biodiversity units are lost during the construction of the replacement borehole, minor beneficial opportunities for compensatory planting and habitat enhancement may be available. At this drought planning stage, the scale and location of BNG measures 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.	Moderate adverse	None
Biodiversity, flora and fauna	1.3 To avoid introducing or spreading INNS.	Medium	High	Short-term	Temporary	Medium	Low	Construction and operation activities will have vehicle and equipment movement, ground disturbance, and water transfers, which could create introduction or spread pathways for INNS. Abstracting and discharging water within the same catchment (especially when functionally linked to designated sites) may pose INNS risks if proper controls aren't in place. There is a low risk of introducing or spreading invasive non-native species (INNS) during the operation of the scheme. Appropriate biosecurity measures and an INNS risk assessment and management plan should be implemented.	Negligible adverse	None
Population and human health	2.1 To protect and improve health and well-being (including promoting the value of the water environment for health and wellbeing).	Medium	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium	A treated water transfer to areas at risk, or the use of package plants to treat identified sources, would protect and improve health and well-being by ensuring a more resilient public water supply in several "at-risk" areas. Given that this option would be targeted at mostly rural areas, there is less likelihood of nuisance effects associated with dust, noise and vibration during construction. At this stage, the proximity of the option to AQMAs and Noise Action Planning Important Areas is not known. Construction-related effects will be mitigated as far as possible through best construction practices. In terms of operational benefits, the scheme will increase the reliability and resilience of the overall supply system. This is considered a minor benefit, as the option kicks in during extreme drought and provides much-needed water in several "at-risk" areas, which in turn supports human health and well-being.	Minor adverse	Moderate beneficial
Population and human health	2.2 To protect and enhance opportunities for formal and informal recreation.	Medium	Medium	Short-term	Temporary	Medium	Low	While the exact scale and location of this drought option is not known, and proximity to recreational sites/amenities cannot be determined at this stage, impacts will be temporary during the construction phase and will be mitigated through the implementation of standard good practice. The scheme will aim to protect existing recreational access and green infrastructure with post-construction reinstatement. Opportunities for minor enhancements (e.g. planting or habitat links) will be considered as part of the scheme delivery.	Minor adverse	Minor beneficial
Population and human health	2.3 To promote a sustainable economy and thriving communities with good access to the services they need.	Medium	Low	Short-term	Temporary	Medium	Medium	While the exact scale and location of this drought option are not known, there is the potential for short-term local employment during construction and stimulation of local procurement. Operation of this option is expected to lead to minor beneficial effects that promote a sustainable economy and thriving communities with good access to services. The transfer of treated water to 'Areas at risk' will help to support a more resilient public water supply, in turn supporting the local economy and community, with no permanent adverse effects on the environment, provided best practice is followed.	None	Moderate 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	Medium (adverse) Low (beneficial)	Low	Construction activities will generate excavated materials, packaging, and spoil. Standard best practice in construction waste management would be implemented (such as a Site Waste Management Plan), and recycling of inert waste will be maximised. There may be opportunities to reduce packaging/material inputs in procurement. During operation, additional power will be required to operate the scheme's assets. The scheme does not directly reduce demand but supports secure abstraction. System controls may support more efficient abstraction, improve energy efficiency, and reduce associated greenhouse gas emissions.	Minor adverse	Negligible beneficial
Material assets and resource use	3.2 To promote efficient water resource management and the sustainable management of natural resources, ensuring water supply for homes and industry in the area is maintained.	Medium	Medium	Short-term	Temporary	Low (adverse) Medium (beneficial)	Medium	The option may generate some construction waste from new infrastructure, but this is expected to be minor and managed in accordance with standard construction waste protocols. Operation could lead to minor beneficial effects from more efficient management of water resources, helping to ensure the public water supply for homes and industry in those areas. This option is unlikely to result in significant reductions in greenhouse gas emissions.	Minor adverse	Moderate beneficial

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Water	4.1 To maintain or improve the quality of surface and groundwater resources	Medium	Low	Short-term	Temporary	Low	Medium	Construction may generate sediment runoff, hydrocarbons, or contaminants from machinery and disturbed soil, especially near watercourses. As the location of the interventions is not known at this stage, it is assumed that there may be watercourse crossings associated with the new pipelines and that WFD waterbodies may be impacted. This assessment assumes that standard construction good practice would be implemented. Risk to designated bathing areas is unlikely based on a rural inland setting. Risk of groundwater contamination during construction (e.g. fuel/oil spills, trenching), especially if pipelines pass through sensitive aquifers or Source Protection Zones (SPZs). If treated water is transferred appropriately and securely, operational risk is low.	Minor adverse	None
Water	4.2 To protect and enhance surface and groundwater levels and flows	Medium	Medium	Short-term	Temporary	Low	Low	The exact locations and affected WFD waterbodies are not known at this stage. As the option will make better use of the existing abstraction license, so there will be no additional abstraction-related impacts.	Negligible adverse	None
Water	4.3 To ensure appropriate and sustainable management of abstractions (or compensation flow) to maintain water supplies whilst protecting ecosystem functions that rely on water resources, including contributing to the achievement of WFD compliance objectives.	Medium	Medium	Short-term	Temporary	Low	Low	As the option will operate within the parameters of the existing abstraction licenses, it is assumed that the option is implemented in line with WFD and RBMP targets (e.g. maintaining ecological flows, avoiding deterioration), and may support resilience objectives under the Catchment Abstraction Management Strategies (CAMS). As the option will make better use of the existing abstraction license, there will be no additional abstraction-related impacts. As the location of the interventions is not known at this stage, flood risk cannot be determined. Designed as a drought resilience measure, the scheme supports flexible redistribution of treated water to meet shortfalls, reducing pressure on stressed catchments. As the transfer is treated water via network extension, and within existing abstraction licenses, it is unlikely to directly conflict with other uses.	None	Negligible beneficial
Water	4.4 To promote water efficiency and measures that enable sustainable water use.	Medium	Medium	Short-term	Temporary	Medium	Medium	As a treated water transfer scheme that can be activated during drought, it inherently allows for operational flexibility. Infrastructure (e.g. pipelines, valves, control systems) can be adapted to respond to environmental triggers. This option enables rapid deployment in line with Drought Plans While the scheme increases resilience and redistribution, it doesn't directly target demand-side efficiency. The option is an alternative to tankering and thus could reduce waste and improve supply management. The option is primarily an infrastructure solution, so unless supported by public communications or campaigns, it's unlikely to drive behavioural change or awareness.	None	Moderate beneficial
Soil, geology and land use	5.1 To protect and enhance the quality and quantity of soils and protect and enhance geodiversity and ensure appropriate and efficient use of land.	Medium	Medium	Short-term	Temporary	Low	Medium	The exact scale and location of interventions associated with this option are not known at this stage, and thus, the impact on geologically important sites cannot be determined. Such sites are typically avoided through early screening and rerouting. As a land-based, inland treated water transfer, this option is unlikely to affect coastal geomorphology. Limited interaction with active fluvial processes unless river crossings are involved, in which case, local erosion or sedimentation could occur. Works are likely to occur across rural farmland, especially if large-diameter pipes follow linear routes across open fields. Potential for temporary loss or compaction of Grade 3 agricultural land. Reinstatement is possible, but soil structure and productivity can be affected. Option likely routed through greenfield/rural areas, not previously developed land. Some temporary works may use existing access tracks, but land take efficiency is low compared to brownfield reuse. Given that this option is an alternative to tankering, the disturbance associated with Tankering avoided. Overland pipelines are less likely to disturb riverbanks and erosion-prone areas than tankers. Pipe construction causes one-off disturbance vs. repeated compaction from tanker wheels.	Minor adverse	None
Air and Climate	6.1 To maintain and improve air quality.	Medium	Medium	Short-term	Temporary	Low	Low	The construction phase may result in air emissions (dust, machinery exhaust), but this is localised and short-term. At this stage, the proximity of the option to built-up or residential areas and AQMAs is not known. Construction-related effects will be mitigated as far as possible through best construction practices. Compared to tankering, this option significantly reduces vehicle mileage, especially heavy-duty diesel movements. Beneficial effects would be larger in magnitude in areas sensitive to air quality pressures. The use of package plants could result in adverse air quality outcomes, depending on the source of power used in these locations. Once installed, pipeline transfers produce no operational air pollution (beyond any pumping energy required, which is indirect and grid-based).	Negligible adverse	Negligible beneficial
Air and climate	6.2 To reduce greenhouse gas emissions.	Medium	Medium	Short-term	Temporary	Low	Low	Initial construction is energy-intensive (materials, excavation), but operational energy demand is relatively low, especially if gravity-fed or short pipeline runs. Compared to repeated tanker operations, the total energy demand over time is significantly lower. A piped solution avoids this and is likely grid-powered, with potential to benefit from the UK's decarbonising electricity mix. Over time, GHG emissions are significantly reduced compared to mobile alternatives. The extent of use of renewable energy and energy efficiency is not known at this stage, but the fixed infrastructure has higher energy-use efficiency. The option could be improved with smart pump controls or integration with renewable sources.	Negligible adverse	Negligible beneficial
Air and climate	6.3 To consider the need for adaptive measures for climate change.	Medium	Medium	Short-term	Temporary	Medium	Medium	The option directly supports drought resilience by enabling the flexible transfer of treated water to areas at risk of supply shortfall. Reduces reliance on reactive emergency tankering and allows for pre-emptive redistribution during dry periods. Aligns well with climate adaptation strategies within Water Resource Management Plans (WRMPs) and Drought Plans. Infrastructure can be scaled or modified in the future as conditions change (e.g. source-switching, route extensions).	None	Moderate beneficial
Archaeology and Cultural Heritage	7.1 To conserve and enhance the historic environment, heritage assets and their settings and protect archaeologically important sites.	Medium	Medium	Short-term	Temporary	Low	Medium	Given that the exact route, location and proximity to listed buildings, scheduled monuments and other heritage are unknown, and assuming a typical rural alignment for pipelines and treated water transfer infrastructure, a precautionary assessment has been applied. Linear infrastructure may intersect or pass near listed buildings, conservation areas, or parklands. Visual and physical impacts are typically temporary, but proximity to historic settings may degrade perceived landscape/townscape character. Careful route planning and avoidance of sensitive areas would limit these risks. Trenching may disturb buried archaeological remains, especially in unrecorded rural areas. Desk-based assessments and geophysical surveys are standard mitigation. Risk is localised but real and can be managed through watching briefs or rerouting. Some low-lying rural areas may intersect peatlands, floodplains or ancient wetlands. These areas can contain valuable paleoenvironmental be treated with care. Likelihood is route-dependent; risks can be reduced with survey, coring and micro-siting.	Minor adverse	None
Landscape and Visual Amenity	8.1 To protect, enhance the quality of and improve access to designated and undesignated landscapes, landscape character and visual amenity.	Medium	Medium	Short-term	Temporary	Low	Medium	Assuming a rural routing with uncertain alignment and recognising this is a pipeline-based alternative to tankering, if the route enters or borders protected landscapes (e.g., National Parks, National Landscapes/AONBs), there is potential for temporary construction impacts (access tracks, vegetation loss). Pipelines are sub-surface and therefore low long-term impact, but care is needed around sensitive woodlands and viewsheds. Construction may cause temporary restrictions to footpaths, bridleways, or farmland access. These are usually short-lived and reversible. Rural routing may pass through or near hedgerows, small woodlands, field boundaries—important for local character.	Minor adverse	None