Public

Drought Plan 2022 APPENDIX 4 (draft)

Yorkshire Water 31/03/2021





In accordance with Drought Plan guidance, this statement certifies that Yorkshire Water's Drought Plan has been reviewed by our security team. Some information has been redacted or edited in this published version for reasons of national security.



Appendix 4.1 North Area

Vorishire Water Drought Plan supply side options: North Area Reservoir Group
Type of option: Reservoir group - compensation reduction
Location / Area affected or whole supply zone:Grid SWZ North Area
Summary discription of actions: Compensation flows reduced to half or one third of normal flows to preserve reservoir stocks and extend the period that
compensation flows can be maintained. Reductions will be considered on a selective basis as some releases are more critical than others
Preceding actions: Publicity campaign and temporary use bans in force (April to September)

| Preceding actions: Publicity campaig | ign and temporary use bans in f | orce (April to September | | | | | | |
|--|---------------------------------|---|--|--|--|---|--|--|
| Option name | | North Area Resevoir 1 | North Area Resevoir 2 | North Area Resevoir 3 | North Area Resevoir 4 | North Area Resevoir 5 | | |
| Trigger(s) | | Triggers – Risk of shortage of supply established: 1.Regional Stocks «Normal Control Line and approaching Drought Control Line (within 1-2 weeks) 2.Regional Stocks have crossed Brought Control Line and remained below for more than 4 weeks See further information below on downstream river users. | Triggers – Risk of shortage of supply established: 1. Regional Stocks «Normal Control Line and approaching Drought Control Line (within 1-2 weeks) 2. Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks | Triggers – Risk of shortage of supply established: 1. Regional Stocks -Normal Control Line and approaching Drought Control Line (within 1-2 weeks) or Scargill Reservoir is below 25% (sa per the temporary Local Enforcement Position (LEP)). 2. Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks | Triggers – Risk of shortage of supply established: 1. Regional Stocks «Normal Control Line and approaching Drought Control Line (within 1-2 weeks) 2. Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks See further information below on downstream river users. | Triggers – Risk of shortage of supply established: 1. Individual Resevoir Stocks - Normal Control Line and approaching Drought Control Line (within weeks) 2. Individual Resevoir Stocks have crossed Drought Control Line and remained below for more that weeks | | |
| Most likely authorisation in a drought (| t (permit or order) | Permit | Permit | Action 1: LEP for duration of flow trial. Post formalisation of trial a permit will be required Action 2: permit | Permit | Permit | | |
| Current Legal Requirement (Compensation release, minimum maintained flow or authorised abstraction limit) | | Compensation release 13.66 MI/d | Compensation release 0.46 MI/d (or 100,000 gallons per day as stated in the author/sing Act) | Group compensation of 0.75 MI/d | Compensation release 18.19 MI/d (authorising Act defines release as a quantity of water not being less than 2,778 gallons per minute) | 16 November – 15 April compensation release 16.90Ml.d: 16 April - 15 May and 16 October – 15 November compensation release 8.20 Ml/d 16 May-15 October 3.90Ml/d | | |
| Deployable Output of action - Variable | | Reduce compensation release by 50% to 6.83 MI/d providing 6.83 MI/d benefit | Reduce compensation release by 50% to 0.23 MI/d providing 0.23 MI/d benefit | LEP states 50% reduction in group compensation (to 0.38 MI/d). Currently for the duration of the tria (till Sept 2024) this would go through the LEP not a permit. But after Sept 2024, once formalised, YN would require a permit for this action. | Reduce compensation release by 50% to 9.10 MI/d providing 9.10 MI/d benefit | Depending on the time of year reduce compensation by 50% to: 8.45 Ml/d between 16 November – 15 April 4.10 Ml/d providing a benefit of 8.45 Ml/d; or 4.10 Ml/d between 16 April - 15 May providing a benefit of 4.10 Ml/d; or 1.95Ml/d providing a benefit of 1.95 Ml/d | | |
| depending on conditions and duration of drought permit | Action 2 Description | Reduce compensation release by 67% to 4.51 MI/d providing 9.15 MI/d benefit | Reducecompensation release by 67% to 0.15 MI/d providing 0.31 MI/d benefit | Droguth Permit required: Reduce compensation release by 67%: group compensation reduced to 0.25Ml/d; | Reduce compensation release by 67% to 6.00 MI/d providing 12.19 MI/d benefit | Depending on the time of year reduce compensation by 67% to: 5.58Ml/d providing a benefit of 11.30 Ml/d 2.71Ml/d providing a benefit of 5.49 Ml/d 1.23Ml/d providing a benefit of 2.60Ml/d | | |
| Implementation timetable Preparation time, time of year effective, duration Permissions required and constraints | | | Time of year effective: implemented when reservoir stocks | Preparation time: 4 weeks prior to advertising, implementation period 5-6 weeks (advertisement, representation, enquiry, granting) Time of year effective: implemented when reservoir stocks approach drought control line so could be effective any time of year. Compensation release reductions may be phased to minimise effect on downstream watercourses. Duration: Minimum period of restriction typically 12 weeks Permission from Defra or the Environment Agency required following application of a drought order or permit. | | | | |
| Including details of liaison with bodies responsible for giving any permits or approvals Risks associated with option | | | Reduction in compensation releases / maint. | A public enquiry may be required. Liaise with Environment Agency. Reduction in compensation releases / maintained flows have potential environmental impacts. These will be assessed through the Environmental Assessment Report submitted with the application. | | | | |
| Risk to the Environment (Major/Moderate/Minor or uncertain) | | Hydrological and water quality assessment identified a zone of impact of the drought option on: Pott Hydrological and water quality assessment identified a zone of impact of the drought option on: Pott Hydrological and water quality assessment identified a zone of impact of the drought option on: Pott Hydrological and water quality assessment identified a zone of impact of the drought option on: Pott Hydrological and water quality assessment identified a zone of impact of the drought option on: Pott Hydrological and water quality assessment identified a zone of impact of the drought option on: Pott Washburn. The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a The assement concluded that there would be | | | | | | |
| Summary of likely environmental impacts include details for features of moderate and major sensitivity and mino sensitivity features from designated sites | | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: WPD compliance **Macroinverte brates (Moderate) **Fais (Moderate) **REC and notable fish - numerous species (minor to Major) White-clawed caryfish (Moderate) **Roles subvioloceus (Minor) Water vole (Moderate) **Ripon Parks SSSI (neligible) | Environmental assessment has identified potential environmental sensitivities (prior to mitigatio within the zone of influence to: WFD compliance + Macroinvertebrates (Moderate) + **Sish (Minor) NERC and notable fish - numerous species (Minor to Major) Graptoptes Playipes (Minor) White-clawed Crayfish (Moderate) Priority Habitat 453047- no main habitat but additional habitats present (Minor) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: WFO compliance *Macroinmentebrates (Moderate) *Fish (moderate) *Fish (moderate) *NERC and notable fish – numerour species (Moderate to Major) White-clawed crayfish (Moderate) *#yridrace polishist (Minor) Priority Habitat 413440 - lowland fens (Minor) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation within the zone of influence to: WPD compliance **Macroinvertebrates (Moderate) **Fish (Minor) NERC and notable fish – numerous (Moderate to major) White -Clawed Carylish (Major) Psychomyin foquils (Minor) Water vole (Major) | Environmental assessment has identified potential environmental sensitivities (prior to mitigatio within the zone of influence to: WPD compliance **WBC compliance **Macroinwertebrates (Moderate) **Sirsh (Moderate) **Sirsh (Moderate) **Sirsh (Moderate) **NERC and notable fish – numerous (Moderate to Major) Water vole (Major) Priority habitat 412935- lowland fens (Minor) | | |
| Baseline information used Environmental assessment used YWS and | | Environmental assessment used YWS and EA data and information on: reservoir management, in | measured reservoir outflow, water resource modelling of outflow in critical drought years, gauged ri Classification Scheme (2) data and publicly available data on designat | rer flows and levels; routine WFD water quality monitoring, water quality and flow pressures (abstraction ded sites, distributions of NERC Act Section 41 priority species, distribution of Invasive and Non-Native Sp | n licence and discharge consent registers], YWS STW information; macroinvertebrate sampling data as decies and recreational resources, in addition to local EA / YWS knowledge. | nd UFE, WHPTNATXA and WHPTASPT EQI scores, fish abundances from monitoring surveys, Fisheries | | |
| Summary of additional baseline monito | toring requirements | | Details of additional baseline monitoring requirements are incorporated | within the Environmental Monitoring Plan, listing the features to be monitored and methods used; locat | ion, timing and frequency of surveys; and who will undertake the monitoring. | | | |
| Mitigation measures N | | Mitig | ation measures and accompanying monitoring have been identified for serious impacts of the droug | ort option (features of moderate and major sensitivities, and minor sensitivities to designated sites - as lis | ted above) through discussion with the EA. Details are incorporated within the Environmental Monit | oring Plan | | |
| Impact on other activities e.g. fisheries, industry etc | | Screening identified possible impacts on: Angling on River Burn (uncertain) Further assessment is required on Nosterfield LNR to confirm the sensitivity. | Screening identified no potential impacts. | Screening identified no potential impacts. | Screening identified possible impacts on: Angling on River Washburn (uncertain) | Screening identified no potential impacts. | | |
| WFD Compliance | | Reach 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 2: Impacts on macroinvertebrates and fish would be moderate. The impacts would not associate with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 3: Impacts on macroinvertebrates and fish would be negligible. The impacts would not associate with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reaches 1 and 2: Impacts on macroinvertebrates and fish would be minor. The impacts would not associated with WFD deterioration based on the criteria outlined in in the Environmental Assessme Report. | be Reach 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be nt associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1: Impacts on macroinvertebrates would be moderate. Impacts on fish would be minor. Th impacts would not be associated with WFD deterioration based on the criteria outlined in th Environmental Assessment Report. | Reach 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would not associated with WFD deterioration based on the criteria outlined in the Environmental Assessme Report. | | |
| Additional information | | N/A | N/A | The compensation from this reservoir is currently operated under a flow trial agreement held with the Environment Agency. The flow trial is expected to be formalised by 2025 and we will revise the drought option to reflect the conditions of the trial if required. | N/A | This reservoir cannot be supported by any other reservoirs therefore it has a trigger for implementate the drought action that is linked to its own stocks rather than regional stocks. However, if it regional trigger was met before the local trigger we would still consider applying for a permit stee. This action will require a drought permit following formalisation of the current flow trial in 202 | | |

Appendix 4.2 North West Area

| orkshire Water Drought Plan supply side options: North West Area Reservoir Group |
|---|
| pe of option: Reservoir group - compensation reduction |
| cation / Area affected or whole supply zone: Grid SWZ North West Area |
| mmary discription of actions: Compensation flows reduced to half or one third of normal flows to preserve reservoir stocks and extend the period at compensation flows can be maintained. Reductions will be considered on a selective basis as some releases are more critical than others |
| eceding actions: Publicity campaign and temporary use bans in force (April to September) |

| Preceding actions: Publicity car | mpaign and temporary use bans i | n force (April to September) | | | | | |
|---|--|---|--|---|---|--|--|
| Option name | | North West Area Reservoir 1 | North West Area Reservoir 2 | North West Area Reservoir 3 | North West Area Reservoir 4 | North West Area Reservoir 5 | North West Area Reservoir 6 |
| | | | | | | | |
| | | Triggers – Risk of shortage of supply established | Triggers – Risk of shortage of supply established | Triggers – Risk of shortage of supply established | Triggers – Risk of shortage of supply established | Triggers – Risk of shortage of supply established | Triggers – Risk of shortage of supply established |
| Trigger(s) | | 1.Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""><td>1.Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</td><td>1.Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""><td>1.Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</td><td> Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) </td><td>1.Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</td></normal></td></normal> | 1.Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) | 1.Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""><td>1.Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</td><td> Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) </td><td>1.Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</td></normal> | 1.Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) | Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) | 1.Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) |
| | | 2. Regional Stocks | 2.Regional Stocks | 2.Regional Stocks | 2. Regional Stocks | 2.Regional Stocks | 2. Regional Stocks |
| | | | | | | | |
| Most likely authorisation in a drou | ught (permit or order) | Permit | Permit | Permit | Permit | Permit | Permit |
| Current Legal Requirement (Comp maintained flow or authorised ab: | vensation release, minimum straction limit) | Ensure a maintained flow of 6.00 Ml/d when the combined flow from North West Area Reservoir 2 and 3 is 8.00 Ml/d, or 8.00 Ml/d whenever the combined compensation flow from North West Area Reservoirs 2 and 3 reduces from 8.00 to 6.00 Ml/d | 4.00 Ml/d when both the North West Area Reservoirs 2 and 3 levels are above the control lines of defined in the licence, or 5.25 Ml/d when the North West Area Reservoir 2 level is above the control line and North West Area Reservoir 3 level is above the control line, or 3.25 Ml/d when both reservoir levels are below the control line, or 3.25 Ml/d when both reservoir levels are below the control lines. | 4.00 Ml/d when the reservoir level is above the control line defined in the licence, or 2.750 Ml/d when the reservoir level is below the control line | Compensation flow of 3.60 Ml/d, or 1.80 Ml/d when below control line | Currently operating under an agreement with the Environment Agency to release 6.3 Ml/d (compensation in the authorising Act is at mill owners discretion) | Currently operating under an agreement with the Environment Agency to release 1.00 MII/d The authorising Act requires 2/5 of the average daily inflow to the reservoir to be released between 05:00 and 20:00 every day except Sunday, Christmas Day & Good Friday |
| Deployable Output of action - Var | Action 1 Description | Maintained flow reduced to 4.0 MI/d, providing a 2.0 MI/d or 4.0 MI/d benefit depending on the levels of North West Area Reservoirs 2 and 3 | Reduce the compensation release required by 50% to 2.63 M//d providing a 2.63 M//d benefit or 1.63 M//d providing a 1.63 M//d benefit depending on whether the levels in North West Area Reservoirs 2 and 3 are above or below their control lines | Compensation release reduced by 50% to 2.00 MI/d providing a benefit of 2.00 MI/d or 1.38 MI/d proving a benefit of 1.38 MI/d dependiong on whether North West Reservoir 3 is above or below its control line | No action required | Current compensation release reduced by 50% to 3.15 MI/d providing a 3.15 MI/d benefit A permit application may be required due to the specification in the Act to compensate at the mill owners discretion | Current compensation release reduced by 50% to 0.50 MI/d providing 0.50 MI/d benefit A drought permit may be required to temporarily suspend the statutroy requirement to release 2/5 of the inflow |
| depending on conditions and dura of drought permit | | Maintained flow reduced to 2.67 MI/d providing a 3.33 MI/d or 5.33 MI/d benefit depending on the levels of North West Area Reservoirs 2 and 3 | Reduce the compensation release required by 67% to 1.73 MI/d providing a 3.52 MI/d benefit or 1.07 MI/d providing a 2.18 MI/d benefit depending on whether the levels in North West Area Reservoirs 2 and 3 are above or below their control lines | Compensation release reduced by 67% to 1.32 MI/d providing a benefit of 2.68 MI/d or 0.91 M/d proving a benefit of 1.84 MI/d depending on whether North West Reservoir 3 is above or below it control line | Current compensation release reduced by 67% to 1.20 MI/d providing a 2.40 MI/d benefit | Current compensation release reduced by 67% to 2.08 MI/d providing a 4.22 MI/d benefit A permit application may be required due to the specification in the Act to compensate at the mill owners discretion | Current compensation release reduced by 67% to 0.33 MI/d providing 0.67 MI/d benefit A drought permit may be required to temporarily suspend the statutroy requirement to release 2/5 of the inflow |
| Implementation timetable Preparation time, time of year eff | ective, duration | Preparation time: 4 weeks prior to advertising, implementation period 5-6 weeks (advertisement, Time of year effective: implemented when reservoir stocks approach drought control line so couli Duration: Minimum period of restriction typically 12 weeks | , representation, enquiry, granting) d be effective any time of year. Compensation release reductions may be phased to minimise effec | t on downstream watercourses. | | | |
| Permissions required and constrai Including details of liaison with bo permits or approvals | ints dies responsible for giving any | Permission from Defra or the Environment Agency required following application of a drought orc A public enquiry may be required. Lialse with Environment Agency. | der or permit. | | | | |
| Risks associated with option | | Reduction in compensation releases / maintained flows have potential environmental impacts. T | hese will be assessed through the Environmental Assessment Report submitted with the application | | | | |
| Risk to the Environment | | River Worth. | Leeming Water, Bridgehouse Beck, and the River Worth. | Moorhouse Beck, Bridgehouse Beck, and the River Worth. | Denholme Beck. | on: Hydrological and water quality assessment identified a zone of impact of the drought option on Hewenden/Harden Beck. | Eldwick/ Loadpit Beck. |
| (Major/Moderate/Minor or uncer | tain) | The assement concluded that there would be Major impacts on hydrology (river flow and level and a Moderate risk to water quality associated with this option. The overall impact or environmental features has been assessed as Major. | (I) the assement concluded that there would be Major impacts on hydrology (river flow and level and a Minor risk to water quality associated with this option. The overall impact or environmental features has been assessed as Major. | (I) the assement concluded that there would be Major impacts on hydrology (river flow and level hand a Moderarier fisk to water quality associated with this option. The overall impact or environmental features has been assessed as Major. | The assement concluded that there would be Major impacts on hydrology (river flow and Ir and a Moderate risk to water quality associated with this option. The overall impact environmental features has been assessed as Moderate. | veel) The assement concluded that there would be Major impacts on hydrology (river flow and level or on and a Moderate risk to water quality associated with this option. The overall impact or environmental features has been assessed as Moderate. | The assement concluded that there would be Major impacts on hydrology (river flow and levi and a Milor risk to water qualify associated with this option. The overall impact of environmental features has been assessed as Major. |
| Summary of likely environmental include details for features of mo minor sensitivity features from de | derate and major sensitivity and | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NERC and Notable Fish – numerous (Moderate to Major) White-clawed craylish (Major) Otter (Negligible) WFD compliance Fish (Major) Macroinvertebrates (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: White Clawded crayfish (Moderate) Otter (Negligible) Riolisa subviolisateus (Minor) WFD compliance Fish (Major) Macroinvertebrate (Moderate) | mitigation) within the zone of influence to: NERC and Notable Fish – numerous (Moderate to Major) White-clawed crayfish (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior mitigation) within the zone of influence to: NERC and Notable Fish – numerous (Moderate) White-clawed crayfish (Moderate) Otter (Negligible) WFD Compliance Invertebrates (Moderate) Fish (Moderate) | to Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NERC and Motable Fish – numerous (Moderate) White-clawed crayfish (Moderate) Citer (Negligible) Water volk (Woderate) WFD Compliance Invertebrates (Moderate) Fish (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior mitigation) within the zone of influence to: NERC and Notable Fish – numerous (Minor to Major) Otter (Negligible) Water vole (Moderate) WFD compliance Fish (Moderate) Macroinvertebrates (Moderate) |
| Baseline information used | | | | er flows and levels; routine WFD water quality monitoring, water quality and flow pressures (abstra- ublicly available data on designated sites, distributions of NERC Act Section 41 priority species, distri | | WS knowledge. | |
| Summary of additional baseline m | nonitoring requirements | Details of additional baseline monitoring requirements, are incorporated within the Environment. | all Monitoring Plan, listing the features to be monitored and methods used; location, timing and free | quency of surveys; and who will undertake the monitoring. | | | |
| Mitigation measures | | Mitigation measures and accompanying monitoring have been identified for serious impacts of th | ne drought option (features of moderate and major sensitivities, and minor sensitivities to designate | ed sites - as listed above) through discussion with the EA. Details are incorporated within the Enviro | nmental Monitoring Plan | | |
| Impact on other activities e.g. fisheries, industry etc | | Screening identified no further impacts. | Screening identified possible impacts on: Angling - River Worth (uncertain) | Screening identified no further impacts. | Screening identified no further impacts. | Screening identified possible impacts on: Angling - Harden Beck (uncertain) | Screening identified no further impacts. |
| WFD Compliance | | associated with WFD deterioration based on the criteria outlined in the Environmenta Assessment Report. Reach 2: Impacts on fish would be major and for macroinvertebrates would be moderate. Th | all be major. The impacts would not be associated with WFD deterioration based on the criteri outlined in the Environmental Assessment Report. Reach 3: Impacts on fish would be major and for macroinvertebrates would be moderate. The | Reach 1 and Reach 2: Impacts on macroinvertebrates would be moderate. Impacts on fish would be major. The impacts would not be associated with WFD deterioration based on the criterio outlined in the Environmental Assessment Report. Reach 3: Impacts on fish would be major and for macroinvertebrates would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the | Reach 1 and Reach 2: Impacts on macroinvertebrates and fish would be moderate. The imp would not be associated with WFD deterioration based on the criteria outlined in Environmental Assessment Report. | acts Reach 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be the lassociated with WFD deterioration based on the criteria outlined in the Environmenta Assessment Report. | Reach 3: Impacts on macroinvertebrates and fish would be minor. The impacts would not associated with WFD deterioration based on the criteria outlined in the Environmen |
| Additional information | | Environmental Assessment Report. N/A | Environmental Assessment Report. N/A | Environmental Assessment Report. N/A | N/A | N/A | Assessment Report. N/A |

| North West Area Reservoir 7 | North West Area Reservoir 8 | North West Area Reservoir 9 | North West Area Reservoir 10 | North West Area Reservoir 11 | North West Area Reservoir 12 |
|--|--|--|---|--|--|
| Triggers – Risk of shortage of supply established 1. Regional Stocks <normal (within="" 1-2="" 2.="" and="" approaching="" control="" drought="" line="" regional="" stocks<="" td="" weeks)=""><td>Triggers – Risk of shortage of supply established: 1. Individual Reserviir Stocks «Normal Control Line and approaching Drought Control Line (within 1 2 weeks) 2. Individual Reserviir Stocks have crossed Drought Control Line and remained below for more than 4 weeks</td><td>Triggers – Risk of shortage of supply established: 1. Individual Reevoir Stocks «Normal Control Line and approaching Drought Control Line (within 1 2 weeks) 2. Individual Reevoir Stocks have crossed Drought Control Line and remained below for more than 4 weeks</td><td>Triggers – Risk of shortage of supply established 1. Regional Stocks - Normal Control Line and approaching Drought Control Line (within 1-2 weeks) 2. Regional Stocks</td><td>Triggers – Risk of shortage of supply established 1.Regional Stocks «Normal Control Line and approaching Drought Control Line (within 1-2 weeks) 2.Regional Stocks</td><td>Triggers – Risk of shortage of supply established: 1. Individual Resevoir Stocks «Normal Control Line and approaching Drought Control Line (within : 2 weeks) 2. Individual Resevoir Stocks have crossed Drought Control Line and remained below for more than 4 weeks</td></normal> | Triggers – Risk of shortage of supply established: 1. Individual Reserviir Stocks «Normal Control Line and approaching Drought Control Line (within 1 2 weeks) 2. Individual Reserviir Stocks have crossed Drought Control Line and remained below for more than 4 weeks | Triggers – Risk of shortage of supply established: 1. Individual Reevoir Stocks «Normal Control Line and approaching Drought Control Line (within 1 2 weeks) 2. Individual Reevoir Stocks have crossed Drought Control Line and remained below for more than 4 weeks | Triggers – Risk of shortage of supply established 1. Regional Stocks - Normal Control Line and approaching Drought Control Line (within 1-2 weeks) 2. Regional Stocks | Triggers – Risk of shortage of supply established 1.Regional Stocks «Normal Control Line and approaching Drought Control Line (within 1-2 weeks) 2.Regional Stocks | Triggers – Risk of shortage of supply established: 1. Individual Resevoir Stocks «Normal Control Line and approaching Drought Control Line (within : 2 weeks) 2. Individual Resevoir Stocks have crossed Drought Control Line and remained below for more than 4 weeks |
| Permit | Permit | Permit only required if abstracting | Permit | Permit | Permit |
| Compensation release of 0.791 MI/d (defined in the Act as 174,000 gallions/day) | Currently operating to release 0.43 Ml/d under agreement with the Environment Agency (the Act requires 110,273 gallons per working day Mon to Sat) | There is no requirement to meet a defined compensation release from this reservoir however, the licence includes a prescribed flow of 2.41 M/ld whereby no water can be abstracted if the flow exiting the reservoir is below this level. We are not currently abstracting from the reservoir but this Drought Plan includes an option to bring the reservoir into supply. | Compensation release of 1.19 MI/d (defined in the Act as 261,000 gallons/day) | Compensation releases from this reservoir vary during the year and are by flow trial agreement only; 1 am to 19 Apr 15.1 MI/d 20 Apr to 10 May 7.8 MI/d 11 May to 11 Oct 38 MI/d 11.3 May to 11 Oct 38 MI/d 12-31 Oct 7.8 MI/d 1 Not to 31 Dec 15.1 MI/d | Compensation release of 0.09 MI/d (defined in the Act as 18,600 gallons/day) |
| Compensation release reduced by 50% to 0.40 MI/d providing 0.40 MI/d benefit | | Reduce the prescribed flow by 50% to 1.21 MI/d providing 1.21 MI/d benefit. This option is only relevent if we implement the option to put the reservoir back into supply. | Compensation released reduced by 50% to 0.60 MI/d providing 0.60 MI/d benefit | Compensation releases reduced by 50% to; 1 Jan 10 19 Apr 7.5 Mild providing a 7.5 Mild benefit 20 Apr to 10 May 3.90 Mild providing a 3.90 Mild benefit 11 May to 11 Oct 1.90 Mild providing a 3.90 Mild benefit 12-31 Oct 3.90 Mild providing a 3.90 Mild benefit 12-31 Oct 3.90 Mild providing a 3.90 Mild benefit 1 Nov to 31 Der 7.55 Mild providing a 7.55 Mild benefit | Compensation release reduced by 50% to 0.05 MI/d providing a 0.05 MI/d benefit |
| Compensation release reduced by 67% to 0.26 MI/d providing 0.53 MI/d benefit | | Reduce the prescribed flow by 67% to 0.80 MI/d providing 1.61 MI/d benefit. This option is only relevent if we implement the option to put the reservoir back into supply. | Compensation release reduced by 67% to 0.39 MI/d providing 0.80 MI/d benefit | Compensation releases reduced by 67% to; 1 Jan to 19 Apr 4 a 8M //d providing a 10.12 M//d benefit 20 Apr to 10 May 2.57 M//d providing a 5.25 M//d benefit 11 May to 11 Oct 12.5 M//d providing a 2.55 M//d benefit 12-31 Oct 2.57 M//d providing a 3.23 M//d benefit 12-31 Oct 2.57 M//d providing a 3.23 M//d benefit 1 Nov to 31 Dec 4.98 M//d providing a 10.12 M//d benefit Reduce by 67% to 1.25 to 5 providing [2.55-10.12 benefit | Compensation release reduced by 0.03 MI/d providing a 0.06 MI/d benefit |

| Jum Beck. | on: Hydrological and water quality assessment identified a zone of impact of the drought option or Weetcher Brow Beck and Gill Beck. | Silsden Beck. | Embsay Beck, Haw Beck and Eller Beck. | the River Dibb. | Carr Beck. |
|---|--|---|--|--|--|
| | regime absented concluded units there would be weight impacts on injuriously (nee now and twee on and a Moderate risk to water quality associated with this option. The overall impact o environmental features has been assessed as Major. | | | n and a Minor risk to water quality associated with this option. The overall impact on | |
| Environmental assessment has identified potential environmental sensitivities (prior mitigation) within the zone of influence to: NERc and Notable Fish – brown trout and builhead (Moderate to Major) Otter (Negligible) WFD compliance Fish (Moderate) Macronvertebrates (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NERC and Notable fish — numerous (Minor to Moderate) White-clawed crayfish (Major) Water vole (Moderate) Fish (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NERC and Notable Fish- numerous (Moderate to Major) Otter (Negligible) WPD Compliance Macroinvertebrates (Moderate) Fish (Major) | Environmental assessment has identified potential environmental sensitivities (prior t mitigation) within the zone of influence to: NERC and Notable Fish – numerous (Minor to Major) White-clawed crynfish (Major) Otter (Negligible) Whater vole (Moderate) Riolus subvioaceus (Moderate) WFD compliance Fish (Major) Invertebrates (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: fish - Aslants: clambon, brown trout and builhead (Moderate to Major) White-Clawed Craylish (Major) Otter (Negligible) WPD compliance Fish (Major) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: Fish – brown trout and builhead (Moderate to Major) Whits-chawed crayfish (Moderate) Worter (Negligible) Water vole (Moderate) WFD compliance Fish (Moderate) Macroinvertebrates (Moderate) |

| Screening identified possible impacts on: Angling on Jum Beck – (uncertain sensitivity) | Screening identified possible impacts on: | Screening identified no further impacts. | Screening identified possible impacts on: - Angling (uncertain sensitivity) | Screening identified no further impacts. |
|---|---|---|---|--|
| Reach 1: Impacts on macroinvertebrates and fish would be moderate The impacts would no associated with WFD deterioration based on the criteria outlined in the Environme Assessment Report. | | Reach: Impacts on fish would be major and for macroinvertebrates they would be moderate Th impacts would not be associated with WFD deterioration based on the criteria outlined in th Environmental Assessment Report. | | Reach 1: Impacts on fish would be major and impacts on invertebrates would be moderate. The Reach 1: Impacts on fish and invertebrates would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. |
| N/A | This reservoir cannot be supported by any other reservoirs therefore it has a trigger fo implementing the drought action that is linked to its own stocks rather than regional stocks towever, if the regional trigger was met before the local trigger we would still apply for a permi for this site. | implementing the drought action that is linked to its own stocks rather than regional stocks | | This reservoir was an Environment Agency option in the drought of 2018 and the Environment Agency applied to Defra for a drought order, however, due to sufficient rainfall following the Agency applied to Defra for a drought order, however, due to sufficient rainfall following the application it was not granted. The Environment Agency has since reviewed the guidance and as application it was not granted. The Environment Agency has since reviewed the guidance and as application it was not granted. The Environment Agency has since reviewed the guidance and as application it was not granted. The Environment Agency has since reviewed the guidance and as application it was not granted. The Environment Agency option in the drought off of the Strike Theorem Agency applied to Park |

Appendix 4.3 South Area

Yorkshire Water Drought Plan supply side options: South Area Reservoir Group
Type of option: Reservoir group: compensation reduction
Location / Area affected or whole supply zone: Grid SWZ South Area
Summary discription of actions: Compensation flows reduced to half or one third of normal flows to preserve reservoir stocks and extend the period
that compensation flows can be maintained. Reductions will be considered on a selective basis as some releases are more critical than others
Preceding actions: Publicity campaign and temporary use bans in force (April to September)

| Option name | South Area Reservoir 1 | South Area Reservoir 2 | South Area Reservoir 3 | South Area Reservoir 4 | South Area Reservoir 5 | South Area Reservoir 6 | | |
|---|---|--|---|--|---|--|--|--|
| | Triggers – Risk of shortage of supply established | | Triggers – Risk of shortage of supply established | Triggers – Risk of shortage of supply established | Triggers – Risk of shortage of supply established | | | |
| Timeda | 1.Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) | Triggers – Risk of shortage of supply established: | Inggies – Nox or shortage of supply established LRegional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" th="" weeks)<=""><th>Inggiers – Risk of Short age of Supply established 1.Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</th><th>1.Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" th="" weeks)<=""><th>Triggers – Risk of shortage of supply established:</th></normal></th></normal> | Inggiers – Risk of Short age of Supply established 1.Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) | 1.Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" th="" weeks)<=""><th>Triggers – Risk of shortage of supply established:</th></normal> | Triggers – Risk of shortage of supply established: | | |
| ingger(s) | 2. Negional Stocks nave crossed prought control line and remained below for more than 4 weeks 3. For South Area Reaservoirs 1, 3,4 and 5, which have variable compensation flows dependent or control lines, we will only reduce the compensation when the the lower release is in effect. | Regional Stocks <normal (within="" 1-<br="" and="" approaching="" control="" drought="" line="">in weeks)</normal> Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks | For South Area Reaservoirs 1, 3,4 and 5, which have variable compensation flows dependent or | 3. For South Area Reaservoirs 1, 3,4 and 5, which have variable compensation flows dependent o | Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks on 3. For South Area Reaservoirs 1, 3,4 and 5, which have variable compensation flows dependent or | Regional Stocks <normal (within="" 1-weeks)<="" and="" approaching="" control="" drought="" li="" line=""> Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks </normal> | | |
| | See additional information below on downstream river users. | | control lines, we will only reduce the compensation when the the lower release is in effect. | control lines, we will only reduce the compensation when the the lower release is in effect. | control lines, we will only reduce the compensation when the the lower release is in effect. | | | |
| Most likely authorisation in a drought (permit or order) | Permit | Permit | Permit | Permit | Permit | Permit | | |
| Current Legal Requirement (Compensation release, minimum | Compensation release of 2.70 MI/d when stocks are below a control line specified in the licence | Maintained flow: | Compensation release of 16.00 MI/d when stocks are below a control line specified in the licenses | Compensation release of 9.10 MI/d when stocks are below a control line specified in the licence | e Compensation release of 18.00 MI/d when stocks are below a control line specified in the licence | The licence agreement requires a 10 30 MI/d compensation release from a point downstream of | | |
| maintained flow or authorised abstraction limit) | agreement or 4.00 MI/d when above this control line. | 11.82 Ml/d (May-Oct) 9.09 Ml/d (Nov-Apr) | agreement or 21.70 MI/d when above this control line | agreement or 12.00 MI/d when above this control line | agreement or 28.00 MI/d when above this control line | the reservoir however, under normal operations the release is made from the reservoir | | |
| Deployable Output of action - Variable depending on conditions and duration | Reduce compensation release when stocks are below the specified control line by 50% to 1.35 MI/d providing 1.35 MI/d benefit | Normal Maintained flow 9.09 winter, 11.82 summer. Reduction of winter flow assessed. Reduce by 50% to 4.55 providing 4.55 benefit | Reduce compensation release when stocks are below the specified control line by 50% to 8.00 MI/d providing 8.00 MI/d benefit | Reduce compensation release when stocks are below the specified control line by 50% to 4.55 MI/d providing 4.55 MI/d benefit | Reduce compensation release when stocks are below the specified control line by 50% to 9.0 MI/d providing 9.0 MI/d benefit | Reduce compensation release when stocks are below the specified control line by 50% to 5.15 MI/d providing 5.15 MI/d benefit | | |
| of drought permit Action 2 Description | Reduce compensation release when stocks are below the specified control line by 67% to 0.89 MI/d providing a 1.81 MI/d benefit | Reduce by 67% to 3.00 providing 6.09 benefit | Reduce compensation release when stocks are below the specified control line by 67% to 5.28 MI/d providing 10.72 MI/d benefit | Reduce compensation release when stocks are below the specified control line by 67% to 3.00 MI/d providing 6.10 MI/d benefit | Reduce compensation release when stocks are below the specified control line by 67% to 5.94 MI/d providing 12.06 MI/d benefit | Reduce compensation release when stocks are below the specified control line by 67% to 3.40 MI/d providing 6.90 MI/d benefit | | |
| Implementation timetable Preparation time, time of year effective, duration | | Time of year e | ffective: implemented when reservoir stocks approach drought control line so could be effective as | eriod 5-6 weeks (advertisement, representation, enquiry, granting) by time of year. Compensation release reductions may be phased to minimise effect on downstrea frestriction typically 12 weeks | am watercourses. | | | |
| Permissions required and constraints Including details of liaison with bodies responsible for giving any permits or approvals | | | A public enquir | uired following application of a drought order or permit. rmay be required. ronment Agency. | | | | |
| Risks associated with option | | | Reduction in compensation releases / maintained flows have potential environmental impacts. The | sese will be assessed through the Environmental Assessment Report submitted with the application | n. | | | |
| Risk to the Environment | Scott Dyke and River Don. | River Don. | Little Don River and River Don. | | nt: Hydrological and water quality assessment identified a zone of impact of the drought option or River Losley and River Don. | River Rivelin and River Loxiey. | | |
| (Major/Moderate/Minor or uncertain) | The assement concluded that there would be Major impacts on hydrology (river flow and level and a Moderate risk to water quality associated with this option. The overall impact or environmental features has been assessed as Major. | (s) The assement concluded that there would be Major impacts on hydrology (river flow and levelen and an Moderate risk to water quality associated with this option. The overall impact or environmental features has been assessed as Major. | The assement concluded that there would be Major impacts on hydrology (river flow and leve land a Moderate risk to water quality associated with this option. The overall impact o environmental features has been assessed as Major. | and a Moderate risk to water quality associated with this option. The overall impact of environmental features has been assessed as Major. | (el) The assement concluded that there would be Major impacts on hydrology (river flow and leve on and a Moderate risk to water quality associated with this option. The overall impact o environmental features has been assessed as Major. | The assement concluded that there would be Major impacts on hydrology (river flow and levell) and a Moderate risk to water quality associated with this option. The overall impact on environmental features has been assessed as Major. | | |
| Summary of likely environmental impacts include details for features of moderate and major sensitivity and minor sensitivity features from designated sites | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NRC and Notable Fish – numerous (Minor to Major) White-Clawed crayfins (Moderate) Otter (Negligible) Wifb compliance *Macroinvertebrates (Moderate) **Hacroinvertebrates (Moderate) **Fish (Major) Priority habitat 452749/447335 (Negligible) | of environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NEEC and Notable Fish numerous (Minor to Major) White-clawed crayfish (Indiorate) Oreodytes dowsii (Minor) Oreodytes dowsii (Minor) Oreodytes dowsii (Minor) Orter (Negligible) Water vote (Moderate) WFD compliance *-Macroinvertebrates (Moderate) *-Fish (Najor) Priority habitat 452749/447335 (Negligible) | Environmental assessment has identified potential environmental sensitivities (prior timitigation) within the zone of influence to: NERC and Notable Fsh —numerous (Minor to Major) White clawed crayfish (Moderate) Otter (Negligible) Water vole (Moderate) WeFD compliance +Fsh (Major) +Macroinvertebrates (Moderate) Phorory habitant 452786/447335 (Negligible) | Environmental assessment has identified potential environmental sensitivities (prior trivilgation) within the zone of influence to: NREC and Notable Fish – numerous (Minor to Major) White-Calwed Czayfish (Moderate) Solus subvolosces (Minor) Otter (Negligible) WFD compliance WFD compliance *#Six (Midor) Priority habitat 452786/447335 (Negligible) | to Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: AERC and Notable Fish – numerous (Moderate to Major) White-claved crayfish (Major) Otter (Neighight) Water voie (Moderate) **WFD compliance **Macroinvertebrates (Moderate) **Fish (Major) Fish (Major) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NERC and Morable Fish - numerous (Moderate to Major) White clawed crayfich (Major) Siyya terminalis (Minor) Citer (Negligible) Water vole (Moderate) WPD compliance WPD compliance WFD compliance *Fish (Major) Priority habitat 452749/447335 (Negligible) | | |
| Baseline information used | Environmental assessment used YWS and EA data and information on: reservoir management | Environmental assessment used YWS and EA data and information on: reservoir management, measured reservoir outflow, water resource modelling of outflow in critical drought years, gauged river flows and levels; routine WFD water quality and flow pressures (abstraction licence and discharge consent registers), YWS STW information; macroinvertebrate sampling data and LIFE, WHPTNATXA and WHPTASPTEQI scores, fish abundances from monitoring surveys, Fisheries Classification Scheme (2) data and publicly available data on designated sites, distributions of NERC Act Section 41 priority species, distribution of Invasive and Non-Native Species and recreational resources, in addition to local EA / YWS knowledge. | | | | | | |
| Summary of additional baseline monitoring requirements | | Details of additional baselin | e monitoring requirements, are incorporated within the Environmental Monitoring Plan, listing the | features to be monitored and methods used; location, timing and frequency of surveys; and who | will undertake the monitoring. | | | |
| Mitigation measures | | Mitigation measures and accompanying monitoring have bee | en identified for serious impacts of the drought option (features of moderate and major sensitivitie | s, and minor sensitivities to designated sites - as listed above) through discussion with the EA. Deta | ails are incorporated within the Environmental Monitoring Plan | | | |
| Impact on other activities e.g. fisheries, industry etc | Screening Identified further impacts: •Angling – Nether Mill fishery (uncertain) | Screening identified further impacts: •Angling – River Don (uncertain) | Screening identified no potential impacts. | Screening identified further impacts: Angling - Ewden Beck (uncertain) | Screening identified further impacts: Angling – River Loxley (uncertain) | Screening identified further impacts: Angling – River Rivelin (uncertain) | | |
| WFD Compliance | associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 2: Impacts on macroinvertebrates would be moderate and impacts on fish would be major. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 3 and 4: Impacts on macroinvertebrates and fish would be moderate. The impacts would | Reach 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 2: Impacts on macroinvertebrates would be moderate and impacts on fish would be major. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 3 and 4: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 5: Impacts on macroinvertebrates would be moderate and impacts on fish would be major. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 2 and 3: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 4: Impacts on macroinvertebrates would be moderate and impacts on fish would be major | Reach 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 2: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 3: Impacts on macroinvertebrates would be moderate and impacts on fish would be major The impacts would not be associated with WFD deterioration based on the criteria outlined in the criteria outlined in the Environmental Assessment Report. | Reach 1 and Reach 2: Impacts on macroinvertebrates would be moderate and impacts on fish would be major. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 3: Impacts on macroinvertebrates would be moderate and impacts on fish would be major. The impacts would not be associated with WFD deterioration based on the criteria outlined in the r., ferrormental Assessment Report. | | | |
| Additional information | The control lines are being reviewed as part of an AMP7 investigation | The compensation is being reviewed as part of an AMP7 investigation | An AMP7 investigation will review the balancing of the Little Don reservoirs. If this results in change to the drought options we will provide an update in annual reviews. | N/A | NA | N/A | | |

Appendix 4.4 South West Area

Yorkshire Water Drought Plan supply side options: South West Area Reservoir Group
Type of option: Reservoir group - compensation reduction
Location / Area affected or whole supply zone: Grid SWZ South West Area
Summary discription of actions: Compensation flows reduced to half or one third of normal flows to preserve reservoir stocks and extend the period that
compensation flows can be maintained. Reductions will be considered on a selective basis as some releases are more critical than others
Preceding actions: Publicity campaign and temporary use bans in force (April to September)

| Preceding actions: Publicity campa | aign and temporary use bans in | force (April to September | | | | |
|---|-------------------------------------|---|---|--|--|--|
| Option name | | South West Area Reservoir 1 | South West Area Reservoir 2 | South West Area Reservoir 3 | South West Area Reservoir 4 | South West Reservoir 6 |
| | | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: |
| Trigger(s) | | Regional Stocks <normal (within="" 1-2="" 4="" and="" approaching="" below="" control="" crossed="" drought="" for="" have="" line="" more="" regional="" remained="" stocks="" td="" than="" weeks)="" weeks<=""><td>Regional Stocks <normal (within="" 1-2="" 4="" and="" approaching="" below="" control="" crossed="" drought="" for="" have="" line="" more="" regional="" remained="" stocks="" td="" than="" weeks)="" weeks<=""><td> Individual Resevoir Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" li="" line="" weeks)<=""> Individual Resevoir Stocks have crossed Drought Control Line and remained below for more than 4 </normal></td><td>Regional Stocks <normal (within="" 1-2="" 4="" and="" approaching="" below="" control="" crossed="" drought="" for="" have="" line="" more="" regional="" remained="" stocks="" td="" than="" weeks)="" weeks<=""><td> Individual Resevoir Stocks «Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Individual Resevoir Stocks have crossed Drought Control Line and remained below for more than 4 </td></normal></td></normal></td></normal> | Regional Stocks <normal (within="" 1-2="" 4="" and="" approaching="" below="" control="" crossed="" drought="" for="" have="" line="" more="" regional="" remained="" stocks="" td="" than="" weeks)="" weeks<=""><td> Individual Resevoir Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" li="" line="" weeks)<=""> Individual Resevoir Stocks have crossed Drought Control Line and remained below for more than 4 </normal></td><td>Regional Stocks <normal (within="" 1-2="" 4="" and="" approaching="" below="" control="" crossed="" drought="" for="" have="" line="" more="" regional="" remained="" stocks="" td="" than="" weeks)="" weeks<=""><td> Individual Resevoir Stocks «Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Individual Resevoir Stocks have crossed Drought Control Line and remained below for more than 4 </td></normal></td></normal> | Individual Resevoir Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" li="" line="" weeks)<=""> Individual Resevoir Stocks have crossed Drought Control Line and remained below for more than 4 </normal> | Regional Stocks <normal (within="" 1-2="" 4="" and="" approaching="" below="" control="" crossed="" drought="" for="" have="" line="" more="" regional="" remained="" stocks="" td="" than="" weeks)="" weeks<=""><td> Individual Resevoir Stocks «Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Individual Resevoir Stocks have crossed Drought Control Line and remained below for more than 4 </td></normal> | Individual Resevoir Stocks «Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Individual Resevoir Stocks have crossed Drought Control Line and remained below for more than 4 |
| Most likely authorisation in a drought (permit or order) | | | | weeks | | weeks |
| Current Legal Requirement (Compensation release, minimum maintained flow or authorised abstraction limit) | | Permit Compensation release 2.70 Ml/d | Permit Compensation release: Jan Sep - 3 78M/d at all reservoir levels Oct-Dec 15.12M/d, or 7.56 M/d when stocks below 50%. | Permit Componsation release; Jan Sep 3.24 My/d at all reservoir levels Oct-Dec 12.96 My/d or 6.50 My/d when stocks below 50% | Permit Current compensation release of 3.42 Mil/d under an "enforcement position" agreed with the Environment Agency (statutory requirement for 82,500 gallons/hour from 6.00 am to 5.45 pm Mon - Fri and 6.00 am to 11:00 am Saturday) | Permit Compensation release 3.02 MI/d from Castle Carr but legal obligation is from Warley Moor |
| Deployable Output of action - Variable depending on conditions and duration | le | Reduce compensation release by 50% to 1.35Ml/d giving 1.35Ml/d benefit. | Compensation release reduced; Jan. Sgpt by 50% to 1.89 M/d providing a benefit of 1.89 or Oct- Dec by 50% to 3.78 M/d providing a benefit of 3.78 M/d when stocks below 50% | Compensation release refused; lan-dept by 50% to 1.52 MI/d providing a benefit of 1.62MI/d; or Oct-Orc by 50% to 3.25 MI/d providing a benefit of 3.25 MI/d when stocks below 50% | Reduce the current compensation release by 50% to 1.71 M//d providing a benefit of 1.71 M//c The permit application would request a temporary change to the statutory requirement. | Compensation release reduced by 50% to 1.51 MI/d providing a benefit of 1.51 MI/d |
| of drought permit | Action 2 Description | Reduce compensation release by 67% to 0.89Ml/d providing 1.81Ml/d benefit | Compensation release reduced; Ian-Sept by 67% to 1.25 Mil/d providing a benefit of 2.53 Mil/d; or Oct- Dec reduce by 67% to 2.49 Mil/d providing a benefit of 5.07 mil/d when stocks below 50%. | Compensation release reduced; Jan-Sept by 67% to 1.07 Mild providing a benefit of 2.17 ML/d; or Oct- Dec by 67% to 2.15 MI/d providing a benefit of 4.36 when stocks below 50% stocks | Reduce the current compensation release by 67% to 1.13 M/d, providing a benefit of 2.29 M/d. The permit application would request a temporary change to the statutory requirement. | Compensation release reduced by 67% to 1.00 MI/d providing a benefit of 2.02 MI/d |
| Implementation timetable Preparation time, time of year effectiv | ive, duration | Preparation time: 4 weeks prior to advertising, implementation period 5-6 weeks (advertisement, re- Time of year effective: implemented when reservoir stocks approach drought control line so could b Ouration: Minimum period of restriction typically 12 weeks | representation, enquiry, granting) e effective any time of year. Compensation release reductions may be phased to minimise effect on do | ownstream watercourses. | | |
| Permissions required and constraints Including details of liaison with bodies permits or approvals | i es responsible for giving any | Permission from Defra or the Environment Agency required following application of a drought order A public enquiry may be required. Lusie with Environment Agency. | r or permit. | | | |
| Risks associated with option | | Reduction in compensation releases / maintained flows have potential environmental impacts. The | se will be assessed through the Environmental Assessment Report submitted with the application. | | | |
| Risk to the Environment (Major/Moderate/Minor or uncertain) | | Hydrological and water quality assessment identified a zone of impact of the drought option on: Gorphe Lower Brook and Graining Water. The assement concluded that these would be Major impact on hydrology (river flow and level) and Modorater risk to write quality associated with this option. The overall impact on environmental features has been assessed as Major. | hydrological and water quality assessment identified a zone of impact of the drought option on: Alconden Water, Hebben Water and the River Calder. The assement concluded that there would be Major impact on hydrology (river flow and level) and wolderarter fick outer quality associated with this option. The overall impact on environmental reatures has been assessed as Major. | hydrological and water quality assessment identified a zone of impact of the drought option on: Graining Water, Hebden Water and the River Calder. The assement concluded that there would be Major impact on hydrology (river flow and level) and Moderater risk to write quality associated with this option. The overall impact on environmental features has been assessed as Major. | Hydrological and water quality assessment identified a zone of impact of the drought option on: hebbie Brook. The assement concluded that there would be Major impact on hydrology (river flow and level) and Moderate rick to write quality associated with this option. The overall impact on environmental features has been assessed as Moderate. | Hydrological and water quality assessment identified a zone of impact of the drought option on: Luddenden Brook. The assement concluded that there would be Major impacts on hydrology (river flow and level) and a Moderater risk to water quality associated with this option. The overall impact on environmental features has been assessed as Major. |
| Summary of likely environmental impuniculate details for features of moderates sensitivity features from designated sit | ate and major sensitivity and minor | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NEK and Notable Fish - numerous (Minor to Major) White-Cuswed craftly flooderate) Otter (Neglipible) Water vole (Moderate) WFD compliance Macroinvertebrates (Minor) Finite (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: Ottor (Negligible) Water vole (Moderate) Water | Environmental assassment has identified potential environmental sensitivities (prior to mitigation) within the tome of influence to Mithic-deute of cryptin (Moderate) Otter (Negliphia) water vole (Moderate) Helophorus straigfrons (Minor) NRC and Notable Fish - numerous (Minor to Major) WFD compliance Macciomertebrates (Minor) Macciomertebrates (Minor) Fish (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NERC and Notable Fish- numerous (Minor to Moderate) Otter (Negligible) WED compliance Macroinverborites (Moderate) Trip (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: White-clawed crayfish (Moderate) Otter (Negligible) NREC and Motable Fish – numerous (Minor to Major) NREC and Motable Fish – numerous (Minor to Major) WFD compliance Minor Compli |
| Baseline information used | | | ssured reservoir outflow, water resource modelling of outflow in critical drought years, gauged river flow. Act Section 41 priority species, distribution of Invasive and Non-Native Species and recreational resource. | | ce and discharge consent registers), YWS STW information; macroinvertebrate sampling data and LIFE | , WHPTNATXA and WHPTASPT EQI scores, fish abundances from monitoring surveys, Fisheries |
| Summary of additional baseline monit | itoring requirements | Details of additional baseline monitoring requirements, are incorporated within the Environmental I | Monitoring Plan, listing the features to be monitored and methods used; location, timing and frequency | r of surveys; and who will undertake the monitoring. | | |
| Mitigation measures | | Antiq | gation measures and accompanying monitoring have been identified for serious impacts of the drought | option (features of moderate and major sensitivities, and minor sensitivities to designated sites - as is | ted above) through discussion with the EA. Details are incorporated within the Environmental Monito | ring Plan |
| Impact on other activities e.g. fisheries, industry etc | | Screening identified possible impacts on: Angling – River Worth (uncertain) | Screening identified no further impacts. | Screening identified possible impacts on: Angling - River Calder (uncertain) | Screening identified no further impacts | Screening identified no further impacts |
| WFD Compliance | | Reach 1 and Reach 2: Impacts on fish would be minor and impacts on macroinvertebrates are not applicable for this waterbody. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 3: Impacts on fish would be moderate and impacts on macroinvertebrates are not applicable for this waterbody. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 4 and 5: Impacts on fish and macroinvertebrates would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 5: Impacts on fish and macroinvertebrates would be minor. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | on would not be associate dwith WTD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 2: Impacts on fish would be moderate and impacts on macroinvertebrates are not applicable for this waterbody. The impacts would not be associated with WTD deterioration based on the criteria outlined in the Environmental Assessment Report. | N/A.The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 2: Impacts on macroinvertebrates and fish would be minor. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFO deterioration based on the orders outlined in the Environmental Assessment Report. |
| Additional information | | NA | N/A | This reservoir cannot be supported by any other reservoirs therefore it has a trigger for implementing the drought action that is linked to its own stocks rather than regional stocks. However, if the regional trigger was met before the local trigger we would still apply for a permit for this site. | s NA | This reservoir cannot be supported by any other reservoirs therefore it has a trigger for implementing the drought action that is linked to its own stocks rather than regional stocks. However, if the regional trigger was met before the local trigger we would still apply for a permit for this site. |

| South West Area Reservoir 7 | South West Area Reservoir 8 | South West Area Reservoir 10 | South West Area Reservoir 11 | South West Area Reservoir 12 | South West Area Reservoir 13 |
|--|--|---|--|---|--|
| Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: |
| 1. Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""><td>1.Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""><td>Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""><td>Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</td><td>1. Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) 1. Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</td><td>Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""></normal></td></normal></td></normal></td></normal> | 1.Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""><td>Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""><td>Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</td><td>1. Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) 1. Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</td><td>Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""></normal></td></normal></td></normal> | Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""><td>Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</td><td>1. Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) 1. Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks)</td><td>Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""></normal></td></normal> | Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) | 1. Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) 1. Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) | Regional Stocks <normal (within="" 1-2="" and="" approaching="" control="" drought="" line="" td="" weeks)<=""></normal> |
| 2. Regional Stocks Anomaic Control Line and approximating prought Control Line within 12-2 weeks | Regional Stocks Normal Control Line and approaching brought Control Line (within 1-2 weeks) Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks | 2.Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks | Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks | 2.Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks | 2.Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks |
| Permit | Permit | Condition on a permit application for South West Areas 11 and 12 | Permit | Permit | Permit |
| | | | | | |
| Compensation release is varied seasonally; Nov-lan 10.60 Myld FebMay and Aug-Nor.50 M/I/d June 4.50 M/I/d Juny 3.20 M/I/d | Compensation release is varied seasonally; Now-Mar 6.50 M/d Ap+May and Aug-Octs 40 M/d Jun - Jul 4.80 M/d | Currently operating at a maintained flow of 18.00 MI/d under a flow trial agreement | Current compensation release is 3.41M//d under a flow trial agreement with the Environment Agency (statutory compensation release is 18.01 M//d between 06.00 & 18.00 on Mon to Sat & 3.410 MI/d all other hours) | Normal compensation release 5.50 M/d (stated on authorisaing Act as 889,000 gallons/day to stream 8.400,000 gallons/day to mill continuous) | Normal compensation release 6.92 MI/d (defined in Act as 1,500,000 gallons/day if abstracting) |
| Reduce the current compensation release by 50% to: Non-lans. 3.00 M/d providing a benefit of 5.30 M/d Non-lans. 3.00 M/d providing a benefit of 5.30 M/d Land Company of the Company of | Reduce the current compensation release by 50% to; Nov-March 3.45 Mild providing a benefit of 3.45 Mild Apr-May and Aug-Cot 2.70 Mild providing a benefit of 2.70 Mild Jun-Jul 2.04 Mild powding a benefit of 2.40 Mild The permit application would request a temporary change to the statutory requirement. | Reduce maintained flow by 50% to 9.00 MI/d providing a 9.00 MI/d benefit | Flow trial agreement release of 3.41 MI/d reduced by 50% to 1.71 MI/d providing 1.71 MI/d benefit Fermit application would request a temporary change to the statutory requirement to a release half the current operating volume | Compensation release reduced by 50% to 2.95 MI/d providing 2.95 MI/d benefit | Compensation release reduced by 50% to 3.41 MI/d providing 3.41 MI/d benefit (release only required if abstracting) |
| Reduce the current compensation release by 67% to: Nov-lan 3.50 M/Ig providing a benefit of 7.10 M/Ig Feb-May and Aug-Nov 1.51 M/Ig providing a benefit of 3.89 M/Ig Iune 1.40 M/Ig providing a benefit of 3.00 M/Ig Iune 1.40 M/Ig providing a benefit of 2.14 M/Ig The permit application would request a temporary change to the statutory requirement. | Reduce the current compensation release by 67% to: Nov-March 2.28 Mild providing a benefit of 4.62 Mild Apr-May and Aug-Cost 1.78 Mild providing a benefit of 3.62 Mild Lun-ai 1.58 Mild providing a benefit of 3.22 Mild Lun-ai 1.58 Mild providing a | Reduce maintained flow by 67% to 6.00 MI/d providing 12.00MI/d benefit | Flow trial agreement release of 3.41 MI/d reduced by 67% to 1.13 MI/d providing 2.28 MI/d benefit Fermit application would request a temporary change to the statutory requirement to release one third of the current operating volume | Compensation release reduced by 67% to 1.95 MI/d providing 3.95 MI/d benefit | Compensation release reduced by 67% to 2.25 MI/d providing 4.57 MI/d benefit (release only required if abstracting) |
| Preparation time: 4 weeks prior to advertising, implementation period 5-6 weeks (advertisement, representation, enquiry, granting) Time of year effective: implemented when reservoir stocks approach drought control line so could be effective any time of year. Compensation release reductions may be phased to minimise effect Duration: Minimum period of restriction typically 12 weeks | on downstream watercourses. | Preparation time: 4 weeks prior to advertising, implementation period 5-6 weeks (advertisement, r. Time of year effective: implemented when reservoir stocks approach drought control line so could Duration: Minimum period of restriction typically 12 weeks | representation, enquiry, granting) be effective any time of year. Compensation release reductions may be phased to minimise effect on do | wnstream watercourses. | |
| Permission from Defra or the Environment Agency required following application of a drought order or permit. A public enquiry may be required. Llatse with Environment Agency. | | Permission from Defra or the Environment Agency required following application of a drought critic A public enquiry may be required. Liable with Environment Agency. | or or permit. | | |
| Reduction in compensation releases / maintained flows have potential environmental impacts. These will be assessed through the Environmental Assessment Report submitted with the application. | | Reduction in compensation releases / maintained flows have potential environmental impacts. Th | ese will be assessed through the Environmental Assessment Report submitted with the application. | | |
| itydrological and water quality assessment identified a zone of impact of the drought option on: Digley Brook and River Holme. | Hydrological and water quality assessment identified a zone of impact of the drought option on: River Holme. | Hydrological and water quality assessment identified a zone of impact of the drought option on: River Ryburn , Booth Dean Clough, Butts Clough, Booth Dean Clough, River Ryburn and the River Calder. | Hydrological and water quality assessment identified a zone of impact of the drought option on: Booth Dean Clough and the River Ryburn. | Hydrological and water quality assessment identified a zone of impact of the drought option on: River Ryburn . | Hydrological and water quality assessment identified a zone of impact of the drought option on: Cragg Brook. |
| The assement concluded that there would be Major impacts on hydrology (river flow and level) and a Moderate risk to water quality associated with this option. The overall impact on environmental features has been assessed as Major. | The assement concluded that there would be Major impacts on hydrology (river flow and level) and a Moderater risk to water quality associated with this option. The overall impact on environmental features has been assessed as Major. | The assement concluded that there would be Major impacts on hydrology (river flow and level) an Moderate risk to water quality associated with this option. The overall impact on environmental features has been assessed as Moderate. | d The assement concluded that there would be Major impacts on hydrology (fiver flow and level) and a Moderater risk to water quality associated with this option. The overall impact on environmental features has been assessed as Major. | The assement concluded that there would be Major impacts on hydrology (river flow and level) and Moderater risk to water quality associated with this option. The overall impact on environmental features has been assessed as Major. | a The assement concluded that there would be Major impacts on hydrology (river flow and level) and a Moderatire risk outer quality associated with this option. The overall impact on environmental features has been assessed as Major. |
| Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NEEC and Notable Fish – numerous (Minor to Major) Whithe clawset Carplich (Moderate) Otter (Moderate) WFD Compliance Fish (Moderate) Invertebates (Moderate) Invertebates (Moderate) Conwell Bottom INI/MVS (Moderate), Southern Washibards LNR (Minor) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: KEE and hotable Fish – numerous (Minor to Major) Mikine-clawed crytin (Moderate) Otter (Moderate) WPD Compliance Fish (Moderate) Middenate) Middenate) Middenate(Maconiverteethates (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: Fish – brown trout, bullhead and grayling (Minor to Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: White claved crayfish (Moderate) Difference of the control of the co | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NRSC and Notable Fish – numerous (Minor to Major) Otter (Neglipible) WHH-clawed crayfuls (Moderate) WFD compliance Macroinvertebrates (Moderate) Fish (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: WETO compliance Maccoinvertehrates (Moderate) Fish (Moderate) NERC and Notable Fish—numerous (Minor to Major) |
| Environmental assessment used YWS and EA data and information on: reservoir management, measured reservoir outflow, water resource modelling of outflow in critical drought years, gauged riverse and discharge consent registers). YWS STW information; macroinvertebrate sampling data and LIFE, WHEPTNATNA and WHEPTAST EQI scores, fish abundances from monitoring surveys, Fisher Act Section 41 priority species, distribution of Invasive and Non-Native Species and recreational resources, in addition to local EA / YWS knowledge. | | | asured reservoir outflow, water resource modelling of outflow in critical drought years, gauged river flow oll scores, fish abundances from monitoring surveys, Fisheries Classification Scheme (2) data and publicly a YWS knowledge. | | nce and discharge consent registers), |
| Details of additional baseline monitoring requirements, are incorporated within the Environmental Monitoring Plan, listing the features to be monitored and methods used; location, timing and frequency and frequency and provided the second s | sency of surveys; and who will undertake the monitoring. | Details of additional baseline monitoring requirements, are incorporated within the Environmental | Monitoring Plan, listing the features to be monitored and methods used; location, timing and frequency | of surveys; and who will undertake the monitoring. | |
| Mitigation measures and accompanying monitoring have been identified for serious impacts of the drought option (features of moderate and major sensitivities, and minor sensitivities to desi Environmental Monitoring Plan | gnated sites - as listed above) through discussion with the EA. Details are incorporated within the | Mitigation measures and accompanying monitoring have been identified for serious impacts of the | drought option (features of moderate and major sensitivities, and minor sensitivities to designated sites | - as listed above) through discussion with the EA. Details are incorporated within the Environmental | Monitoring Plan |
| Screening identified no further impacts. | Screening identified no further impacts. | Screening identified possible impacts on: Canoeing -River Ryburn and Calder (TBC) | Screening identified possible impacts on: Angling - River Ryburn | Screening identified possible impacts on: Angling - River Ryburn | Screening identified no further impacts. |
| Reach 1, Reach 2 and Reach 3: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 3 and Reach 4: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 5: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 6: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1, Reach 2 and Reach 3: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the furvionmental Assessment Report. Reach 3 and Reach 4: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 6: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WTD deterioration based on the criteria outlined in the Environmental Assessment Report. Reaches 2 and 3: Impacts on macroinvertebrates and fish fish would be moderate. The impacts wo not be associate dwith WTD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1 and Reach 2: Impacts on fish and macroinvertebrates would be moderate. The Impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 3: Impacts on fish and macroinvertebrates would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 4: Impacts on fish and macroinvertebrates would be minor. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Back 2: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Back 3: Impacts on fish and macroinvertebrates would be minor. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1 and Reach 2: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reselb 1: Impacts on this and macroinvertebrates would be minor. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. |
| N/A | NA | N/A | N/A | N/A | N/A |

| South West Area Reservoir 14 | South West Area Reservoir 15 | South West Area Reservoir 16 | South West Area Reservoir 17 | South West Area Reservoir 18 | South West Area Reservoir 19 | South West Area Reservoir 20 |
|--|--|--|--|--|---|--|
| The state of the s | Time Bill of heaten of control whilehed | Triangle Print of the state of court but blished | The state of the s | No. of the state o | | The state of the s |
| Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: | Triggers – Risk of shortage of supply established: |
| Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks | Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks | Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks | 1.Regional Stocks <normal (within="" 1-2="" 2.regional="" 4="" and="" approaching="" below="" control="" crossed="" drought="" for="" have="" line="" more="" remained="" stocks="" td="" than="" weeks)="" weeks<=""><td> Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks </td><td>1.Regional Stocks <normal (within="" 1-2="" 2.regional="" 4="" and="" approaching="" below="" control="" crossed="" drought="" for="" have="" line="" more="" remained="" stocks="" td="" than="" weeks)="" weeks<=""><td> Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks </td></normal></td></normal> | Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks | 1.Regional Stocks <normal (within="" 1-2="" 2.regional="" 4="" and="" approaching="" below="" control="" crossed="" drought="" for="" have="" line="" more="" remained="" stocks="" td="" than="" weeks)="" weeks<=""><td> Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks </td></normal> | Regional Stocks < Normal Control Line and approaching Drought Control Line (within 1-2 weeks) Regional Stocks have crossed Drought Control Line and remained below for more than 4 weeks |
| | | | | | | |
| Permit | Permit | Permit | In agreement with Canal and Rivers Trust | Permit | Permit | Permit |
| Compensation release of 2.64 M/d (defind in Act as 580,000 gallons per day) | Compensation release of 3.49 MI/d (defined in Act as 768,000 gallons/day continuous) | Compensation release of 1.36 Mi/d (defined in Act as 300,000 gallons/day continuous) | Current compensation release is 3.48 MI/d average (3.09MI/d maximum) (average value defined in Act as 280 million gallons/year) | Current compensation release is 8.07 Mi/d under an "enforcement position" agreed with the Environment Agency; (statutory requirement is 2,000 galls/minute between 05.00 & 18.00. 465 galls/minute between 18.00 & 06.00) | Maintained flow requirement of 7.274MI/d (defined in the Act as as 1,600,000 gallons/day maintained flow) | Current compensation release is 2.66 M/ld under an "enforcement position" agreed with the Environment Agency (the statutory requirement is SSI galls/minute between 06:00 & 18:00 Mon – Skt) |
| Compensation release reduced by 50% to 1.32 MI/d providing 1.32 MI/d benefit | Compensation release reduced by 50% to 1.75 MI/d providing 1.75 MI/d benefit | Compensation release reduced by SDN to 0.68 MI/d providing 0.68 MI/d benefit | Compensation release reduced by 50% to 1.74Ml/d providing up to 1.74 Ml/d | Current compensation release reduced by 50% to 4.04 M/Jd providing 4.04 M/Jd banefit Permit application would request a temporary change to the statutory requirement to a release half the current operating volume | Compensation release reduced by 50% to 3.64 MI/d providing 3.64 MI/d benefit | Current compensation release reduced by 50% to 1.33 M/d providing 1.33 M/d benefit. Permit application would request a temporary change to the statutory requirement to a release half the current operating volume. |
| Compensation release reduced by 67% to 0.87 MI/d providing 1.77 MI/d benefit | Compensation release reduced by 67% to 1.15 M//d providing 2.34 Mi/d benefit | Compensation release reduced by 67% to 0.45 MI/d providing 0.91 MI/d benefit | Compensation release reduced by 67% to 1.16 MI/d providing up to 2.32 MI/d | Current compensation release reduced by 67% to 2.66 MI/d providing 5.41 MI/d benefit Permit application would request a temporary change to the statutory requirement to release a third of the current operating volume | Compensation release reduced by 67% to 2.40 MI/d providing 4.87 MI/d benefit | Compensation release reduced by 67% to 0.88 M/d providing 1.78 M/d benefit Permit application would request a temporary change to the statutory requirement to a release one third the current operating volume |
| | regulation wills: wester join to during any implementation period by a weeks growing intermed any implementation period by a weeks growing intermediation period by a week growing intermediation period by a weeks growing intermediatio | | | | Preparation time: 4 weeks prior to advertising, implementation period 5-6 weeks (advertisement, re Time of year effective: implemented when reservoir stocks approach drought control line so could be Compensation release reductions may be plasted to minimize effect on downstream watercourses. Duration: Minimum period of restriction typically 12 weeks | |
| | Dermission from Defra or the Environment Agency required following application of a drought order A public enquiry may be required. Liste with Environment Agency. | or permit. | | | Permission from Defra or the Environment Agency required following application of a drought order A public enquiry may be required. Listic with Environment Agency. | or permit. |
| | Reduction in compensation releases / maintained flows have potential environmental impacts. The | e will be assessed through the Environmental Assessment Report submitted with the application. | | | Reduction in compensation releases / maintained flows have potential environmental impacts. These will be assessed through the Environmental Assessment Report submitted with the application | n. |
| Hydrological and water quality assessment identified a zone of impact of the drought option on: Elphin Brook and Turvin Clough. | Hydrological and water quality assessment identified a zone of impact of the drought option on: Black Brook. | Hydrological and water quality assessment identified a zone of impact of the drought option on: Bradshaw Clough. | Hydrological and water quality assessment identified a zone of impact of the drought option on: Huddersfield Narrow Canal. | Hydrological and water quality assessment identified a zone of impact of the drought option on: Wessenden Brook, River Colne, and River Colne. | Hydrological and water quality assessment identified a zone of impact of the drought option on: River Coine. | Hydrological and water quality assessment identified a zone of impact of the drought option on: Hall Dike and Brow Grains Dyke. |
| The assement concluded that there would be Major impacts on hydrology (river flow and level) and in Moderater fisk to water quality associated with this option. The overall impact on environmental features has been assessed as Moderate. | The assement concluded that there would be Major impacts on hydrology (river flow and level) and Moderater risk to vertex quality associated with this option. The overall impact on environmental features has been assessed as Major. | In the assement concluded that there would be Major impacts on hydrology (river flow and level) and a Minor risk to water quality associated with this option. The overall impact on environmental features has been assessed as Moderate. | The assement concluded that there would be Major impacts on hydrology (river flow and level) and Minor risk to water quality associated with this option. The overall impact on environmental features has been assessed as Moderate. | Is The assement concluded that there would be Major impacts on hydrology (fiver flow and level) and a Moderater fist to water quality associated with this option. The overall impact on environmental features has been assessed as Major. | The assement concluded that there would be Major impacts on hydrology (fiver flow and level) and Moderater risk to work capability associated with this option. The overall impact on environmental features has been assessed as Major. | a The assement concluded that there would be Major impacts on hydrology (river flow and level) and Moderater (six outer quality associated with this option. The overall impact on environmental features has been assessed as Major. |
| Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: Other (Regigner) DER. and Notable Fish – numerous (Minor to Moderate) WIFD compliance WIFD compliance Fish (Moderate) (Moderate) Fish (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: White-Clement conflict (Major) White Clement conflict (Major) NERC and Notable Fish – numerous (Moderate to Major) WFD compliance Maccroimente brates (Moderate) Fish (Major) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the tone of influence to: White-Chewood crayfols (Moderate) Water vole (Moderate) Otter (Moderate) WFD compliance Macroinvertebrates (Minor) and Fish (Moderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: White-clawed carythith (Moderate) Water vole (Minor) | Water voie (Woderate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to. MRC and Notable fib.— numerous brown trout, builhead and grayling (Minor to Major) White-classed craylinh (Moderate) White-classed craylinh (Moderate) Water vole (Moderate) WHO Compliance Faith (Major) Macroinvertebrates (Moderate). Growell Botton Intil/ LVIS (Moderate). Southern Washlands UNR (Minor) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation) within the zone of influence to: NEE and Notable Fish – numerous (Moderate to Major) Otter (Moderate) White-clawed crayfish (Moderate) Water vole (Moderate) WFD Compliance Fish (Moderate) invertebrates (EModerate) |
| | Environmental assessment used YWS and EA data and information on: reservoir management, meas WHPTNATKA and WHPTNAFF EQ scores, foh abundances from monitoring surveys, Fisheries Classifi | ured reservoir outflow, water resource modelling of outflow in critical drought years, gauged river flow action Scheme (2) data and publicly available data on designated sites, distributions of NETIC Act Section | and levels, routine WFD water quality monitoring, water quality and flow pressures (abstraction lice 41 priority species, distribution of invasive and Non-Native Species and recreational recourses, in ac | ence and discharge consent registers), YWS STW information; macroinvertebrate sampling data and LIFE, difficion to local EA / YWS knowledge. | and levels; routine WFD water quality monitoring, water quality and flow pressures (abstraction lice WHPTNATXA and WHPTASPT EQI scores, fish abundances from monitoring surveys, Fisheries Classifi | sured reservoir outflow, water resource modelling of outflow in critical drought years, gauged river flow nece and discharge consent registers). YMS STW information, macroinventebrate sampling data and LFR Caution Schmer (2) data and publish with a seek greater all sets, distributions of MERC Act Section and recreational resources, in addition to local EA / YMS troubleige. |
| | Details of additional baseline monitoring requirements, are incorporated within the Environmental I | Annitoring Plan, listing the features to be monitored and methods used; location, timing and frequency | of surveys; and who will undertake the monitoring. | | Details of additional baseline monitoring requirements, are incorporated within the Environmental Monitoring Plan, listing the features to be monitored and methods used; location, triming and frequency of surveys; and who will undertake the monitoring. | |
| | Mitigation measures and accompanying monitoring have been identified for serious impacts of the o | rrought option (features of moderate and major sensitivities, and minor sensitivities to designated sites | as listed above) through discussion with the EA. Details are incorporated within the Environmental | Monitoring Plan | Mitigation measures and accompanying monitoring have been identified for serious impacts of the (features of moderate and major sensitivities, and minor sensitivities to designated sites - as listed through discussion with the EA. Details are incorporated within the Environmental Monitoring Plan | bove) |
| Screening identified no further impacts. | Screening Identified no further impacts. | Screening Identified no further impacts. | Screening identified possible impacts on: Angling and navigation on the canal (uncertain) | Screening identified possible impacts on: Angling and navigation on the River Colne (uncertain) | Screening Identified no further impacts. | Screening identified no further impacts. |
| Reach 1 and Reach 2: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 3: Impacts on fish and macroinvertebrates would be minor. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1: Impacts on fish would be major and impacts on macroinvertebrates would be moderate. Ti impacts would not be associated with WTD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1: Impacts on macroinvertebrates would be moderate. Impact on fish would be major. The impacts would not associate with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | WFD Status is not determined for canals therefore no risk of deterioration for environmental feature has been identified. | res Reach 1. Impacts on macroinvertebrates would be moderate. Impacts on fish are N/A. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1: Impacts on fish would be major and for macroinvertebrates would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the fundrommental Assessment Report. Reachez 2 and 3: Impacts on fish would be major and for macroinvertebrates would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the fundrommental Jascement Report. Reach 4: Impacts on fish and macroinvertebrates would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. Reach 5: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reaches 1 and 2: Impacts on macroinvertebrates and fish would be moderate. The impacts would no be associated with WFD deterioration based on the criteria outlined the Environmental Assessment Report. |
| N/A | N/A | N/A | The cannal cannot be supported by any other reservoirs. Implementation of the drought action was done in consultation with the Canal and Rivers Trust. | will N/A | N/A | N/A |

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| Consequence (April or Basic Content SEC) Mode (April 1) Content SEC) | | Current compensation release is 1.40 MI/d under an "enforcement position" agreed with the |
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| The Output of Control (Control | Environment Agency (the statutory requirement is 156,960 gallons/day, 6/7 between 06:00 & 18:00 | Clough 37,029 gpd continuous, Gatehead Clough 8,640 gpd continuous, Ellen Clough 22,217 gpd |
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Appendix 4.5 River Options

Yorkshire Water Drought Plan supply side options: River options
Type of option: River Abstractions
Location / Area affected or whole supply zone: Grid SWZ

Summary description of actions: Temporary increase abstraction limits or alter river abstraction to provide more water for supply to customers
Preceding actions: Publicity campaign and temporary use bans in force (April to September)

| Option name | River Ouse | River Ure | River Wharfe reduced regulated flow | River Wharfe annual abstraction increase | River Hull | River Derwent |
|---|--|---|--|--|---|--|
| Trigger(s) | Preceding actions: Publicity campaign and temporary use bans in force (April – September only) Progens: Risk of shortage of supply established: Literarior stocks approach the North Reservoir Group Drought Control Line (within 1-2 weeks) | Preceding actions: Publicity campaign and temporary use bans in force (April – September only) Biggers flat of shortage of supply established I. Reservoir stocks approach the North Reservoir Group Drought Control Line (within 1-2 weeks) | Preceding actions: Publicity campaign and if applying in the summer a temporary use ban in force (Igani – September celly) Triggers: Risk of Triggers risks of the North West Reservoir Group Drought Control Line Reservoir stocks approach the North West Reservoir Group Drought Control Line | Preceding actions: Publicity campaign and if applying in the summer a temporary use ban in force (April - September only) Figgers: Sike of horizing of upply established Reservoir stocks approach the North West Reservoir Group Drought Control Line | Preceding actions: Publicity campaign and temporary use bans in force (April – September only) Fingers: Risk of shortage of supply established Bither stocks for corresponding resource upon appreach the East Group Drought Control Line (within 12 week) or the naturalized flow on the River Holl at the gauging point is predicted to fall below 11.3 CSMVQ | Preceding actions: Publicity campaign and if applying in the summer a temporary use ban in force [Angiler-Septenther charged supply established Reservoir stocks approach the Regional Drought Control Line |
| Most likely authorisation in a drought (permit or order) | Permit | Permit | Permit | Permit | Permit | Permit |
| Most hely authorisation in a drought (permit or order) | Permt | Permit | Permit | Permit 88.6MI/d may be abstracted from the River Wharfe at the abstraction point subject to the follow | Permit. | Permt |
| Current Legal Requirement (Compensation release, minimum maintained flow or authorised abstraction limit) | 300M/d when flows in Ouse (measured at a monitoring station downstream) are more that 1,000M/d 120M/d when flows in Ouse are between 650 and 1,000M/d 120M/d when flows in the Ouse are between 400 and 650M/d 120M/d when flows in the Ouse are less than 400M/d when flows in the Ouse are | 46Mi/d when flows in the (measured at an upstream monitoring station gauge) are more th 300Mi/d when flows in the are between 163 and 300Mi/d +3.27Mi/d when flows in the Lie are between 50 and 153Mi/d 40Mi/d when flows in the Lie are between 50 and 153Mi/d 40Mi/d when flows in the Lie are less than 50Mi/d 40Mi/d when flows in the Lie are less than 50Mi/d 40Mi/d when flows in the Lie are less than 50Mi/d 40Mi/d when flows in the Lie are less than 50Mi/d 40Mi/d when flows in the Lie are less than 50Mi/d 40Mi/d when flows in the Lie are less than 50Mi/d 40Mi/d when flows in the Lie are less than 50Mi/d 40Mi/d | 88.6M/d/ may be abstracted from the Niver Wharler subject to the following conditions: - When Rillow in the Wharler is less than \$250M/d Vers must release the amount abstracted from Wharler and the abstraction point plus in additional 12.7M/d/d - When Rillow in the Wharler is severed 22.7M/d/d and 389M/d VVS must release the amount abstract when the severed 22.7M/d/d and 389M/d VVS must release the amount abstract when the severed 22.7M/d/d and 389M/d VVS must release the amount abstract when the severed 22.7M/d and 389M/d VVS may abstract up to 88.6M/d VVS may abstract up to 88.6M/d VVS may abstract up to 88.6M/d VVS may abstract up to 93.2M/d (North West An Reservoil 11 releases not required) - When Row in the Wharler is above 488M/d VVS may abstract up to 93.2M/d (North West An Reservoil 11 releases not required) - Abstraction limits on the Wharler are 5.000 cubic netres per hour, 93.200 cubic metres per day 23.742,000 cubic metres per year and at an instantaneous rate not exceeding 1,406 liters per second | North West Area Reservoir 11 releases not required) • When flow in the Wharfe is above 488MI/d YWS may abstract up to 93.2MI/d (North West Area Reservoir 11 releases not required) | Abstractions of up to 68.19Ml/d (acknowledging HOF) when flows are between 45.45 and 159Ml/d Abstractions of up to 113.65Ml/d when flows are between 159Ml/d and 340.95Ml/d, with specific residual flows left in river. Flox CHANGE) | The annual maximum volume we can take from the filver Derwent Site 1 is 30,400 M/lyear and the daily maximum permitted is 13 M/luf Further upstream we are licensed to take 7,000 M/lyear from the filter Derwent site. 2 The license agreements held with the furtherwant Agency for the include an aggregated annual limit of 58,841 M/lyear and 205 M/ld, 10 addrers to the license conditions we control the volume short-coded daily to ensure we stay within the annual limit. |
| Deployable Output of action - Variable depending on conditions and duration of drought permit | Up to 60 | Up to 3.27 (when flows are less than SGMI/d) | Up to 22.70 (when flows are less than 252MI/d) | Benefit will vary depending on which flow band the river is in and how many days of the licensing y remain at the time of applying | Tup to 20.45 | The benefit of the option will depend on when permission is granted, as it is related to the number of days left in the licensing year. |
| Action Description | Increase allowed abstraction in all but the highest flow band. This allows increased river abstractions, and protects reserved nodes, allowing storage to be maximized during a drought. 1 2006/M/d when flows in Ouse (measured at a monitoring station downstream) are more that colonity (flow change) and the colonity (flow change) and change (flow change) and cha | River Ure increased abstraction - increase allowed abstraction in the lowest flow band. This allow increased river abstraction, and protects reservoir stocks, allowing storage to be maximised during drought. - 8.60M/d when flows in Ure (measured at an upstream monitoring station gauge) are more th 32.72M/d when flows in Ure are between 163 and 30.00M/d (MO CIAMGE) -12.72M/d/d when flows in Ure are between 163 and 30.00M/d (MO CIAMGE) -3.27M/d when flows in the Ure are less than 5.00M/d (increase from 0 to 3.27M/d) -3.27M/d when flows in the Ure are less than 5.00M/d (increase from 0 to 3.27M/d) | Reservoir 11, allowing storage to be maximized during a drought. \$8.8M/l may be abstracted from the River Wharfe at the abstraction point subject to the following condition: "When flow in the Wharfe is less than 253M/ld YWS must release the amount abstracted from the Wharfe is the substraction point (beforesses in release of 22.7M/ld) "When flow in the Wharfe is between 252M/ld and 388M/ld YWS must release the amount abstracted from the Wharfe is the abstraction point less 6.8M/ld (PM CMMG) | allower Winnfra annual abstraction increase - The liver Winnfe licenced abstraction volume is limited 2,372 AUM; I diverse, the dilny maximum dissou so to take \$2.3 Vid. at flower greater than 485 MI or 8.6 MI (all flower flows). In a normal year we control the volume abstracted only to ensure west order that he annual limit. This dought option is to increase the annual abstraction limit to all abstraction of the licenced delily maximum (dependent on flow levels) for the remainder of the licensing perif plorf in March 1, This option will not change the self-grower limits are and flower licensing perif plorf in March 1, This option will not change the self-grower limits are and flower licensing perif plorf in March 1, This option will not change the self-grower limits are not flower periformed on the self-grower limits of the self-grower limits are and flower periformed to the self-grower limits and the self-grower limits are also also also also also also the licensing and plant and the self-grower limits are self-grower limits and the self-grower limits are also allow the licensic daily minimum volume to be abstracted for the remainder of the current year. | abort action in the lower flow bands. *Hands off flow (HOF) of 25MI/d *Abstractions or up to 68.35MI/d (acknowledging HOF) when flows are between 25 and 159MI/d *Abstractions or up to 131.55MI/d (acknowledging HOF) when flows are between 25 MI/d, with specified residual flows left in new IPM COMAND. | River Derwent abstraction increase - The River Derwent option is to increase the volume we take in a iconsisting year from the River Derwent Ste 1, which irreducing the annual increase valume we are continuously allow a present states of the continuously and the continuously allow and present states of the continuously and the present state 1 that would be balanced by a corresponding reduction in the annual into on the River Derwent Ste 1 that would be balanced by a corresponding reduction in the annual into on the River Derwent Ste 1 that would be balanced by a corresponding reduction in the annual into on the River Derwent Ste 1 that would be balanced by a corresponding reduction in the annual limit on the River Derwent Ste 1 that would be balanced by a corresponding reduction to the service of the River Derwent Ste 1 that would be balanced by a corresponding reducing the service of the River Derwent Ste 1 that we would be a service of the River Derwent Ste 1 that we would be a service of the River Derwent Ste 1 that we would be a service of the River Derwent Ste 1 that we would be a service of the River Derwent Ste 1 that we would be a service of the River Derwent Ste 1 that we would be a service of the River Derwent Ste 1 that we would be a service of the River Derwent Ste 1 that we would be a service of the River Derwent Ste 1 that we would be a service of the River Derwent Ste 1 that we would be a service of the River Derwent Ste 1 that we would be a service of the River Derwent Ste 2 that we would be a service of the River Derwent Ste 2 that we would be a service of the River Derwent Ste 2 that we would be a service of the River Derwent Ste 2 that we would be a service of the River Derwent Ste 2 that we would be a service of the River Derwent Ste 2 that we would be a service of the River Derwent Ste 2 that we would be a service of the River Derwent Ste 2 that we would be a service of the River Derwent Ste 2 that we would be a service of the River Derwent Ste 2 that we would b |
| Implementation timetable Preparation time, time of year effective, duration | Proparation time: 4 weeks prior to advertising, implementation period 5-6 weeks (advertisement, representation, enquiry, granting) Time of yet effective: implemented when reservoir stocks approach drought control line so could be effective any time of grant period of restriction typically 12 weeks | Preparation time: 4 weeks prior to advertising, implementation period 5-6 weeks (advertisemen expresentation, enquiry, granting) Time of year effecture: implemented when reservoir stocks approach drought control line so could be directive any time of year reservoir stocks approach drought control line so could be directive any time of year reservoir stocks approach properties. The Durations Minimum period of restriction hypically 12 weeks | L Preparation lime: 4 weeks prior to advertising, implementation period 5-6 weeks (advertisemen representation, enquiry, granting) If the of year effective: emplemented when reservoir stocks approach drought control line so could be detective buy lime of year. Duration: Minimum period of restriction typically 12 weeks | Pagazation time: 4 weeks prior to advertising, implementation period 5-6 weeks (advertiseme, expressetation, enguler, grading) Time of year effective: January to March. We would not anticipate exceeding the annual lacence line used February 45 the calificat, and most likely March. Therefore the permit would only apply February and the california of the most of the properties of the permit would only apply February and the california of the properties of the properties of the permit would only apply outsite: Maximum of 3 months | in Time of year effective: implemented when reservoir stocks approach drought control line so could be | Pagaration time: A week prior to advertising, implementation period 5-6 weeks (advertisement, representation, enging, parting). Time of year effective, lineary to March. We would not natiopate exceeding the annual licence limit until February at the surface, and most likely March. Therefore the permit would only apply in February and March, however we might increase our daily average use from the date it was granted, on serlier than 1.1mursy. Deatlow: Maximum of 3 months |
| Permissions required and constraints including details of liaison with bodies responsible for giving any permits or approvals | Permission from Defra or the Environment Agency required following application of a drought order or permit. A public enquiry may be required. A public enquiry may be required. Lisise with Environment Agency. | Permission from Defra or the Environment Agency required following application of a drought order or permit. A public enquiry may be required. A public enquiry may be required. Liaise with Environment Agency. | permit. | Permission from Defra or the Environment Agency required following application of a drought order permission from Defra or the Environment Agency required following application of the Application Laber with Environment Agency. | Permission from Derra of the Environment Agency required following application of a drought order of | Permission from Defra or the Environment Agency required following application of a drought order permit. A public enquiry may be required before a decision is made on the whether or not the application is granted. Lis |
| Risks associated with option | Changes in operation to the current abstraction licence have potential environmental impacts. These will be assessed through the Environmental Assessment Report submitted with the application. | Changes in operation to the current abstraction licence have potential environmental impacts. Thes will be assessed through the Environmental Assessment Report submitted with the application. | se Changes in operation to the current abstraction licence have potential environmental impacts. Thes will be assessed through the Environmental Assessment Report submitted with the application. | e Changes in operation to the current abstraction licence have potential environmental impacts. The will be assessed through the Environmental Assessment Report submitted with the application. | se Changes in operation to the current abstraction licence have potential environmental impacts. These will be assessed through the Environmental Assessment Report submitted with the application. | Changes in operation to the current abstraction licence have potential environmental impacts. These will be assessed through the Environmental Assessment Report submitted with the application. |
| Risk to the Environment (Major/Moderate/Minor or uncertain) | Ouse. The assement concluded that there would be Minor impacts on hydrology (river flow and level) and a | River Ure. | elydrological and water quality assessment identified a zone of impact of the drought option on the New Wharfe downstream of the abstraction until the tidal limit. Whe assessment concluded that there would be Moderate impacts on hydrology (river flow and several and Moderate for water quality associated with this option. The overall impact on environment features has been assessed as Moderates. | the declarical excession accorded Manifolds broductions imposts of the decount accords and distance | hydrological and water quality assessment identified a zone of impact of the drought option on the fiver Hull. The assement concluded that there would be Major impacts on hydrology (river flow and level) and Moderater risk to water quality associated with this option. The overall impact on environmental features has been assessed as Moderate. | Hydrological screening assessed negligible hydrological impacts of the drought permit conditions. |
| Include details for features of moderate and major sensitivity and minor sensitivity features from designated sites | concentration standards and Moderate sensitivity to unionized ammonia concentration standards and moderate sensitivity to unionized ammonia concentration standards in the River Ouse at Nether Poppleton GB104027069590 NRC ACL Section 41 priority species: Fish - River Ouse: numerous (Minor to Moderate) Water vole (Moderate) Charolifes represent; (Meelin-Mel.) | Environmental assissment has identified potential environmental sensitivities (prior to mitigation within the zone of influence to: Water voic (Modezate) | Environmental assessment has identified potential environmental sensitivities (prior to mitigation within the zone of influence to: More than the zone of influence to: More than the zone of influence to: More than the zone of the zone | All relevant features were screened as with Negligible impacts. | Environmental assessment has identified potential environmental sensitivities (prior to mitigation text) (here to easier of influence to: Otto: (Negligible) (Mick and Notable species – fish (Minor to Moderate) (Mick and Notable species – fish (Minor to Moderate) (Minor) | All relevant features were screened as with negligible impacts |
| Baseline information used | measured reservoir outflow, water resource modelling of outflow in critical drought years, gauged rive flows and levels, routine WFO water quality monitoring, water quality and flow pressures (abstraction licence and discharge consent registers), YWS STW information, macroinvertebrate sampling data and LIFE, WHFPNATXA and WHFPASPF EQI scores, fish abundances from monitoring surveys, Fisheries Classification Scheme (2) data and publicly available data on designated site, distributions of NERC | measured reservoir outflow, water resource modelling of outflow in critical drought years, gauged ri flows and levels; couline WFD water quality monitoring water quality and flow pressures (abstractio licence and discharge consent registers), YWS STW information, macroinvertebrate-sampling data an LIEE, WHFTNATXA and WHFTNSFT EQ) scores, fish abundances from monitoring surveys, Febreir Classification Scheme (2) data and publicly available data on designated laste, distributions of WRE | w measured reservoir outflow, water resource modelling of outflow in critical drought years, gauged rin nlows and levels; croutine WPO batter quality monitoring, water quality and floor pressures labstraction dicence and discharge consent registers), YWS STW information; macroinvertebrate sampling data an est LIFE, WHPTNATNA and WHPTASPT EQI scores, fish abundances from monitoring surveys, Fisherical (Classification Scheme (2) data and publicly available data on designated size, distributions of MRE | remeasured reservoir outflow, water resource modelling of outflow in critical drought years, gauger follows and feevier, routine VFD water quality monitoring, water quality and flow pressures (abstract of licence and discharge consent registers), YWS STW information; macroinvertebrate sampling data as sulfe; WHPTNATX and WHPTASPT EQI scores, fish abundances from monitoring surveys, reliable to the control of | It, finvironmental assessment used YWS and EA data and information on: reservoir management were resource modelling of outflow in critical drought years, pauged ris of lows and levels; routine WFO water quality monitoring, water quality and flow pressures jobitzation flows and levels; routine WFO water quality monitoring, water quality and flow pressures jobitzation flows and general properties of the pressure properties of the pressure properties and surface and discharge consert registers. JWS STW information, macroirevelebrate sensing data are useful. STW STW information from monitoring surveys, Fisheria (Cassification Soften) data and publicy available data on designated sized, sufficients on MRXII saled. Section 4.1 priority species, distribution of invasive and Non-Native Species and recreations resources, in addition to local EA / YWS Inovivedge. | measured reservoir outflow, water resource modelling of outflow in critical drought years, gauged riv flows and levels; couline WFD water quality monitoring water quality and flow pressures (abstraction licence and discharge consent registers), YWS STW information; macroinvertebrate sampling data and LUFE, WHPTNATXA and WHPTASPT EQ1 scores, fish abundances from monitoring surveys, Fisheries Classification Scheme (2) data and publicly available data on designated sies, distributions of NERC |
| Summary of additional baseline monitoring requirements | Details of additional baseline monitoring requirements, are incorporated within the Environmental Monitoring Plan, Issing, the features to be monitored and methods used; location, timing and frequency of surveys; and who will undertake the monitoring. | Details of additional baseline monitoring requirements, are incorporated within the Environmenta Monitoring Plan, Issing the features to be monitored and methods used, location, timing an frequency of surveys; and who will undertake the monitoring. | a Details of additional baseline monitoring requirements, are incorporated within the Environmental Monitoring Plan, listing the features to be monitored and methods used; location, timing an frequency of surveys; and who will undertake the monitoring. | Details of additional baseline monitoring requirements, are incorporated within the Environment of Monitoring Plan, listing the features to be monitored and methods used; location, timing as frequency of surveys; and who will undertake the monitoring. | al Details of additional baseline monitoring requirements, are incorporated within the Environmental and Monitoring Plan, listing the features to be monitored and methods used, location, timing and frequency of surveys; and who will undertake the monitoring. | Details of additional baseline monitoring requirements, are incorporated within the Environmenta Monitoring Plan, listing the features to be monitored and methods used; location, timing and frequency of surveys; and who will undertake the monitoring. |
| Mitigation measures | Mitigation measures and accompanying monitoring have been identified for serious impacts of the drought option (features of moderate and major sensitivities, and minor sensitivities to designated discs - as listed above) through discussion with the EA. Details are incorporated within the flavoromental Monitoring Plan. | Mitigation measures and accompanying monitoring have been identified for serious impacts of th drought option (features of moderate and major sensitivities, and minor sensitivities to designate sites - as listed above) through discussion with the EA. Details are incorporated within the forecomental Monitoring Plan | eMitigation measures and accompanying monitoring have been identified for serious impacts of the disrought option fleatures of moderate and major sensitivities, and minor sensitivities to designate entitles: a Site debovel through discussion with the EA. Details are incorporated within the Environmental Monitoring Plan. | In line with the DPG, only features identified as either: 1) uncertain; 2) moderate raisor sensibility. It minor sensibility is a designated site form the scope of monitoring, environmental assessment a consideration of militigation actions. On this basis no mitigation is required: | Mitigation measures and accompanying monitoring have been identified for serious impacts of the drought option (features of moderate and major sensitivities, and minor sensitivities to designate sites - as listed above) through discussion with the EA. Details are incorporated within the Environmental Monitoring Plan | In lies with the DPG, only features identified as either: I uncertain; I) moderate-major sensitivity, or 3) minor aemitivity in a designated site form the scope of monitoring, enveronmental assessment and consideration of miligation actions. On this basis no miligation is required |
| Impact on other activities e.g. fisheries, industry etc | Screening Identified no further impacts. | Screening identified possible impacts on: *Angling on River Ure (minor) | Screening identified no further impacts. | Screening identified no further impacts. | Screening identified possible impacts on: *Angling on River Hull (uncertain) | Screening Identified no further impacts. |
| WTO Compiliance | Reach 1: Impacts on fish macroinvertebrates would be minor. The impacts would not be associated with WFD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1: Impacts on fish macroinvertebrates would be moderate. The impacts would not be associated with WID deterioration based on the criteria outlined in the Environmental Assessment Report. | refleach 1: Impacts on macroinvertebrates would be moderate. Impacts on fish would be minor. The Impacts would not be associated with WFD deterioristion based on the criteria outlined in the Christomental Ausstranent Report. | e A number of waterbodies were considered for assessment. The impacts would not associate with M electricization in any of the waterbodies based on the criteria set out in the Environmental Assessm Report. | PERfach 2: The impacts on fish would be moderate. The impacts on invertebrates would be minor. The impacts would not be associated with WED deterioration based on the criteria outlined in the Environmental Assessment Report. | Two waterbodies were considered for assessment. The impacts would not associate with WTO disterioration in any of the waterbodies based on the criteria set out in the Environmental Assessment Report. |
| Additional information | N/A | N/A | This option could be applied for at the same time as the River Wharfe annual abstraction increase an the North West Area Reservoir 11 option depending on the potential benefits and impacts of impermenting the opitions. | d This is a winter only drought option. It could be applied for at the same time as the River What feduced regulated flow and the North West Area Reservoir 11 option depending on the potent benefits and impacts of impementing the opitons. | fe al N/A | This is a winter only drought option |

Appendix 4.6 Extreme Options

| Water Resource Zone | Type of action | Option | Summary of action | Trigger for action to be considered* | Likely benefit / saving | Barriers | Environmental impacts | Timescales | Priority order (on a scale of to 3)** |
|---|---------------------------------------|--|---|---|--|---|--|--|--|
| Grid SWZ + East SWZ | Demand | Removal of exceptions | Removal of temporary use ban (TUBs) non-statutory exceptions and concessions so that greater restrictions are applied and to a greater number of customers. | Regional reservoir stocks forecast to fall below 20% within next 4 weeks | It is assumed total combined demand reduction due to TUBs and NEUB is 6%. This action would increase the potential of achieving 6%. | Changes to TUBs conditions may create confusion or impact on customer good will. The additional restrictions may be marginal. Savings may only be achieved during peak demands i.e. hosepipes and paddling pools are used excessively during hot, dry days. Many commercial business will be impacted although it is noted that statutory exceptions would still apply. | a (a | 2 weeks to provide formal notice but would raise awareness through media channels once the trigger reached | |
| GIIU 3WZ + ESSI 3WZ | Demand | nemoval of exceptions | Use full range of powers available with non- essential use (NEU) drought orders. Removal of non-statutory NEU exceptions and concessions so that greater restrictions are applied and to a greater number of | | It is assumed total combined demand reduction due to TUBs and NEUB is 6% of demand at time of implementing (50- | Changes to NEUB may create confusion or impact on customer good will. | iya | 2 weeks to provide formal notice but would | |
| Grid SWZ + East SWZ | Demand | Drought orders | customers. Assumes all supply-side permit applications (where a benefit is achieved) are already in place. | Level 3 actions in place and reservoir stocks one week from the DCL | 75Ml/d). This action would increase the potential of achieving 6%. | The additional restrictions may be marginal. Many commercial business will be impacted although statutory exceptions would still apply. | N/A | raise awareness through media channels once the trigger reached | |
| | | Yorkshire Water customer | Create awareness of the situation and appeal for extreme demand reduction action e.g. reduce use to 50MI/d. All media channels will be | Level 3 actions in place and reservoir | Assumed up to 5% of demand at time of implementing (e.g. approximately 70MI/d if average demand 1300MI/d). This is unprecedented action. If all of Yorkshire Water's domestic customers reduced consumption to 50I/h/d around 400 MI/d would be saved. However, we cannot assume all | | | Would be a continual process from onset of | |
| Grid SWZ + East SWZ | Demand | campaign | used including regular appearances on local news channels. | stocks one week from the DCL | customers would achieve this volume. | Many customers may be unwilling or unable to reduce demand. | n/a | drought with the level of messaging increasing | |
| Grid SWZ + East SWZ | Demand | National Media & Communicat | | Level 3 actions in place and reservoir stocks one week from the DCL | As above however, a national campaign may have greater success. | Many customers may be unwilling or unable to reduce to 50 l/h/d. Requires all water companies to contribute and Government support to be a true national campaign. | N/A | 0-6 weeks. It is assumed such a campaign would be developed through the National Drought Group prior to companies reaching extreme dorught action triggers but could take several weeks to be fully implemented. | 1 - assuming many companies impacted |
| | | | | | | Pressure management in Yorkshire is controlled at a level that meets service standards and further achievable savings would be very low without creating a risk of failing service | | | |
| Grid SWZ + East SWZ | Demand | Pressure management | Reduce pressure while still maintaining essential services e.g. night time reductions. Pumping stations and pressure reduction valves controling water distribution would be optimised to a level that would just meet standards. | Level 3 actions in place and reservoir stocks one week from the DCL | 0-2MI/d | standards. Redeployment of operational staff to deliver this action would reduce other key operational activities including enhancing leakage reduction. We may therefore prioritise other drought management actions based on the likely benefits and | N/A | Would start when trigger reached but take up to several weeks to achieve full benefits. | 1, but only if redeployment of operational staff considered most effective measure |
| | | Request commercial and agricultural water use | Request non-households reduce use for purposes not prohibited by a drought order for a non-essential use ban. This could be by agreement with large users who may be able to operate differently e.g. reduce production at a site in the affected area if they have other sites | Level 3 actions in place and reservoir | | This action would be on a voluntary basis only and an agreement would need to be reached with the non-households able to support such reductions. Due to the high commercial impact alternative sources would need to be found and may not be available. Any costs incurred | | Due to the nature of the request we would expect to take several weeks/months. We would start to consider at the point the trigger was reached but would not see a benefit until an agreement was made with the affected | |
| Grid SWZ + East SWZ | Demand | reductions | elsewhere that could cope with additional demand. | stocks one week from the DCL | 0-5MI/d estimated as no data to base assumptions. | would be paid by YW. The yield achieved would be dependent on retailers and non-household customers' | N/A | parties. 6-12 months to allow for contractor to be | |
| Grid SWZ + East SWZ | Demand | Water efficiency in non- household properties | We will seek to work with retailers to deliver water efficiency devices and advice to non-household water users. | Level 3 actions in place and reservoir stocks one week from the DCL | 0 to 2MI/d | participation. A contractor would need to be recruited to deliver the service. | N/A | recruited and service delivered to non - households. | |
| Grid SWZ + East SWZ | Supply | Tankering | In an extreme drought water could be transferred within Yorkshire and from other companies if any customers supplies were at risk of running out. We may use in areas where network limitations prevent support from other assets and WTWS across the company. | Level 3 actions in place and reservoir stocks one weeks from the DCL. Would be linked to network and need during drought conditions. | If tankering within Yorkshire there would be no additional resource benefit, the benefit would be re-distribution available supplies to any areas of deficit. If tankering from out-side our supply area there would be a benefit but insufficient data to define. | Availbility of tankers may limit this action. Other companies may experience drought at the same time and not be able to offer supplies. | N/A as this would be within licence permissions. | Provided tankers available can be implemented immediately to those areas where needed. | 3 (although some small scale tankering may be required prior to level 3 actions being implemented) |
| Grid SWZ + East SWZ | Supply | Network changes | transfer water to areas at risk. This could be through use of overlands | Level 3 actions in place and reservoir stocks one weeks from the DCL. Would be linked to network and need during drought conditions. | No resource benefit as re-distribution of existing supplies. | Planning consents and DWI apporvals would need to be sort. | Abstraction would be within existing permissions but additional pipelines would have an impact on the land. | 3 - 12 months assuming necessary permissions granted | |
| Grid SWZ | Supply | North West Reservoir 10 | pipes. Reservoir currently not used for supply. A drought order / permit would be needed to abstract up to 3 Ml/d, to be piped into an existing aqueduct, when yield available. There is also an ordinary supply-side drought option to reduce the compensation release from the reservoir (see Appendix 5). | In a second year of drought and reservoir stocks six weeks away from crossing the drought control line. | | Assumes permit/order would be granted. Would need to meet Water Supply (Water Quality) Regulations. Water availability in the reservoir may be limited in a drought. | Low risk as making use of exsiting infrastructure but could require a reduced compensation release via drought permit/order. See Appendix 4.7 for further details. | Estimated 6 to 12 months, allowing for water quality testing, DWI approvals and | but only in a drought lasting two or more years |
| 5.10 SW2 | заррлу | HOLLI WEST IESETON 15 | | In a second year of drought and reservoir | | Assumes permit/order would be granted. | | Up to 12 months, allowing for hydrological | or more years |
| Grid SWZ | Supply | East Yorkshire Borehole 2 | | stocks six weeks away from crossing the drought control line. | 6MI/d annual average and 9MI/d daily maximum | Would need to meet Water Supply (Water Quality) Regulations. Hydraulic connectivity requires investigation. | assess. See Appendix 4.7 for further details. | impact assessment (HIA), water quality testing, EAR, and DWI approval. | 1, but only in a drought lasting two or more years |
| | | | Apply for a drought permit / order to increase abstracton from an | In a second year of drought and reservoir stocks six weeks away from crossing the | | Assumes permit/order would be granted. Hydraulic connectivity requires investigation (this has started for WRMP scheme but may | Surface water impact study required to assess. | | 1, but only in a drought lasting two |
| Grid SWZ | Supply | increased abstraction | existing borehole. | drought control line. | 2MI/d | require escalation if volume needed in a drought). Discharge consents woud need to be approved. Dependent on the water being available from NWL. | See Appendix 4.7 for further details. | quality testing and DWI approval. 18 months allowing for EAR, bulk supply | or more years |
| Grid SWZ | Supply (transfer) | Tees to Swale transfer | Import from Northumbrian Water Limited (NWL) via pieline then river transfer. | In a second year of drought and reservoir stocks six weeks away from crossing the drought control line. | 0-28Ml/d (assuming 40Ml/d discharged) | High pontential for en route losses reducing the benefit. Would need to meet Water Supply (Water Quality) Regulations. Environmental impact. Planning consents required. | Invasive non-native species (INNS) present in the River Tees. See Appendix 4.7 for further details. | agreement with NWL, planning consents, construction and EA and DWI apporvals. May require an Environmental Impact Assessment (EIA). | 1, but only in a drought lasting two or more years |
| | | | Import from NWL via a pipeline to a WTW via River Derwent Water | In a second year of drought and reservoir stocks six weeks away from crossing the | | Dependent on the water being available from NWL. Would need to meet Water Supply (Water Quality) Regulations. Environmental impact. Planning consents required. Lengthy timescales due to significant pipeline contruction. Overland pipes would be considered | Environmental investigation required. Invasive non-native species (INNS) present in the River Tees. | 12-18 months allowing for EAR, bulk supply agreement with NWL, planning consents, construction and EA and DWI approvals. Assumes planning consents and potentially overland pipes approved. May require an | 1, but only in a drought lasting two |
| Grid SWZ | Supply (transfer) | Tees to Derwent pipeline | Treatment Works 1. | drought control line. | 40MI/d | to speed up the delivery but dependent on planning consents. Assumes permit/order would be granted. Would need to meet Water Supply (Water Quality) Regulations. Water availability in the river would be subject to hands off flow conditions. | See Appendix 4.7 for further details. | Environmental Impact Assessment (EIA). 12 months allowing for EAR, planning consents, construction and EA and DWI approvals. | or more years |
| | | | Construct a new intake on the River Aire and piepline to transfer to Bradford water treatment works. A drought permit / order would be | In a second year of drought and reservoir stocks six weeks away from crossing the | | Environmental impacts require investigation. Planning consents required. | Environmental investigation required. | Assumes planning consents and potentially overland pipes approved. May require an | 1, but only in a drought lasting two |
| Grid SWZ | Supply | River Aire abstraction | required to abstract from the Aire. | drought control line. | up to 50MI/d dependent on water availability | Construction time overland pipes would be considered but dependent on planning consents. | See Appendix 4.7 for further details. Would be within existing licence | Environmental Impact Assessment (EIA). | or more years |
| o store | 61 | Ouse additional pumping | Install additional pumping capacity to transfer increased flow, under the existing licence, from an abstraction on the Ouse to a water treatment | In a second year of drought and reservoir stocks six weeks away from crossing the | 2011/4 | | permissions which include a hands off flow level. | 6 6 | 1, but only in a drought lasting two |
| Grid SWZ | Supply | station capacity | works in Leeds. | drought control line. In a second year of drought and reservoir | 10MI/d | Benefit only available when river flow above hands off flow level Benefit may be reduced when river flows low. Planning consents required. Construction time could delay benefit. | See Appendix 4.7 for further details. Would be within existing licence permisisons but new infrastructure | 6 to 9 months allowing for EAR 12 to 18 months allowing for EAR and depending on permissions being granted and | or more years |
| Grid SWZ | Supply | Ouse Water Treatment Works extension | Increase treatment works capacity to use water available under current licence. | | 22Ml/d average (up to 60Ml/d licence maximum but 40Ml/d considered usuable maximum) | Water Supply (Water Quality) Regulations. River Ouse water is already used in supply and the risk that an increased abstraction would not meet drinking water standards is very low. | constructed. See Appendix 4.7 for further details. | construction time. May require an Environmental Impact Assessment (EIA). | but only in a drought lasting two or more years |
| | Заррту | | Construct a pipeline at Ouse abstraction intake to transfer water using | In a second year of drought and reservoir stocks six weeks away from crossing the | | Benefit may be reduced when river flows low. Planning consents required. Construction time could delay benefit. Water Supply (Water Quality) Regulations. River Ouse water is already used in supply and the | Would be within existing licence permisisons but new infrastructure constructed. | 12 to 18 months allowing for EAR and depending on permissions being granted and construction time. May require an | 1, but only in a drought lasting two |
| Grid SWZ * As the timescales for deliver | Supply ry of each option type vary a | Ouse Raw Water Transfer nd can not be defined for individual of | an existing licence to River Derwent Water Treatment Works 1. options the triggers is at the point we would first start to consider which opti | drought control line. ons we would develop and not at the point | Up to 60Ml/d we would implement. | risk that an increased abstraction would not meet drinking water standards is very low. | See Appendix 4.7 for further details. | Environmental Impact Assessment (EIA). | or more years |
| | , and a proof of the sally a | | , | point | | | | | |

Appendix 4.7 Long Term Options

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Caption. Changes to advance for surface waters or granularized in fine transfers

July Associated water countries and purplement of the properties of the properties

| Summary discription of actions: Temporary increase of abstraction limits, alteration of river and groundwater abstractions to provide more wa |
|---|
| supply to customers |
| Preceding actions: Publicity campaign and temporary use bans in force (April to September) |

| Option name | North West Area Reservoir 10 used for supply | East Yorkshire Groundwater Option 2 | North Yorkshire Groundwater licence increase | Tees river transfer | River Tees Direct Pipeline | Abstraction from the River Aire | Increased abstraction from the River Ouse | River Ouse WTW extension | River Ouse Raw Water Transfer |
|---|--|--|---|---|--|--|--|---|--|
| Trigger(s) | In a second year of drought and reservoir stocks six weeks away from crossing the drought control line. | In a second year of drought and reservoir stocks six weeks away from crossing the drought control line. | In a second year of drought and reservoir stocks six weeks away from crossing the drought control line. | In a second year of drought and reservoir stocks six weeks away from crossing the drought control line. | In a second year of drought and reservoir stocks six weeks away from crossing the drought control line. | In a second year of drought and reservoir stocks six weeks away from crossing the drought control line | In a second year of drought and reservoir stocks six weeks away from crossing the drought control line | In a second year of drought and reservoir stocks six weeks away from crossing the drought control line | In a second year of drought and reservoir stocks six weeks away from crossing the drought control line |
| Most likely authorisation in a drought (permit or order) Current Legal Requirement (Compensation release, minimum | Permit Abstract up to 10 MI/d per year | Permit Current Scence for this borehole allows 6MI/d annual average and 9MI/d daily maximum abstraction but under this option would be relocated to a nearby site that required a new | Permit The current licence allows for abstraction up to 8MI/d annual average and 12.5MI/d daily | Import agreement with NWL and drought order for discharge No existing import | Import agreement with NWL No existing import | Permit No existing abstraction | n/a The licence agreement permits abstractions of; *300M(I/d when flows in Ouseare more than 1,000M(I/d *350M(I/d when flows in Ousea exclusives 650 and 1,000M(I/d | N/A 96M/d arrusal average and 130Ml/d maximum | N/A 95M/d annual everage and 130Ml/d maximum |
| maintained flow or authorised abstraction limit) | | authorisation | maximum. | | | | -72MI/d when flows in the Ouse are between 400 and 650MI/d -10MI/d when flows in the Ouse are less than 400MI/d | | |
| Deployable Output of action - Variable depending on conditions and duration of drought permit | Abstract up to 3 MI/d for supply to customers | Abstract 6MI/d annual average and 9MI/d daily maximum for supply to customers. | This option would provide up to 2MI/d | Import up to 40MI/d via river transfer (losses en route) D-28MI/d (actual transfer 40 MI/d and displayable output bissed on 30% loss due to river regulation) | Import up to 40MI/d direct to water treatment works | 0-SOMI/d A new abstraction of up to SOMI/d day depending on water availability | 0-10MI/d Install additional pump capacity to make use of existing abstraction permissions | up to 40Ml/d (average 22 Ml/d) | O-60MI/d Install a gipeline to an existing water treatment works to make use of existing abstraction permissions |
| Action Description | This option would stillle North Area Rearrol's 10 is an additional source of supply to brainform WTVZ. Water from the reservoir would be transported to the works via an existing pipelin connecting, North Area Reservoir 10 to a Realthol aquested, which provides supply to Brailform WTV 1. A temporary pump would read to be installed to pump flow into the pipeline. | Relocate an existing groundwater abbitraction ficures in East Yorkshire. We currently hold a income to activate them a beneath in the fact treatment operation. It is a submitted in point a fact to compare the point of the fact treatment of the point of the point of the point a fact toping promption of the point of the point of the point of the fact and the point of the factoring the terebrish would be consided the war current factoring with the descript of the terebrish of the point of the point to do this. We would also need to install a new borelole, pumps and contact tank. | Adop's for germinoles to increase the germinate abstraction volume from an existing borshole in the flow's Windows Germinates are 18) 2 Mg/L. This would increase abstraction limits to 2004/gl annual average and 14.5Mg/d daily maximum. | Import water from Northumbrion Water Limited (NWL) via a transfer from the West Tess. As existing pipeline from the Test record need to be extended the discharge to the New Tess. The transfer water would be additioned from the Test record to additional from the additional to the believe option to Stanfer flow via a direct pipeline to New Chrwent Water Treatment Works 1. We shad only implement one of these two options. | import water from Northmeholan Water via a transfer from the New Trac. An existing pipe from the Trac would need to be extended to transport flow direct follow of Derevent Traces Works 1. This is an attenuation to the above option to transfer flow via a short pipeline flows. We would only implement one of these two options. | ties See See See See See See See See See See See See | warrant the pumping capacity of an existing flow intake on the Boar Coals in order to increase the volume transferred to a water intersect works in search. A second popular could need to increase the contraction of the contraction of the existing of the contraction of the existing about the contraction of the existing about assumed. This otherwoods the used within the comparate of the existing about the contraction of the existing about the exist | in the control of the | Proper water from the filter Chars ender our critical Chars Raw Water abstraction Ramon, our more view install and property for transmiss at films Oceans Water Transmiss Works 1. This will be within current Samon permissions on the Roar Chars |
| implementation timetable Preparation time, time of year effective, duration | Preparation time: 6 – 12 months Time of year effective: All year Duration: Minimum of 12 weeks | Preparation time: Up to 12 months, allowing for water quality seeing and DWI approval Time of year effective: All year Duration: Minimum of 22 weeks | Preparation time: 12 months Time of year effective: Al year Duration: Minimum of 12 weeks | Preparation time; 18 months Time of year effective all year Duration: Minimum of 12 weeks | Preparation time: 12-18 months Time of year effective: all year Duration: Minimum of 12 weeks | Preparation time: 12 months Time of year effective: all year Duration: Minimum of 12 weeks | Preparation time: 6-9 months Time of year effective: all year Duration: Minimum of 12 weeks | Preparation time: 12 - 18months Time of year effective: all year Duration: Minimum of 12 weeks | Preparation time: 12 - 18months Time of year effector: all year Duration: Minimum of 12 weaks |
| Permissions required and constraints. Remarks of expression with budder responsible for giving any parents of expression. | We will require a drought order or permit to increase the current abstraction licence for Nortl Area Reservoir 10 from a nominal 10MI/year to 3MI/day. We will liaise with the Environment | required. Or it come anower we may apply for a permanent notice at the new location, in accordance with Water Supply (Water Quality) Regulations we would carry out the required applications and complete and cohesit a cirk | Oosught Formit from the Environment Agency to abstract an additional 2M/d annual average and daily maximum at the current abstraction point. | | lane with forvinnent Agency and Numan England on any patient environmental paracelements for trains and patient contribution works. The training will require a both supply agreement with NVII. This will not require any club of NVII. In this will be a supply a supply agreement of the NVII. In this will not require any club of the number | to 50 McE, and the second seco | Abbraction within existing abbraction forms conditions to conditions with fundamental agency as any optional environmental agency as any optional environmental agency requirements for intaking the condition of | Abstraction within existing abstraction license conditions. Lines with Environment Agency are so potential environmental parmit requirements for insta- tion of the Environment Agency are potential environmental parmit requirements for insta- parmission problems and per required for any architecture of buildings proposed to be recent places ground and for new or temporary accesses onto classified roads. The relevant lead tool places ground and for new or temporary accesses onto classified roads. The relevant lead tool places ground and the result of the relevant lead to the control of the relevant lead tool accessing opening the longest from the longest first and and accessing opening and the longest first and accessing opening the longest first and accessing the longest first and accessing the longest first accessing to the longest first accessing to the longest first accessing the longest first accessing the longest first accessing to the longe | Abstraction within existing abstraction kinese conditions filture with inhorizonment Agency on any operated environmental parent requirements for installa continues of the co |
| Make associated with option | This option is dependent on the water quality of the supply from North Area Beamon 12.0, was originally balen and of supply, due to its por water quality and monitoring and storing in conjugated to determine 1 in 16 for supply. If this supply does not meet the DOM standards we would not implement the option. | Authority the new section has a much have risk of batterial contamination a batt treatment of the respective for the section of the section o | There is a cit has the both fundation Counciliater Increased distinction benches in it is because highlighted connectivity with the fiver leads and all increase in the substration could have determined largest on the environment. Allypolicyla impact assessment (94) is required to understand the gooding of the area and the potential impact of an increased abstraction on the conference of the policy of the area and the potential impact of an increased abstraction on the After these of complete, the council impact of an increased abstraction on the determinent for the council increase the care VMMP organis appraisal. In the event of the council increase of the council increase the care VMMP organis appraisal. In the event of the council increase of the council increase the care VMMP organis appraisal. In the event of the council increase of the council increase the care of the council increase the construction of the council increase the council increase the council construction of the council increase the council increase the council construction. | Sometimetrian Water may require the resource for their own customers or enter a transfer agreement with another interest company making the scheme unavailable to tresche Water. If the controlled in the controlled of the assets have a risk that availability of contractions could define controlled or the assets there is not that availability of contractions could define controlled or the controlled or the assets that availability of contractions could define controlled or the controled or the controlled or the controlled or the controlled or the c | hashbacked blue may require the recent of that one contents or other a tra- spensored will be better decrease and the process of the content | of a "rest may not be available/sustainable of flows bor in the floor Are. of all lang-term drought options requiring connectation of new assets have a risk that availability or of all lang-term drought options requiring connectation of new assets have a risk that availability or offer and only very this source of a rest Water Surply (You'ze Coulds) Regulation. Water for the flow flow are for a restrict year of a regular when as a risk divining water quality will no restricted objections to the scheme from third partner. Parenting permission being refused for required structural/buildings. | India may not be available/sustanded if flows too in the flowr Cose. All long-term disciple option requiring construction of new assets have a risk that availability of the control of the cost of t | | Tool may not be available/sustainable if floors law in the liver Cyce. All long-term shought options requiring construction of new assets have a nik that availability of low sound only use this amount if new Water Supply (Water Gaught) Registrates. New Coase and water is a state, used a mough of the nich that necessal abstraction would not need hastered assets as a state of the supply and the nich that necessal abstractions would not need hastered disjutcions to the subserve from their parties. Planning permission being refused for required drustures(s)-ballenge. |
| Mik to the Environment (Major/Moderate/Minor or uncertain) | low. The transfer from North Area Reservoir 10 to a Breatford Aquadrust would use an existing adjustice. Was will maintain the compensation release from the receivable. | The goingout and hydrogenispoil information currently available is not sufficient to full quantity the environmental effect of increasing the groundward addression at Bayers. The product correction belower groundward investigation in the Sharmond Sandstonia applier and the road waterbody is not adequately understoned for an excusive assessment on potential flow local samples of the supplier of the supplier of the supplier of the first fort whosh conductories of going a good in the surface water requires and send to be investigated and presented as part of the application for the directly and produced and management and presented as part of the application for the directly and presented as part of the application for the directly and presented as part of the application for the directly and present and a set of the application for the directly and the set of all presents on the send of the present of the interest of the send of the presents in the larger of recovery. | The geological and hydrogeological information currently available is not sufficient to fully apparently the environmental effect of increasing the Sicence by AMAL. An environced above, support the property of the property of the property of the property of the property property of the property of the support of the horizontal and property water depended westerds. | implications and matter quality assessment identified a zone of impact of the drought option on: New North Tyne, New First, New Feel, New Seals, the New Lou, and the New Code Constructions impact the profession between the Seals of the Sea | Environmental aussument report identified a zone of generatial hydrological and water qui risks of mice or greater on liver troot Plans, New Year and New Year. It has been been present the property of the present present the considered the hydrocontended an anti-present present present the present present the further investigation would be required to address uncontain risks. | trivinomental assessment report identified a zone of potential hydrological and water qualifility implicits of minor or greater on New You. Commission risks of a new relates, pumping station and short pipeline have also been considered. The highest desiration of the commission of the short length of river between the commission of th | Construction risks of a new intake, pumping station and short pipeline have been considered a minor or uncertain. | Environmental assumment, apport identified a same of potential hydrological and water quality and of minor or greater on the Nivor Coux. Comulation impacts with the other Nivor Coux and the course of the course o | for one reach and moderate downstratement of the sewage works. Construction risks the environment are unclear. A number of vincetin operations of instruction and the sew sidentified. A number of vincetin operations risks to the environment were identified. Restrict investigation would be required to address uncertain risks. |
| Summary of blady environmental impacts. Include details for feature of modests and major semilishly and minor semilishly features from designated often | N/A | Environmental suscenses has kineffed potential environmental sensitivities (prior to entity openior which the zone of enfluence to entity openior and environmental executivities (prior to entity (species — for execution sensitivity) entity (species — direct memor sensitivity) entity (s | -Swale Like SSS – negligible impacts | Consommental assessment has identified potential environmental sensibilities (prior to mitigation) within the zone of enhancements (SSS) — minor sensibility (SSS) — minor sen | Conformmental assessment has identified potential environmental sensitivities (prior integration) within the some of enfluences to: 17-th unanvarie, remonity-applies sensitivity 17-th unanvarie, remonity-applies 17-th unanvaried (SSG) unanvaries environmental 17-th unanvaried (SSG) unanvaries environmental 17-th unanvaried (SSG) unanvaries 17-th unanvaried (SSG) unanvaries 17-th unanvaried (SSG) unanvaries 17-th unanvaried (SSG) unanvaries 17-th | Continuous assessment has decided patient announced availabless (plane to emigrated within the source of interest continuous course), as searching a section of the continuous course, and a searching a searching a searching and a searching course before \$100 - 100 | Instrumental assessment has identified potential environmental sensitivities (prior to implication) within the same of construction influence. **Therefore the post is not sensitive controlled to the post of th | Concentration accurated that interface plantial invariance or senging of the configuration of | Controllering Association has desirable printed exceptionals profession by the designation with the case of printed instruments of the controllering and t |
| Baseline Information used | Information on: reservoir management, measured reservoir outflow, water resource modelling of outflow in critical drought years, paged river flows and levels; routine WPD water quality monitoring, water quality and flow pressures (abstraction licence and discharge contemporary of the properties). The properties of the properties of the properties are propertied, the properties water SW information; macroireverbasic sampling is talk and LIFE MAHTPINADA and WHPTASPT EQI scores, fish abundances from monitoring surveys; Fishire Lissolitation Scheme (2) data and publishy available data on deligipated sites, distributions or deligipated sites and deligipated si | yel outflow in critical drought years, gauged river flows and levels; routine WD water quality innotationig, water quality and flow pressures; [abstraction licenze and discharge; consent legisters]. Yorkshire Water STW information; macroinverbehrate sampling data and LIFE, WHPFINATOR and WHPFISFF EQI scores, fish abundances from monitoring surveys, Fisheries (Classification Scheme (2) data and publicly available date on designated sinsk, discharbolism of | information on: reservoir management, measured reservoir outflow, water resource modelling of outflow in critical decouplet years, gauged river flows and beneix, contine WPD water quality monitoring, water quality and flow pressures (abstraction learnes and discharge consent segglesters), Vorsibre Water STW information; macroinventrations sampling data and UFF, WHPPNATNA and WHPFNAFF EQI scores, fish abundances from monitoring surveys, Fisheries scaling control of the control | to-commental assumment used fruction. Water and finderment Aprilop data and information on represent management, missaular function entires, state reconsummentality of uniform or other demant press, pages for loss, and function, and the Water study montains, state regular self-up pressures (bibliotication linear and discharge counter registers), 195 STV information, macroinventables sampling data and LIFE, WOPPINIAN and STATE of the state of the substances from montaining revery. Febrich conference function former (or data April 1974 CER states, to shouldness from montaining revery. Febrich conference functions of the should be species and reversional recourses, in addition to local finderment Agency / Trotaline Water from being the state of the state of | Information on: reservoir management, measured reservoir outflow, water resource model of outflow in critical drought years, pauged rivine flows and levels; notatine MVPD water qua- monitoring, water quality and flow pressures; [abstraction licence and discharge com- gregaters], Yorkshire Water STW information; macroinventurbute sampling data and I WHIPTIANTA and WHIPTIANT EQI (scores, fish abundances from monitoring curveys, Falls CLISSORICATION SHORM (2) 4 that and publicly available data on deligipated risks, distributions | ality of outflow in critical drought years, gauged river flows and levels; routine WFD water quality sent monitoring, water quality and flow pressures (abstraction licence and discharge consent In Flesoitance), Verkshipe, Water STW information: marrinesarcherus sampling risks and IIFF | Information on: reservoir management, measured reservoir outflow, water resource modelling outflow in critical droughty years, gauged river flows and flowler, troutine Why water quality and flow pressures (abstraction ficence and discharge consequence), water quality and flow pressures (abstraction ficence and discharge consequence), water STW information; macroireverbeats campling data and UFF WHYPTAST Edg scores, fish abundances from monitoring surveys, Fisharia (Cassification), Series (2) data and publicly available data on designated stee, distributions or discontinuous confidence (2) data and publicly available data on designated stee, distributions or discontinuous confidence (2) data and publicly available data on designated stee, distributions or designated stee, distributions or designated stee, and designated steep and designated steep designations and designated steep an | Information on: reservoir management, measured reservoir outflow, water resource modelling yell outflow in critical drought years, paged river flows and levels; routine Well water quality informationing, water quality and flow pressures (labstraction lizence and discharge conse- ring pageset, frontains Water STW information; macroiwerebeats camping adat and LIF (registered, frontains) water STW information; macroiwerebeats camping adat and LIF (registered, frontains) of the design of the state of the st | el Information on: reservoir management, measured reservoir outflow, water resource modelling your dutative in critical disought years, gaped riven flows and levels, roadies WFD water quality in monitoring, water quality and flow pressures (abstraction licence and discharge consent registers), Vorsiber Water SFW information; meacrineverbeate sampling data and LIFE, WHIPTINATA and WHIPTINSPT CDJ scores, fish abundances from monitoring surveys, Febries (Classification, Scheme (2) state and publish or yearlished data on designated steels, estitutions of |
| Summary of additional baseline monitoring requirements | botals of additional baseline monitoring experiments are incorporated within the footness and the process of th | obtain of additional baselies maintening requirements are incorporated while the Environmental Monitoring Plan, listing the features to be monitored and methods used plocation, training and Requesting of survey, and who will undertake the monitoring. Monitoring of unfarrier information, required prior to the center of a designite to dominist beam surveius impacts, particularly visiting to the designated lites where impacts need to be confirmed. | Oracle: of additional baseline membering requirements are incorporated white the forecommental Monitoring Plan, Stinigs the Statues to be monitored and methods used- founds to the property of convey, and who will understate the monitoring. Monitoring of forecasts of the property of property, particularly relating to the designated obes where impacts need to be confirmed. | possis of additional baseline monitoring requirements, are incorporated within the Environmental Monitoring Para- tioning the features to be monitored and methods used location, timing and frequency of surveys, and who will understate the monitoring. | botals of additional busine monitoring requirements are incorporated within four-connectal Monitoring Plan, listing the features to be monitored and methods socials, simple and trequency of universe, and who set socialized plan from monitoring Monitoring methods and the second section of the second section of the second section second section of the second section of the second section section of the second section of the second section confirmed. | the betals of additional baseline monitoring requirements are incorporated within the self-fivenomental Monitoring File, listing the features to be monitored and methods used integrated for integrated frequency of survey, and who will undertake the monitoring Monitoring Section Linear Computer of Section 1997, and the section of the s | basis of additional baseline morbitring requirements are incorporated within the forestromental Monitoring Plan, Stoling the features to be monitored and methods used tocalion, timing and frequency of survey, and who will undertake the monitoring. Monitoring to attribute information, required prior to the second and disruptive decisions the uncertainty production of the | chicals of additional baseline monthlying requirements are incorporated within the commonweal Monitoring Plan, String, the finance to be monthered and methods used locations, training and frequency of survey, and who will undertake the monthoring. Monitoring controlled in the company of the controlled interest in acquisite given to see of a designify to address the uncertain impacts, particularly relating to the designated sites and species. | chash of additional busines monitoring programments are incorporated within the Concommental Monitoring Plan, Kindig the Nations to be monitored and methods used positions, transg and frequency of survey, and who will understate the monitoring Monitoring of software information is required prior to the confidence of a drought to address the uncertain impacts, particularly relating to the designated ships and species. |
| Miligation measures | biligation resource and accompanying monitoring base base identified for service imports, we cought option (features of monitorine and major sentitions), and minor sentiments subsignated dates. All and about through discontinuous that for incomment Agency. Deals are subsignated as a feature date of through discontinuous that for incomment Agency. Deals are subsignated as a feature about through discontinuous and accompanied accompanied and accompanied and accompanied accompanied and accompanied accompanie | obligation measure and accompanying anothering been been shartfed for serious impacts of their design of serious cell encoder and major secreticists, and misor annothering to designated sizes, a silk-based introductions with the ferrorment Agency, betals are incorporated within the Environmental Monitoring Plan | Miligiation resources and accompanient manifolding loves been identified for services required the strongle region fliations of evidence and major semilimities, and militar semilimities to designated ties: a site above) through discouls with the furnicomment Agoncy, Details are semilimized within the Environmental Monitoring Plan. | Magation measures and accompanying monitoring have been identified for serious impacts of the drought option (Sections of moderate and major sensitivities, and minor sensitivities to designated after a listed about) through discussion with the Environment Agency, Datals are incorporated within the Environmental Monitoring Plan. | batigation measures and accompanying monitoring base been identified for serious impacts that except ordine planners of medicate and major annotation, and amore smolthestic designated sizes a situate above) through discussion with the EA. Details are incorporated this allowage of the planners of the Environmental Monitoring Plan. | self-Magazion nessores and accompanies monitority base less identified for serious impacts, is their designed option (factors of medican and super-ambitions, and more seminates and designated rests as it is also also prompt discount with the foreign and and also also also also also also also also | beging the measure and accompanying anothering have been identified for socious impacts, bein designly organic planning of medicals and supply sensitivities, and minor sensitivities being the sensitivities of the sensitivities and sensitivities, and minor sensitivities designated size - a like about 19 month discussion with the fix. Details are incorporate within the Environmental Monitoring Plan. | of biggetion measures and accompanying monitoring have been identified for serious injunctions are supplied or serious impacts when example sentancies, and more sentancies in disciplinate and sentancies and more sentancies in disciplinate sizes. Self-disciplinate sizes a self-disciplinate sizes a self-disciplinate size and self-disciplinate sizes and self-disciplinate sizes are self-disciplinated within the Environmental Monitoring Man. | Obligation instances and accompanies monitoring base been cleanflied for sortical imposes of these design spation flatteness of endorse and major executions, and more executions to longitude date, as shall design plent places and major executions, and more executions to longitude date, as shall design plent places on white Environment Agency, Details are incorporated within the Environmental Monitoring Plan. |
| impact on other activities a.g. Schwiese, Industry ex | Screening identified no further impacts. | Screening identified no further impacts. | Screaming identified no further impacts. | Screening identified no further impacts. | Aucroment standing possible further impacts on the contract of the contract o | Associated identified possible further impacts on | Screening identified no further impacts. | Screening identified no further impacts. | Screening identified no further impacts. |

Appendix 4.8 EA Drought Orders

Environment Agency Drought Order compensation flow reduction actic

There are two resevoirs in our region that are Yorkshire Water assets no longer used for water supply and we would not be able to use them for supply in a drought. If drought actions were required for either of these two sites, it would be the Environment Agency's responsibility to apply for a Drought Order in accordance with the Environment Agency's guidelines Compensation only reservoirs in dry weather note, June 2019. However, as they are Yorkshire Water assets we have created environmental impact reports and would carry out the monthing and mitigation if they were implemented.

| Option name | South West Area Reservoir 5 Triggers – Risk of shortage of supply established: | South West Area Reservoir 9 Triggers – Risk of shortage of supply established: | | | | |
|---|---|---|--|--|--|--|
| Trigger(s) | Individual Resevoir Stocks < Normal Control Line and approaching Drought Control Line (within | Individual Resevoir Stocks < Normal Control Line and approaching Drought Control Line (within) | | | | |
| ingger(s) | 1-2 weeks) 2. Individual Resevoir Stocks have crossed Drought Control Line and remained below for more | 1-2 weeks) 2. Individual Resevoir Stocks have crossed Drought Control Line and remained below for more | | | | |
| | than 4 weeks | than 4 weeks | | | | |
| Most likely authorisation in a drought (permit or order) | Environment Agency Drought Order | Environment Agency Drought Order | | | | |
| Current Legal Requirement (Compensation release, minimum maintained flow or authorised abstraction limit) | Compensation release is 1.33 MI/d (defined in Act as 293,000 gallons/day continuous) | Current compensation releases are provided under a flow trial agreement held with the Environment Agency, Cort. Dec. 100 Mild and Sep. 126 Mild and and and and and and and an | | | | |
| Action 1 Description Deployable Output of action - Variable | Compensation release reduced by 50% to 0.67 MI/d providing 0.67 MI/d benefit | Reduce the current compensation release by 50% to; Oct-Dez 200 M//d providing a benefit of 2.00 M//d Jan-Sep 0.39 M//d providing a benefit of 0.39 M//d | | | | |
| depending on conditions and duration of drought order Action 2 Description | Compensation release reduced by 67% to 0.44 MI/d providing 0.89 MI/d benefit | Reduce the current compensation release by 67% to; Oct-Dec 1.32 Mild providing a benefit of 2.68 Mild Jan-Sep 0.65 Mild providing a benefit of 1.33 Mild | | | | |
| Implementation timetable Preparation time, time of year effective, duration | Time of year effective: implemented when reservoir stocks approach drought control line so co effect on downstr | erind 5.5 weeks (divertisement, representation, enquiry, granting) uld be effective any time of year. Compensation release reductions may be phased to minimise area watercoares. f restriction typically 12 weeks | | | | |
| Permissions required and constraints Including details of liaison with bodies responsible for giving any orders or approvals | A public enquiry | y required following application of a drought order may be required. ronment Agency. | | | | |
| Risks associated with option | | ts. These will be assessed through the Environmental Assessment Report submitted with the cation. | | | | |
| Risk to the Environment (Major/Moderate/Minor or uncertain) | hydrological and water quality assessment identified a zone of impact of the drought option on hydrology (fiver flow and level). The assement concluded that there would be Major impacts on hydrology (fiver flow and level) and a Moderate risk to water quality associated with this option. The overall impact on and Moderate risk to water quality associated with this option. The overall impact on and a Moderate risk to water quality associated with this option. The overall impact on and a Moderate risk to water quality associated with this option. The overall impact on and a Moderate risk to water quality associated with this option. The overall impact on and a Moderate risk to water quality associated with this option. The overall impact of the drought option of the risk risk product of the drought option of the risk risk risk risk risk risk production. | | | | | |
| Summary of likely environmental impacts include details for features of moderate and major sensitivity and minor sensitivity features from designated sites | Environmental assessment has identified potential environmental sensitivities (prior to immigation) within the zone of influence to: NERC and Notable Fish - numerous (Minor to Moderate) White-claved crayfish (Moderate) White-claved crayfish (Moderate) Water voic (Moderate) Corpley Clough NR (Moderate) Word or word (Moderate) WFD compliance Macroinvertebrates (Minor to Moderate) WFD compliance Macroinvertebrates (Minor to Moderate) Macroinvertebrates (Minor to Moderate) Fish (Monor to Moderate) Fish (Moderate) WFD compliance Macroinvertebrates (Minor to Moderate) Fish (Moderate) Fish (Moderate) Fish (Moderate) | | | | | |
| Baseline information used | Environmental assessment used YWS and EA data and information on: reservoir management, measured reservoir outflow, water resource modelling of outflow in critical drought years, gauged river flows and levels; routine WPD water quality monitoring, water quality and flow pressures (abstraction licence and discharge consent registers); YWS STW information; macroinvertebrate sampling data and LIFE, WHITHATDA and WHITPASTE EQ scores, fish abundances from monitoring surveys, Fisheries Classification Scheme (2) data and publicly available data on designated sites, distributions of NERC Act Section 41 priority species, distribution of Invasive and Non-Native Species and recreational resources, in addition to local EA / YWS knowledge. | | | | | |
| Summary of additional baseline monitoring requirements | Details of additional baseline monitoring requirements, are incorporated within the Environmental Monitoring Plan, listing the features to be monitored and methods used; location, timing and frequency of surveys; and who will undertake the monitoring. | | | | | |
| Mitigation measures | Mitigation measures and accompanying monitoring have been identified for serious impacts of the drought option (features of moderate and major sensitivities, and minor sensitivities to designated sites - as listed above) through discussion with the EA. Details are incorporated within the Environmental Monitoring Plan | | | | | |
| Impact on other activities e.g. fisheries, industry etc | Screening identified no further impacts. | Screening identified no further impacts. | | | | |
| WFD Compliance | Reaches 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would no associate with WTD deterioration based on the criteria outlined in the Environmental Assessmen Report. Reach 2: Impacts on macroinvertebrates and fish would be minor. The Impacts would not be associated with WTD deterioration based on the criteria outlined in the Environmenta Assessment Report. Reach 3 and Reach 4: Impacts on macroinvertebrates and fish would be minor. The Impact would not be associated with WTD deterioration based on the criteria outlined in the Environmental Assessment Report. | Reach 1: Impacts on macroinvertebrates and fish would be moderate. The impacts would not be lassociated with WTD deterioration based on the criteria outlined in the Environmental Assessment Report. | | | | |
| Additional information | droughth order. The reservoir cannot be supported by any other reservoirs therefore it has a trigger for implementing the drought action that is linked to its own stocks rather than regional | This drought option could only be implemented if the Environment Agency applied for a droughly option order. This reservoir cannot be supported by any other reservoirs therefore it has a trigger for implementing the drought action that is linked to its own stocks rather than regional stocks where the transport of the property of the considered taking into account the risks. | | | | |

