Draft
Final Drought Plan
2022

Appendix K: **Extreme drought measures**

United Utilities

Water for the North West

1 Introduction

The actions set out in this drought plan have been carefully selected, designed and tested to ensure that we can maintain a resilient supply during drought, and minimise any impact on customers and the environment. If we experience an extreme drought we will do everything in our power to delay the need for level 4 severe drought restrictions such as standpipes (Drought Plan Section 2.4.6).

Any additional actions that we take after using non-essential use bans and before needing to implement level 4 restrictions will need to be very carefully considered at the time and will depend greatly on specific conditions faced. Some examples of actions we will consider are provided in Table 1, along with information that we will use to help make a decision on whether to proceed at the time. We will also consider regional connections and coordinated actions with neighbouring companies.

2 Extreme drought actions

This appendix outlines the extreme drought actions we could take to delay the need for Level 4 severe drought restrictions such as emergency drought orders, which include standpipes and rota cuts. We have reviewed the potential extreme drought actions suggested by the Environment Agency in the latest drought plan guidance. All of the actions in Table 1 would be considered for all resource zones. The drought level at which these actions would take place and the likely benefit would be dependent on the event at the time and the forecast. When considering the implementation of any of these extreme drought actions, the environmental impacts of the action would be assessed alongside the timescales required to implement them. The priority and order in which these actions are implemented are dependent on the event. Some may start being discussed earlier in the drought due to the lead times required, so we have therefore not provided a priority order. We have, however, ordered the actions according to feasibility and provided indicative timescales to provide an indication of the complexity associated with implementing each action. This is not an exhaustive list of options and in a drought event other options may be investigated and implemented to reduce the chance of reaching drought level 4. Several of the actions detailed in the table are already mentioned in the drought plan at previous drought levels, however we would consider extending the actions prior to drought level 4.

As well as our Drought Plan we also develop contingency plans for each of our water supply zones, which detail:

- options for re-zoning
- locations of critical customers (for example hospitals)
- locations to inject potable water from tankers and fill them up, and
- how much bottled water we would require to serve our priority customers.

These would be used in conjunction with this appendix.

Table 1 Potential Extreme drought actions we would look to implement before putting rota cuts and standpipes in place. Ordered from most to least feasible. Timescales are indicative.

Type of action	Water resource zone	Action summary	Drought level	Likely benefit/ saving	Comments/ Barriers	Environmental impacts	Timescales
Demand	**All**	**Media & Communications**	These actions would be considered in level 3 in this likely order.	Logically, this action will result in a reduction in demand. However, we do not believe it is possible to quantify the saving. Over and above the savings from other communications noted in this drought plan	Media and communications would be continued throughout the drought event. The frequency and severity of messages would increase as the event progressed.	No environmental impact	1 week
Supply	**All**	**Tankering**	These actions would be considered in level 3 in this likely order.	The benefit of this action is dependent on the number of tankers deployed and the distance between the nearest healthy source to fill from to the area being supplied. High level estimate is 2 to 10 Ml/d.	We have a large fleet of tankers which would be utilised to move water as required. They can be used to fill service reservoirs or pump directly into the mains when demand outstrips supply and would form a major part of the response in an area where the source water was depleted. Tankering is most useful where the area of water shortage is relatively small, and there are options to fill the tankers from an alternative healthier source. The challenges with tankering are the distance between the available source and the injection points; the further the distance the less water can be injected into the system within a day.	Minor environmental impact from emissions.	1 week
Supply	**All**	**Network changes**	These actions would be considered in	Would be determined on a case by case basis taking account current	We would consider more significant network changes than those detailed in the earlier drought levels, including	No environmental impact.	2-4 weeks

			level 3 in this likely order.	resource position and water availability.	putting in place temporary pipes to speed up construction processes.		
Supply	**All**	**Pressure management**	These actions would be considered in level 3 in this likely order.	Would be determined on a case by case basis taking account current resource position and water availability.	Pressure management reductions are covered in the drought plan against drought levels 1 to 3. We will consider further reductions in pressure where possible, whilst still maintaining essential services.	No environmental impact.	2-4 weeks
Demand	**All**	**Supply pipe repairs**	These actions would be considered in level 3 in this likely order.	Approximately 1 to 3 Ml/d.	In extreme drought situations we would review our policy on private/customer leakage. This would require customer's permission which is not guaranteed and availability of resource to undertake action across sector.	No environmental impact.	3-4 weeks
Supply	**Strategic and Carlisle**	**Use emergency storage**	These actions would be considered in level 3 in this likely order.	Would be determined on a case by case basis taking account current resource position and water availability.	This will provide a minimum of 20 days storage, and is defined in our water resources modelling for each of our reservoirs. This action will be triggered when the storage reduces to this pre-defined level.	Possible environmental impact which would be assessed before use e.g. fish rescues.	Immediate once emergency storage level reached.
Supply	**All**	**Trades/transfers**	These actions would be considered in level 3 in this likely order.	Would be determined on a case by case basis taking account current resource position and water availability.	We would approach neighbouring water companies for short term trades and transfers of water during a drought. We would also review bulk transfers already in place. One barrier we found in 2018 was that other water companies were in a similar position, and therefore did not have any water to trade. The geography of the North West means we have fewer connections compared to other companies across the water industry.	Possible environmental impact from other companies which would be assessed before use.	Dependent on location, drought event and benefit required.
Supply	**All**	**Regional actions**	These actions would be considered in	Would be determined on a case by case basis taking account current	Through our links in Water Resources West and Water Resources North we would look to where water use plans across sectors could be used to share	No environmental impact.	Dependent on location, drought event and

			level 3 in this likely order.	resource position and water availability.	resources, and support/combine drought order applications. For Water Resources West, this is covered in Appendix J, which details how we would all work together to support each other during a drought. A similar approach would be adopted for Water Resources North.		benefit required.
Supply	**All**	**Drought orders**	These actions would be considered in level 3 in this likely order.	Would be determined on a case by case basis taking account current resource position and water availability.	We would review our full range of power (application under ordinary drought order legislation - section 74 (2) of the WRA 1991) available with drought orders. Available actions include (subject to conditions or restrictions specified in the order): • Take water from any source specified • Modify or suspend conditions on an abstraction licence • Discharge water to specified places • Modify or suspend discharges or filtering/treating of water held by the company • Modify or suspend restrictions or obligations that apply to the taking, discharging, supply or filtering/treating of water held by others (e.g. the Environment Agency) • Authorise the Environment Agency to stop or limit the taking or discharging of water from/to specified sources or places • Prohibit or limit particular uses of water under Drought Direction 2011	Potential for environmental impacts.	Timings will vary depending on the urgency of the situation. Normally within 28 days.

					Examples of specific actions we would take under these powers include: • temporary increases to licences that have been reduced or revoked • compensation flow reductions • abstraction from alternative sources We may also apply for additional powers under a drought order to restrict the use of water as specified in the Drought Direction 2011. The environmental impacts and Water Framework Directive objectives associated with these actions will be assessed. We will only consider sources which will be of benefit to the current event. Any drought orders implemented would then be included in future drought plans.		
Supply	**All**	**Mobile plants**	These actions would be considered in level 3 in this likely order.	Would be determined on a case by case basis taking account current resource position and water availability.	We would consider temporary mobile plants to support dosing to enable the use of poorer quality raw water.	Not likely to cause any environmental impact but will be considered and assessed.	Dependent on location, drought event and benefit required.
Supply	**All**	**Non-potable use**	These actions would be considered in level 3 in this likely order.	Would be determined on a case by case basis taking account current resource position and water availability.	We would consider the option of supplying non-potable water to some farmers and non-food industry where agreed. We would utilise non-potable tankers and ensure independence from our potable water supply to prevent any concerns around water quality.	No environmental impact.	Dependent on location, drought event and benefit required.
Supply	**All**	**Effluent re-use**	These actions would be considered in	Would be determined on a case by case basis taking account current	It is unlikely we would consider redirecting effluent re-use into potable supply as this is deemed controversial,	No environmental impact.	Dependent on location, drought

			level 3 in this likely order.	resource position and water availability.	an option could be to use effluent as a non-potable source or to replace compensation.		event and benefit required.
Supply	**All**	**Supply schemes**	These actions would be considered in level 3 in this likely order.	Would be determined on a case by case basis taking account current resource position and water availability.	We would consider fast tracking options from our Water Resources Management Plan. The main challenge with this option are the timescales that sources would take to bring online.	Environmental impact should have been assessed through WRMP	Dependent on location, drought event and benefit required.