

APPENDIX B

Appendix B Drought options forms (including a summary of the results of environmental assessments)

APPENDIX B

Drought options forms

Descriptions of all drought options are provided in the tables included in Appendix B. The options are described briefly, covering both demand and supply side options, including drought permit options. The information presented is split into two categories, option implementation assessment information and environmental assessment information. The information presented for the option implementation assessment for each option is as follows:

- Trigger for implementation of the option
- Benefit from the option in MI/d through either demand saving or supply provision. The demand saving or DO of our drought options is calculated in line with our WRMP methodology which can be found in Appendix I of our WRMP 2019. The methodology used to calculate the yields for our Drought Permit options is included in our Drought Plan main document, section 6.1.4.
- Time taken to implement the option
- Permissions required and constraints relating to the option
- Risks associated with the option

Each option also includes a high level summary of the assessment of the environmental impact of the option, which is principally relevant to the drought permit options. This environmental assessment information covers:

- Risk to the environment
- Summary of potential environmental impacts
- Details of studies undertaken
- Monitoring requirements
- Mitigation actions

The table also identifies impacts the option may have on other activities.

The Appendix B tables closely follow the guidance set out in the Environment Agency's 2020 Drought Plan Guideline.

The options are presented with demand management options included first followed by supply side options which are sorted by WRZ.

Mitigation actions proposed in the EARs along with details of permits and approvals potentially required in order to implement these mitigation measures are presented in the final section of this appendix.

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Companywide options

		Media campaign to encourage water efficiency
Option Implementation Assessment	Trigger(s) Or preceding actions	Drought Event Level (DEL) 1. May be brought in earlier if overall water resource situation warrants it. The media campaign would be enhanced as the drought event develops.
	Demand Saving or DO of Option (Mld)	The demand savings that are likely to accrue from a media campaign are very difficult to estimate. We implemented media campaigns in 2003, 2005/6 and 2012, and the data obtained over that period has been analysed. The assumption included in the LTOA / FCD as part of the savings achieved when the trigger is reached is that there would be saving of between 0 and 2.2 % for London and 0 and 3.8% for Thames Valley. This figure was reviewed following Drought Direct 11.
	Implementation Timetable Preparation time, time of year effective, duration	Preparation time is of relatively short duration as no third party permission is required. The time to implement is therefore restricted to a number of weeks, with the longest lead time item being media booking. A media campaign is effective all year round, with the largest savings likely to be achieved during the spring and summer period due to potential reductions in garden usage
	Permissions required and Constraints Including details of liaison carried out with bodies responsible for giving any permits or approvals	No third party permissions are required.
	Risks associated with option	There is little risk associated with this measure.
Environmental Assessment	Risk to the Environment (High/Medium/Low or unknown)	There is no risk to the environment associated with this drought option.
	Summary of possible Environmental Impacts	N/A
	Details of studies Undertaken & required	N/A
	Monitoring Requirements	N/A
	Mitigation Actions	N/A
	Impact on Other Activities e.g. Public, Industry etc	There will be minimal impact on other activities.

		Leakage
	Trigger(s) Or preceding actions	Drought Event Level (DEL) 1 (preceding action)/DEL 2 full implementation.
Option Implementation Assessment	Demand Saving or DO of Option (M/d)	<p>A number of aspects of leakage-management can be accelerated.</p> <ul style="list-style-type: none"> ● Enhanced leakage activities (may yield up to 20 MI/d when fully implemented) include: <ul style="list-style-type: none"> ● Reduce repair time for customer side leakage (CSL) to reduce the average run-time of CSL ● Increase active leakage Detection & Repair activities (including Trunk Mains) ● Reduce visible Repair Cycle Times ● Reduce visible leakage burst pipe inspection cycle time <p>Enhanced Pressure management (may yield about 7 MI/d when fully implemented) covers:</p> <ul style="list-style-type: none"> ● Enhance pressure management in existing schemes (this will require mitigation in tall buildings) ● Acceleration of new pressure management areas
	Implementation Timetable Preparation time, time of year effective, duration	Most leakage activities require approximately 1 month planning and preparation before beginning to yield savings. The pressure management activities require significant preparation and investigation, hence will take between 3 to 6 months to implement.
	Permissions required and Constraints Including details of liaison carried out with bodies responsible for giving any permits or approvals	To reduce leak repair times permissions would need to be given by the Councils and TFL to allow reduced noticing for street works.
	Risks associated with option	None
Environmental Assessment	Risk to the Environment (High/Medium/Low or unknown)	Low
	Summary of possible Environmental Impacts	Minor adverse effects associated with emissions as a result of construction activities and vehicle movements. Implementation of this measure may prevent other more environmentally damaging measures being required.
	Details of studies Undertaken & required	Not applicable
	Monitoring Requirements	Not applicable
	Mitigation Actions	Not applicable
	Impact on Other Activities e.g. Public, Industry etc	None

		Temporary Use Ban
Option Implementation Assessment	Trigger(s) Or preceding actions	DEL 2. May be brought in earlier if overall water resource situation warrants it. Will be preceded by a media campaign to encourage water efficiency.
	Demand Saving or DO of Option (Mld)	The demand savings that are likely to accrue from a temporary use ban are very difficult to estimate. In summary, it is estimated that the demand-side measures for the London WRZ, will provide cumulative savings up to and including Level 3 of 14.5%. For the Thames Valley WRZs the revised cumulative savings are 19.1%.
	Implementation Timetable Preparation time, time of year effective, duration	Preparation time is of short duration as no third party permission is required however we will provide formal notification to customers and allow for representations which will be taken into account. The time to implement is therefore restricted to 3 weeks. Temporary Use Ban will be most effective during the spring and summer growing seasons, but will retain some effectiveness throughout the year due to the impact of the other measures under the temporary use ban.
	Permissions required and Constraints Including details of liaison carried out with bodies responsible for giving any permits or approvals	No third party permissions are required
	Risks associated with option	There is little risk associated with this measure.
Environmental Assessment	Risk to the Environment (High/Medium/Low or unknown)	Risk to the environment would be minimal, as only private gardens would be affected. Implementation of this measure may prevent other more environmentally damaging measures being required.
	Summary of possible Environmental Impacts	N/A

	Details of studies Undertaken & required	N/A
	Monitoring Requirements	N/A
	Mitigation Actions	N/A
	Impact on Other Activities e.g. Public, Industry etc	The principal impact will be on domestic customers as the ban would preclude the use of hosepipes for those use categories set out under the temporary ban powers. The Temporary Use Ban would include an exemption for commercial businesses in respect of the washing of private cars and washing of windows. The elderly and disabled would also be exempt from the measures imposed under the Temporary Use Ban. There may be some impact on the horticultural business sector in general as plant buying patterns would have the potential to change during the imposition of a Temporary Use Ban

Drought Plan Direction (England) Drought Order – Non Essential Use Ban

Option Implementation Assessment	Trigger(s) Or preceding actions	DEL 3. May be brought in earlier if overall water resource situation warrants it. Will be preceded by a Temporary Use Ban.
	Demand Saving or DO of Option (Mld)	The demand savings that are likely to accrue from a ban on non-essential use are very difficult to estimate. We have not had a ban on non-essential use in place since 1990 an application was made in 2006, but this was withdrawn after the situation improved. The assumption included in the LTOA / FCD for the savings achieved when the measure is implemented is that there would be a saving of between 0 and 4.4% for London and 0 and 4.8% for Thames Valley depending on time of year. This saving would be achieved together with the savings arising from the temporary use ban.
	Implementation Timetable Preparation time, time of year effective, duration	Preparation time would be required to prepare the Statement of Reasons, for the public consultation, the public hearing if required and the determination by the Secretary of State. The time to implement is therefore a likely minimum of 8 weeks but could run to 10 weeks or more.
	Permissions required and Constraints Including details of liaison carried out with bodies responsible for giving any permits or approvals	Permission is required from the Secretary of State. A public hearing is likely to be required in order to enable objectors representations to be heard.
	Risks associated with option	There is little risk associated with this measure.
Environmental	Risk to the Environment (High/Medium/Low or unknown)	Risk to the environment would be low , with private gardens and parks affected. Implementation of this measure may prevent other more environmentally damaging measures being required.

	Summary of possible Environmental Impacts	N/A
	Details of studies Undertaken & required	N/A
	Monitoring Requirements	N/A
	Mitigation Actions	N/A
	Impact on Other Activities e.g. Public, Industry etc	The option carries the risk of economic impact on businesses that benefit directly or indirectly from water usage that may be banned under the terms of the Drought Direction 2011. These include window cleaning businesses, building washing businesses, sports and leisure facilities, vehicle washing businesses, garden equipment and plant sellers. However, there is the potential to be selective in implementing a ban on specific uses of water that may be included in a NEUB Drought Order, which provides the opportunity to minimise economic impact where appropriate. A Regulatory Impact Assessment will be submitted with any application for Emergency Drought Orders to provide an assessment of the costs and benefits of the implementation of this option.

		Emergency Drought Order
Option Implementation Assessment	Trigger(s) Or preceding actions	DEL 4. May be brought in earlier if overall water resource situation warrants it, or if there are specific water resource / supply problems in localised areas. Emergency Drought Orders will be used as a last resort, when all other reasonable drought measures have been implemented.
	Demand Saving or DO of Option (Mld)	The demand savings that are likely to accrue from an emergency drought order are very difficult to estimate. We have not implemented an Emergency Drought Order. The assumption included in the LTOA / FCD for the savings achieved when the measure is implemented is that there would be saving of 18% in London and Thames Valley. The extent of the supply and demand restrictions imposed under an Emergency Drought Order can be increased where necessary, and so the demand saving will be adjusted to match the available water supply.
	Implementation Timetable Preparation time, time of year effective, duration	Preparation time would be required to prepare the Statement of Reasons, for the public consultation, the public hearing if required and the determination by the Secretary of State. Due to the likely contentious nature of the measure, it is likely that the process will take longer than the application for Ordinary Drought Orders. It is estimates therefore that the time to implement is a minimum of 8 weeks but could run to 10 weeks or more.
	Permissions required and Constraints Including details of liaison carried out with bodies responsible for giving any permits or approvals	Permission is required from the Secretary of State. An Inquiry would be required in order to enable objectors representations to be heard.

	Risks associated with option	In the event that the water supply situation is such that widespread supply restrictions are required, there are potentially significant public health and public order risks associated with the imposition of Emergency Drought Orders.
Environmental Assessment	Risk to the Environment (High/Medium/Low or unknown)	Risk to the environment would depend on the seriousness of the overall water supply situation and the demand restriction measures imposed. Significant adverse effects may arise as a result of restricting water use with potential impacts for recreation and tourism assets, and businesses/economy (population and human health. It is likely, however, that if Emergency Drought Orders are required, they will not contribute significantly to any overall environmental damage caused by the lack of water resources.
	Summary of possible Environmental Impacts	N/A
	Details of studies Undertaken & required	N/A
	Monitoring Requirements	N/A
	Mitigation Actions	N/A
	Impact on Other Activities e.g. Public, Industry etc	Depending on the scale of the required demand and supply restrictions, there could potentially be significant impact on the daily lives of the public and on the economy of the affected area. A Regulatory Impact Assessment will be submitted with any application for Emergency Drought Orders to provide an assessment of the costs and benefits of the implementation of this option.

London Strategic Options

		Thames Gateway Water Treatment Works
Option Implementation Assessment	Trigger(s) Or preceding actions	TGWTW Operating Agreement naturalised Teddington flow remains at or below 3000MI/d for 10 or more days and DEL (DEL) is at least DEL1.
	Demand Saving or DO of Option (Mld)	100 MI/d
	Implementation Timetable Preparation time, time of year effective, duration	The TGWTW would take between 4-6 weeks to ramp up to full output although this may be up to 90 days if the plant has recently had significant replacement of essential components. This estimate is based on our current protocol of running the plant in the early part of the year to ensure it is in state of readiness so that the ramping up to close to maximum output is from a status of water into supply of approximately 50 MI/d. The Environment Agency must be informed before the scheme is switched on. Normally the scheme would be implemented at lower than full output and gradually increased.

