

**National Water Resources Plan -
Draft Framework Plan
Technical Appendices**

**Appendix D
Level of Service**

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Data Disclaimer:

This document uses best available data at time of writing. Some sources may have been updated in the interim period. As data relating to population forecasts and trends are based on information gathered before the Covid 19 Pandemic, monitoring and feedback will be used to capture any updates. The National Water Resources Plan will also align to relevant updates in the National Planning Framework.

1.1 Level of Service

The term Level of Service (LoS) refers to the reliability of supplies customers can expect from us and is expressed as a frequency or return period. For example, if the LoS is described as 1 in 50, as a customer, you should only ever expect to experience an outage or severe limitations to your supply once every 50 years.

This is directly linked to the yield assessments, which calculate the estimated yields for a range of return periods based on analysis of historic records. The Supply Demand Balance (SDB) is then developed using a given LoS from the yields calculated for the corresponding return period.

The LoS, we define, will have a significant impact on the level of investment needed. Typically, the greater the Target LoS, the higher the amount of investment needed, as more resilient infrastructure is required. However, a lower LoS accepts a greater risk of implementing water restrictions that can have negative social, economic and environmental impacts.

To place the Level of Service in context, we have reviewed the targets which are set in the UK. These targets are expressed as the frequency of restrictions to customers' water use. The results from this review are presented in Table 1-1.

The targets in Table 1-1 set out the planned frequency of the UK Utilities' use of a variety of measures designed to reduce demand and increase supply during drought periods.

We have broadly categorised the measures used in the UK, based on their likely impacts on customers or the environment. These measures are delivered in a range of ways.

- The first tier, water-use restrictions, reduce water demand and are limitations on what could be considered 'discretionary' water use, such as watering gardens with sprinklers or hosepipes, but a range of other measures are included which can be more restrictive. The UK water utilities have phased implementation plans for these measures based on consultation with their customers. Similar powers, available to Irish Water through Water Conservation Orders.
- The second tier of restrictions increase water supply by extending abstractions from rivers and lakes above the abstraction licence conditions, or by starting to abstract from rivers and lakes that are not currently used as water sources. These are measures that may have a negative short-term environmental effect, however, mitigation will be implemented as part of the measure. Prior to implementing these measures, consent needs to be confirmed by their Environmental Regulator through a formalised process. In Ireland, there is currently no such mechanism in place for this process to be carried out.
- The third tier allows UK water utilities, through ministerial direction, to introduce more severe customer restrictions that can affect the customers' water supply to a further extent than the first-tier water-use restrictions.

It should be noted that the actions of the Drought approach aim to maintain customer supplies in drought events beyond the actual LoS. The Drought approach reflects the current infrastructure and may plan for restrictions more often than the target LOS would require.

Table 1-1 UK Water Utility Level of Service

Water utility	Tier 1: Water use restrictions	Tier 2: Restrictions that could have an economic or environmental impact	Tier 3: Regulator challenge target for maintaining an effective supply
Anglian Water	1 in 10 years	1 in 40 years	1 in 200 years
Welsh Water	1 in 20 years	1 in 40 years	1 in 200 years

Water utility	Tier 1: Water use restrictions	Tier 2: Restrictions that could have an economic or environmental impact	Tier 3: Regulator challenge target for maintaining an effective supply
Northern Ireland Water	1 in 10 years	1 in 40 years	Not set
Severn Trent Water	3 in 100 years	3 in 100 years	1 in 200 years
South West Water	1 in 10 years	1 in 20 years	1 in 200 years
Southern Water	1 in 10 years	1 in 20 years	1 in 200 years
Thames Water	1 in 10 years	1 in 20 years	1 in 200 years
United Utilities	1 in 20 years	1 in 35 years	1 in 200 years
Wessex Water	1 in 30 years	1 in 30 years	1 in 200 years
Yorkshire Water	1 in 25 years	1 in 80 years	1 in 200 years
Scottish Water	Not stated	1 in 40 years	Not set

Table 1-1, above, also shows that most UK water utilities plan to apply some restrictions, on average, approximately once every 10 years (1 in 10 years). The table also shows that more onerous demand restrictions and provision of emergency supplies are planned to be applied approximately every 1 in 40 years on average. The application of emergency drought measures, such as implementing water cuts to customers, is rarely envisaged, and would certainly never be required more frequently than once in every 100 years.

These expressions of LoS relate to customers' expectations of essentially unrestricted water use, subject to an ongoing effort to improve water efficiency.

In 2018 the UK water utilities were challenged to ensure customers receive a restricted, but effective, water supply in a 1 in 200-year drought event. This is the point at which interruptions to water supplies and the provision of emergency alternative supplies would be used because of water availability issues rather than a water quality or network incident. Also, a new metric was introduced to identify each Water Utility's customers who are at risk of not receiving this level of supply. This will report for the first time in July 2018. The current level of service is likely to be generally over 1 in 100 years.

This focusses in on an important distinction between Level of Service in the UK and Ireland. Our reporting of the baseline conditions for this first NWRP are for the provision of an effective supply, rather than the provision of an unrestricted supply.

Currently, Irish national legislation provides Irish Water with powers to restrict use during droughts. These powers were used us for the first time in the Summer of 2018.

1.2 Irish Water Level of Service

The current LoS in Ireland varies from one location to another. It ranges between less than 1 in 10 and greater than 1 in 50. In dry or severe winter conditions, many customers already experience interruptions to supply despite considerable efforts by Irish Water in partnership with Local Authorities. There is additional uncertainty in the LoS, which will be available in the near future, due to the unknown impact that impending Abstraction Legislation, to be introduced in support of the Water Framework Directive, will have on current available supplies.

Therefore, taking all these things into consideration, for the purposes of this NWRP, we present the Supply Demand Balance with a LoS to accept water supply failures once in every 50 years.

Figure 1-1 below, provides an overview of what a 1 in 50 LoS will look like for customers with expected frequency of Water Conservation Orders every 1 in 10 years and active pressure management, such as night time restrictions, which may mean temporary loss of supply every 1 in 50 years. Currently, we cannot increase abstraction or commence abstraction from a new source in the event of drought or a major issue with supply. If such measures could be used, these would reduce the potential impacts to customers in emergency events.

MEASURE	HOSEPIPE BAN	INCREASE ABSTRACTION/ FIND NEW SOURCES	UNPLANNED OUTAGE
IMPACTS	Reduce demand Minor impact to customers	Increase supply Potential environmental impact	Reduces demand Major impact to customers
FREQUENCY	1 in 10 years	1 in 30 years	1 in 50 years
ESCALATION OF MEASURES			

Figure 1-1 Level of Service and measures involved