

LTOA Description and Operation

The LTOA is a Section 20 Water Resource Management Agreement under the Water Resources Act 1991 between the Environment Agency and Thames Water (originally under Section 125 of the Water Act 1989). The agreement regulates the licensed abstraction of surface water from the lower River Thames between Windsor and Teddington (abstraction licence no. 28/39/M/2, known as the M2 licence) to Thames Water's Thames Valley reservoirs in west London and to the Lee Valley reservoirs in north London (via the Thames-Lee Tunnel).

The LTOA provides the management framework for day-to-day operational decisions on Thames Water's abstraction from the lower River Thames. The agreement is based on ensuring that sufficient flow passes over Teddington weir (measured at Kingston gauging station) relative to the prevailing seasonal reservoir storage of the Thames Valley and Lee Valley reservoir groups. This requires close monitoring of river flows and reservoir levels to set abstraction rates, with daily liaison between the Environment Agency and Thames Water. Daily abstraction rates are therefore controlled by:

- The licence conditions of the M2 abstraction licence:
 - Overall licence: Annual maximum of 663,729Ml; daily maximum of 5,455Ml; daily maximum averaged over the year 1,818Ml.
 - Individual intakes daily limits: Datchet 2,273Ml; Staines 682Ml; Laleham 1,364Ml; Walton 1,264Ml; Hampton 109Ml; Thames-Lee Tunnel 682Ml; Surbiton 109Ml.
- The control rules for deciding on the appropriate environmental flows (Teddington target flows, TTF) over Teddington Weir (the freshwater contribution of the River Thames to the Upper Tideway), as established through the Lower Thames Control Diagram (LTCD), which include:
 - Date (in calendar year).
 - Total London reservoir storage.
 - Water use restrictions in place (relating to Thames Water's Level of Service).
 - Teddington Target Flows.

Four residual flow TTF values are included in the LTCD. Normally there is a minimum residual flow of 800Ml/d in the River Thames at Teddington. However, as the volume of available reservoir storage reduces, it triggers a stepwise reduction in the Teddington flow. Each step change in TTF below 600Ml/d requires the implementation of greater demand control measures by the Environment Agency and Thames Water, for example hosepipe bans. This stepwise reduction progresses from 800Ml/d to 600Ml/d, followed if necessary by further reductions to 400Ml/d and then 300Ml/d¹. The responsibility for decisions on changes of the TTF lies with the Environment Agency (South East Area, Environment Manager) and Thames Water's Asset Management Director.

¹ It is noted that the minimum residual flow requirement under the M2 abstraction licence is 200Ml/d, but that the LTOA is in place only down to a minimum residual flow of 300Ml/d. Formal agreement from the Environment Agency is required in order to vary the Section 20 LTOA, and operate under the M2 Licence minimum residual flow of 200Ml/d. Therefore, to operate at TTF below 300Ml/d is outside of LTOA operating limits, and has not been assessed in the Stage 1, 2 or 3 studies.