

## THE GRENFELL TOWER INQUIRY

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### Written Opening Submission Thames Water Utilities Limited

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1. Thames Water Utilities Limited (“TWUL”) operates the public water network across London, including in the area of Grenfell Tower. TWUL supplied the water to the mains to which the London Fire Brigade (“LFB”) connected and drew water to help fight the fire at Grenfell Tower on 14 June 2017. TWUL does not own and is not responsible for water infrastructure on private or council-owned land. That means that TWUL was not responsible for the water infrastructure inside Grenfell Tower or on the land where the building is situated.
2. On the morning of 14 June, TWUL received a call at 01:28am from the LFB notifying them of the incident and requesting that a TWUL technician attend the site. In response, two TWUL Network Service Technicians (“NSTs”) were dispatched to the scene, arriving just after 02:00am and reporting to the LFB Command Unit to be on hand to assist and take direction from them as required.
3. From the point of arrival, the NSTs were involved in liaising with the LFB in relation to water flow and water pressure and assisted in providing additional water to the area when requested to do so. With the first two NSTs arriving just after 02:00am, two further NSTs joined the team at 04:30am and a new NST shift team arrived at 07:30am to take over from the existing NST teams.
4. The water distribution network is divided into District Metered Areas (“DMAs”), the Grenfell Tower area being served by “Barrow Hill DMA 59”. The LFB made their first request to the TWUL NSTs for an increase of water at 02:30am. In response to the LFB’s request, additional water flow was directed to DMA 59 by the NSTs opening a District Boundary Valve (“DBV”) and thereby joining a

neighbouring DMA ("DMA 13"), and providing additional water. A second request for additional water flow was made by the LFB at 10:24am, and again the NSTs opened a further DBV thereby connecting a further DMA ("DMA 16") and creating additional flow. The DBVs were then closed at 17:30 (the DBV for DMA 13) and 17:45 (the DBV for DMA 16) on the same day in agreement with the LFB.

5. The opening of a DBV is a complex process that requires the NST to go to the location of the relevant valve and physically open that valve. It is not however simply a case of switching the valve to the 'open' position and leaving the water to flow. When opening the DBVs, the NSTs had to take great care to ensure that any impact of a sudden increase in water pressure did not cause pipes in the network to burst, which would have had an obvious detrimental impact on water flow. Other factors had to be considered too; they included ensuring that the water supply was not contaminated (for example by sediment either side of the DBV) to avoid any public health risks to other customers who will have been drawing water from the same supply.
6. Water pressure is the force that pushes water through the pipes. Water pressure determines the flow of water from the tap, or hydrant, and if the pressure is not sufficient then the flow of water can slow. Pressure varies during the day depending on the demand for water placed on the supply system.
7. The pressure levels that TWUL are required to maintain within the water network and at the point where water is drawn off by fire authorities should however be distinguished from the pressure levels required when fighting a fire. The LFB will draw the water by connecting LFB fire appliances to fire hydrants in the vicinity; a fire hydrant being the connection point to the mains supply. The pressure of water in fire hoses discharged onto a fire does not however come from the hydrants or water network; it is generated from the fire appliances themselves, from which water can be pressurised. The levels that a fire appliance can generate in order to fight a fire are far higher than the pressure levels present within the water network and at a fire hydrant.
8. TWUL uses meters to monitor and record water flow and pressure in each DMA. There is no statutory obligation to achieve a minimum numeric level of pressure at hydrants for firefighting, although TWUL is obliged to report to

Ofwat as a service indicator any instances where water pressure achieved at a property for domestic purposes at the external stop tap is less than 10 metres per head of water (1 bar of pressure) at a flow of 9 litres per minute. In respect of water flow for fire-fighting, the National Guidance Document on the Provision of Water for Firefighting (January 2007, 3<sup>rd</sup> edition) gives the ideal water flow to be achieved for firefighting multi occupied housing developments with more than two floors as *“a minimum of 20 to 35 litres per second”*.<sup>1</sup>

9. On 14 June, a large number of LFB fire appliances needed to draw off water at the same time due to the unprecedented scale and circumstances of the fire. TWUL has provided evidence to the Inquiry that shows that the data taken from TWUL's meters record that water pressure levels in DMA 59, where Grenfell Tower is located, were consistently at, or slightly above, 3 bar of pressure during the fire; this being well in excess of the regulatory reporting level of 1 bar of pressure. Similarly, in respect of water flow, TWUL's data demonstrates that flows into the combined zone of DMAs 13, 16 and 59 did not drop below 40 litres per second from the time the LFB started to draw off water (approximately 01:15am) and the last DBV being shut in agreement with the LFB (17:45); and in fact were well in excess of this level (peaking at 160 litres per second) for the majority of this time period. This again is well above the ideal flow for fighting fire; the guidance being 20 to 35 litres per second.
10. The LFB Firefighters' evidence submitted to the Inquiry also speaks of the extremely challenging firefighting conditions in and around Grenfell Tower, including falling debris damaging their hoses causing a loss of water from the fire-fighting apparatus. These, and other operational difficulties experienced with water used for fire-fighting purposes (such as in connection with use of the “dry riser” vertical water pipe within Grenfell Tower), were beyond the responsibility and control of TWUL.
11. TWUL's network data shows that for the duration of the fire, there were no issues with the water pressure or water supply within the mains and more water was available if and had it been required.

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<sup>1</sup>

Appendix 5 of the National Guidance Document on the Provision of Water for Firefighting (January 2007, 3<sup>rd</sup> edition). Note that the guidance in Appendix 5 is however only intended to apply to new developments and during permanent system changes.