Lancaster Civic Vision

Celebrating our Heritage – Enhancing our Environment – Shaping our Future

LANCASTER AND MORECAMBE'S WATER SUPPLY

Lancaster Civic Vision Guide 76

People in Lancaster and Morecambe take for granted that they will have a reliable supply of pure water. It was not always so.

Around 1800 the 9000 people in Lancaster borough drew their water from 1300 wells, and open drains along the streets removed their waste. After 1812 the sewage began to be carried away underground in an expanding network of rectangular stone-lined drains, but these tended to get blocked and to leak, polluting the ground water that seeped into the wells, contaminating the drinking water.

The Mill Race into which the drains emptied was an open sewer, which backed up into the streets and houses when it rained heavily and at high tide. See Guide 79 for more details about the Mill Race. Much of Lancaster's water supply was seriously contaminated and death rates were high (compared with other English towns at that time) particularly among the poorer families who lived in the lower-lying parts of the town.



Langthwaite reservoir (top) and Blea Tarn (bottom), east of Lancaster (Source: Google Earth)

Richard Owen's report in 1845 confirmed just how bad Lancaster's water and sewage system was. However, among the ratepayers of Lancaster there was a protracted resistance to spending the large sums needed to rectify this problem and save lives.

The Public Health Act of 1848 strengthened the hand of groups like the local Sanitary Association which campaigned for a Lancaster Board of Health and pressed the Corporation to build an affordable, properly engineered solution to the problem. The Lancaster Waterworks Act of 1852 was the green light.

The peat on Clougha held back the rainwater that soaked slowly into and down through the sandstone of the hill and emerged as very pure water. Edmund Sharpe's scheme collected this water from the becks, springs and bored tunnels and led it through pressure-break tanks at the Old Gauge Basin (near Jubilee Tower), Appletree and Brow Top into the Workhouse Reservoir (later known as Wyresdale Road Reservoir).

These tanks reduced the water's pressure so that the new iron mains and the lead pipes being installed in houses did not rupture. The first houses were connected in 1854: decades later the last of the town's older houses were still being connected up.

An additional cost to Lancaster was the need to build a reservoir at Abbeystead to ensure that Lancaster's abstraction of water, directly or indirectly, from the tributaries of the River Wyre did not lead to water levels in the Wyre so low that mill production south of Abbeystead was disrupted.

The Abbeystead reservoir held 95 days' worth of Lancaster's water usage that could be used to top up the flow in the Wyre during dry weather. The diagram below shows the plan. This diagram and similar later ones have been taken from Horsfield's papers that are referenced at the end of this leaflet. The dashed line for the 1876 scheme appears here as a solid line.

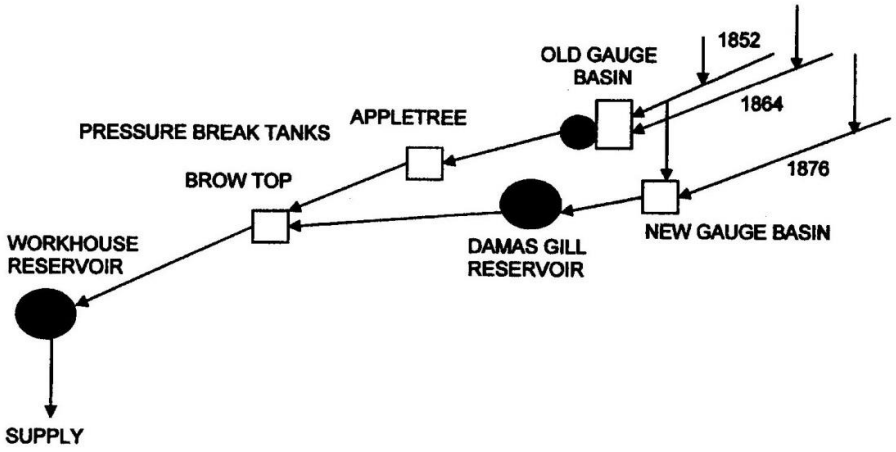


Figure 4. Diagram of Lancaster's water supply system up to 1881, showing the original 1852 scheme, the additional collection pipe built in 1864, and the 1876 scheme in dashed lines. Adapted from *Souvenir of the Opening Ceremony of the Langthwaite Reservoir Lancaster* (Anon 1935; LRL PT 8586; LRL PL 55/1)

By 1901 Lancaster's population had reached 40,000 and its water system had also been supplying rapidly expanding Morecambe and Heysham since 1864, so the rest of the nineteenth century saw a sequence of schemes to expand the supply.

A second source on Clougha was fed through the original system in 1864. A new supply was created in 1876 with a supply reservoir at Damas Gill (1891), south of Hare Appletree, which led into Brow Top Tank. The next expansion was the building of Blea Tarn Reservoir on Blea Tarn Road to take more water from the wider Clougha area, and a filter house was built in 1913 on the A6 (Scotforth Road) at Burrowbeck Bridge and expanded several times in the twentieth century.

Blea Tarn Reservoir was built between 1896 and 1901. The official opening ceremony in 1902 was captured by Mitchell and Kenyon in a very early silent film that can be viewed at: Watch Opening of the Blea Tarn Reservoir (1902) online - BFI Player The original supply line got its own filter house on Langthwaite Road, again to remove discoloration in the water, balance its pH and kill bacteria. The next expansion was the building of the even bigger Langthwaite Reservoir on Little Fell Lane, which opened in 1935. The system in 1935 is shown below. The opening of Langthwaite was again captured on film: https://www.britishpathe.com/video/lancasters-new-reservoir.

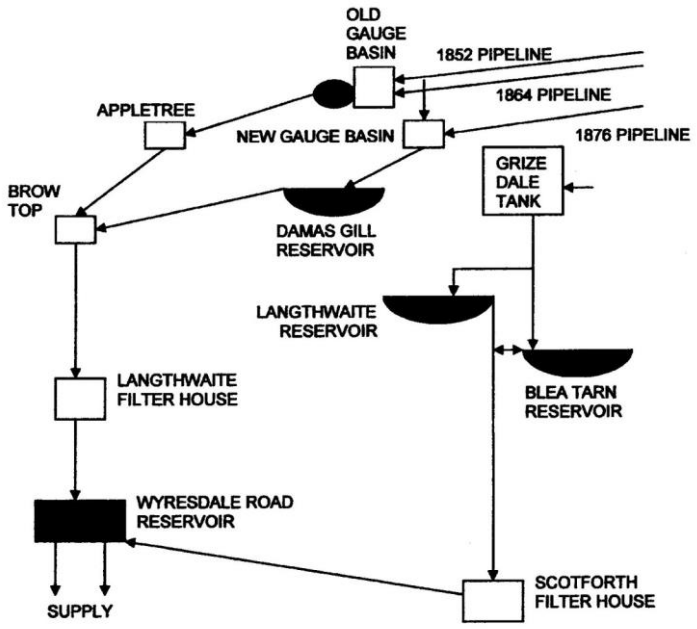


Figure 7. Diagram of Lancaster's water supply system in 1935. Adapted from *Souvenir of the Opening Ceremony of the Langthwaite Reservoir Lancaster* (Anon 1935)

The expansion of the water supply so far has been based on collecting more water from Clougha. In 1941 a connection was made from the Thirlmere-to-Manchester supply that runs in tunnels and aqueducts east of Lancaster. This allowed Lancaster to tap into this major supply when needed. This source of water now has its own Water Treatment Works.

In 1961 the responsibility for Lancaster and Morecambe's water supply passed from the Corporation to the Lune Valley Water Board and then to the North West Water Authority in 1974. It then moved to North West Water in 1989 (a privatised company) that merged with NORWEB in 1995 to form United Utilities who are the current operator.

In terms of sources of water supply, the next major development was in 1964 when water could be extracted from the River Lune at Caton and pumped into Langthwaite Reservoir. Blea Tarn reservoir had become an overflow reservoir for Langthwaite.

Also in the 1960s a new holding reservoir was built off Newlands Road and the one next to Williamson Park was extended. The one on Wyresdale Road was closed. The new Water Treatment Works built at Langthwaite in the 1990s (to meet higher water-quality standards) led to the decommissioning of the filter houses on Langthwaite Road (now private housing) and on Scotforth Road (now demolished and the site of student accommodation).

The water-supply system for Lancaster, Morecambe and the surrounding area in 2005 is shown in the diagram below. Today the River Lune is the main source, followed by the Thirlmere supply and finally the old Clougha sources. Langthwaite Reservoir now has a floating array of solar panels.

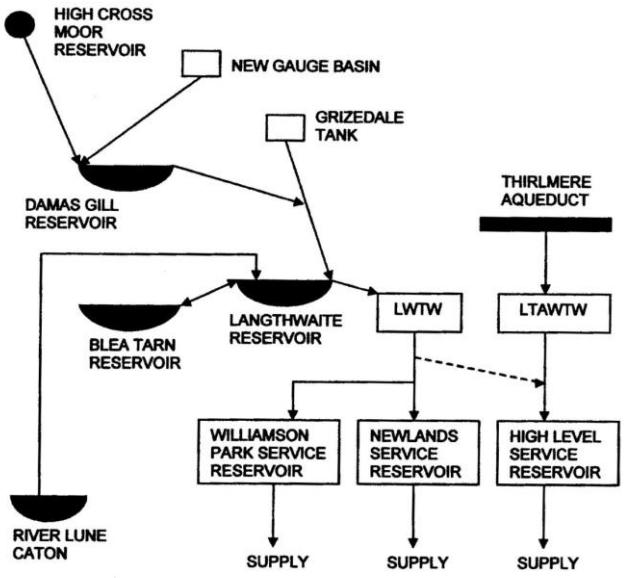


Figure 10. Diagram of Lancaster's water supply system in 2005. LWTW- Lancaster Water Treatment Works. LTAWTW- Lancaster Thirlmere Aquaduct Water Treatment Works (Mick Glover, Lancaster Water Treatment Works, *pers comm*)

Reading

Further details about the historical development of Lancaster's water-supply and sewage systems can be found here:

Horsfield K 2005–6 Lancaster's water and sewerage systems. Parts 1 (the politics) and 2 (the pipes). *Contrebis* 30, pp25–36 and 37–56. This is available online at: https://lahs.archaeologyuk.org and click on "Contrebis".

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