

Part 3

Walking the

Westbourne

*A geological trail along the River Westbourne
from Branch Hill Pond to the Thames*



Part 1

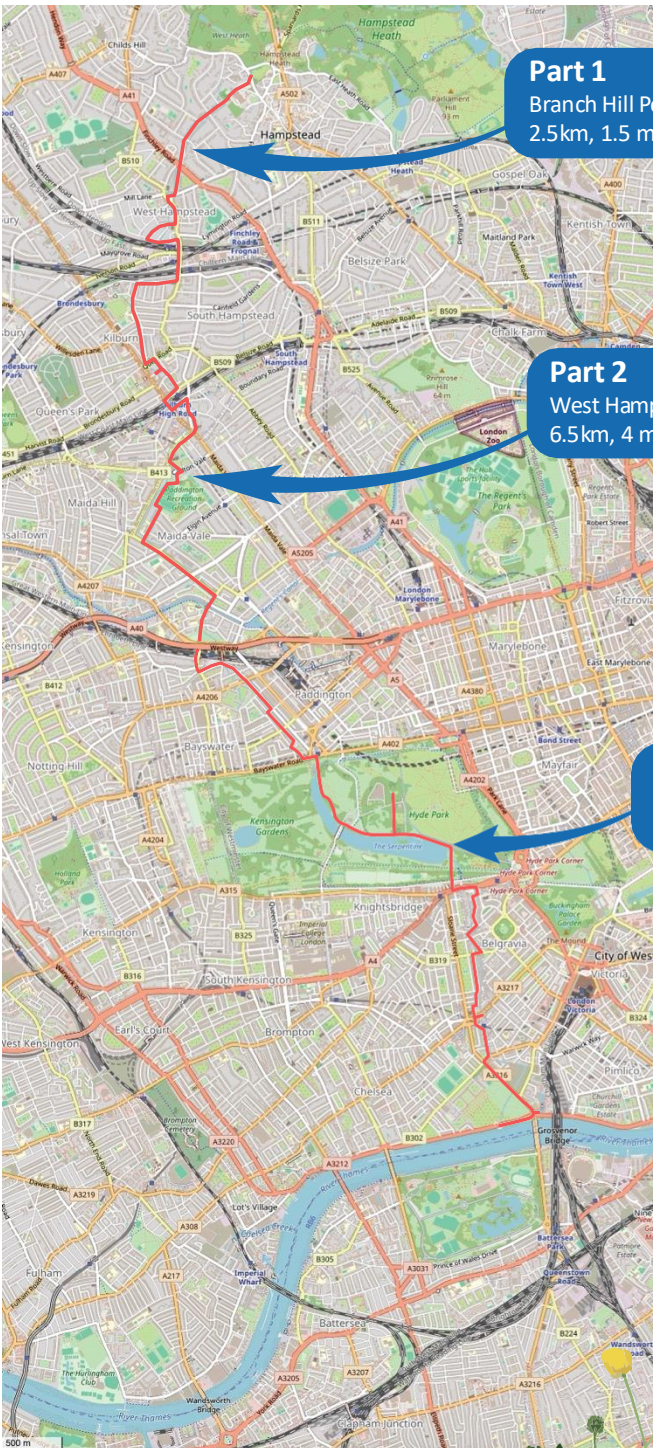
Branch Hill Pond to West Hampstead Station
2.5km, 1.5 miles

Part 2

West Hampstead Station to the Serpentine
6.5km, 4 miles

Part 3

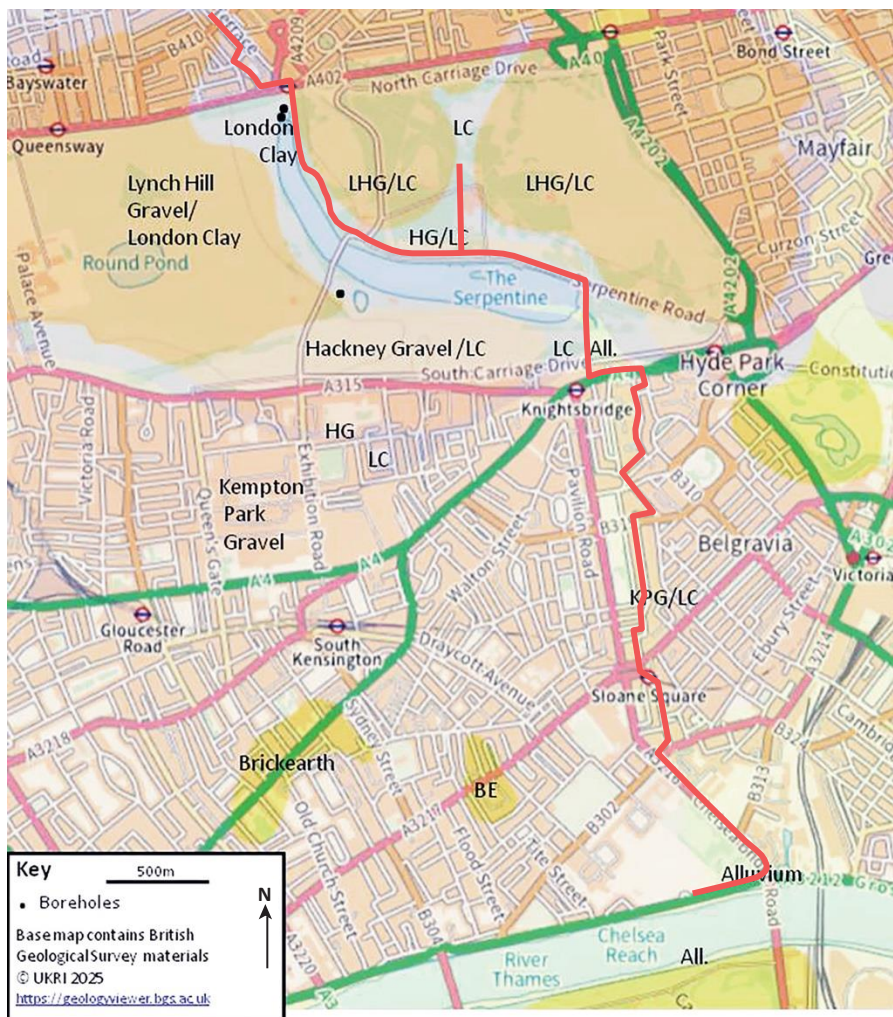
The Serpentine to the Thames
5.5km, 3.4 miles



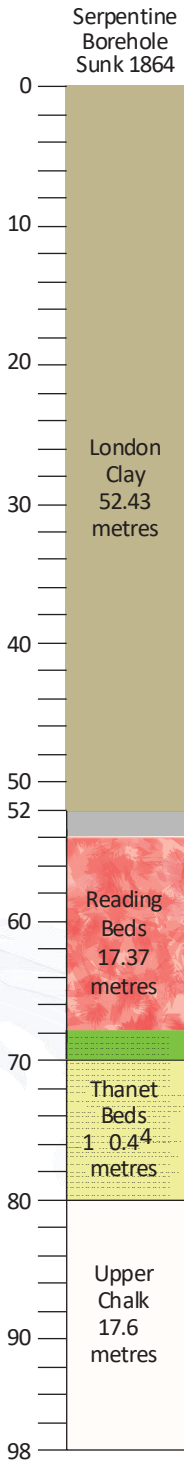
Part 3

The Serpentine to the confluence with the Thames (5.5km, 3.4 miles)

In Part 3, the Westbourne is slightly less lost than in Part 2. The original uncovered route can be seen along the length of the Serpentine and its covered route in a pipe crossing Sloane Square tube station. The route from Hyde Park via the 'Knights' Bridge' down to the Thames, for the most part, is mostly on much flatter ground, with an overall fall in Part 3 of only about 15 metres.



*British Geological Survey map showing geology of the Thames Terraces to inform the text.
The walking route is shown in red.*



Enter Hyde Park from Bayswater Road via the Marlborough Gate and stop in front of the Engine House to admire the Fountains at the top of the Long Water.

Stop 3.1

Fountains at top of the Long Water

When James 1 came to the throne in 1603, Hyde Park ceased to be a hunting ground. But, it was not until 1637 under Charles 1 that it opened to the public. A century later in the 1730s, Queen Caroline, wife of George II, carried out extensive renovations, and it was she who created the Long Water/ Serpentine by damming up the Westbourne. The serpent-like curve follows the natural route of the Westbourne and, on a 17th Century map, this stretch was called the 'Serpentine River'. Now, the term 'Serpentine' is usually reserved for the second of the two lakes, the top lake being known as the 'Long Water'.

The lakes transformed the existing boggy fish ponds into an attractive recreational area for Londoners. Initially, ponds at the top of the Long Water were created as filter beds to clean the water before entering the lakes, but they failed and, a century later, the fountains were constructed instead. They were powered by steam from the Pavilion at the north end.

Notice the much higher the ground on either side of the fountains. This is the Lynch Hill Gravel, eroded by the Westbourne to expose the London Clay beneath. To the west, just south of Bayswater Road, the Rhodes map of 1766 shows this to have been extensively quarried and, on the Carey Map of 1787, Bayswater Road is named Kensington Gravel Pits.

From the path across the top of the fountains walk down the left side (east) of the Long Water.

Stop 3.2

The Ranelagh Sewer in Hyde Park

Initially, the lakes were filled by the waters of the Westbourne. But, at much the same time as the fountains were installed, it was decided that the polluted Westbourne water should be piped underground, and so it was that the Ranelagh Sewer was constructed (discussed earlier at Stop 2.14). Now it is the Ranelagh Storm Relief that runs closest to the lake, with the Ranelagh Sewer itself running further to the east across the northeast (top right) corner of Hyde Park. The lakes are filled with rainwater runoff and by pumping from a borehole beneath the top of the Long Water. The view of the lake is mostly obscured by vegetation, particularly in summer. Where it opens up, admire the view through the Henry Moore sculpture, The Arch, across the water to Kensington Palace. The Arch was created in 1987 from Travertine, quarried near Rome.

Serpentine Borehole Sunk 1864, Whitaker, 1889, Part 2



Details of the borehole sunk in 1864 in Kensington Gardens 'at the northern end of the water (to supply the Serpentine)' can be found in Whitaker, 1889, Part 2. The water being pumped to the surface was from the Chalk aquifer that underlies London (see the cross section drawn by Reynolds in 1849, Stop 1.11). A second borehole, very close by, was sunk in 1998 to supply water for the fountains, which were renovated in 2011. It also provides water for the Round Pond in Hyde Park.

Shortly after, the track divides. Take the left branch up the hill to the road that crosses the lakes via the Serpentine Bridge for another view in the opposite direction – this time towards Big Ben in Westminster.

Stop 3.3

Bridge between the lakes



*Serpentine Bridge
Pointillist at English Wikipedia,
CC BY-SA 3.0, via Wikimedia Commons.*

The Serpentine Bridge was built by John Rennie in the 1820s, between the Long Water and the Serpentine. A third borehole was sunk to the Chalk in 2003, close to the southeast end of the bridge. This was to provide the water for the nearby Princess Diana Memorial Fountain.

It is worth examining the geological map (see beginning of Part 3) while standing on the bridge, as it is very instructive about the routes of the lost rivers. Firstly, it shows that the river has eroded the gravel on either side and that the bottom of the lakes is underlain by London Clay. This is impermeable and probably there was no need to 'puddle' in extra clay to seal the lakes. Towards the far end of the Serpentine, pale yellow Alluvium is shown for the first time. This is a deposit from the bed load of the river and, from there, marking the route of the Westbourne until its confluence with the Thames. Similarly, at the top right edge of the map, the route of the Tyburn can be seen, lined with Alluvium. An eroded area between the two denotes a small tributary of the Westbourne that joins the Serpentine a little further along our route. As with the Westbourne, the Lynch Hill Gravel has been eroded to reveal the London Clay beneath.

Return to the north side of the bridge and continue along the north edge of the Serpentine until the low point in the gravels to the left, just before the first of two small Boathouses. Should you wish to make a small diversion up the Tyburn Brook, turn left and walk past the large Norwegian 'Friendship' Rock from Norway. With the Old Police House on your right, continue to the metalled road. Beyond that, railings can be seen at the top of a grassy track. They surround an old pump.

Stop 3.4

Tyburn Brook (just before first Boathouse)

It is the Tyburn Brook that has eroded the gravel to join the Westbourne. The name is unrelated to the Tyburn River but is a tributary of the Westbourne, emanating from a natural spring near Marble Arch where the 'Tyburn gallows' was situated. Apparently, water still flows from the spring but is now encased in a pipe. The pump was installed in 1869 to take pure spring water from the Tyburn Brook beneath.



Return to the lake and continue to follow the cycle track round the corner of the lake to the Dell. A drinking fountain between the two small boat houses was probably initially fed by water from the Tyburn Brook.

There is a conveniently-placed Dell Café and toilets on the corner. Follow it round to look at the plaque beneath a red ceramic urn opposite the back of the Café.

Stop 3.5

Conduit to Westminster

The conduit plaque informs us that in the 1500s the water was pumped to Westminster as a water supply for that area. Later, it was also used for the ponds in St. James's Park, despite the proximity of the Tyburn. The Tyburn's flow had been insufficient, again demonstrating that the Westbourne was a sizeable river by this point.

Continue along the 'bridge' for a long look up the Serpentine. This is actually the dam and, on the other side, the outfall cascades attractively into the Dell below. A short way beyond, on the Serpentine side, is an urn celebrating Queen Caroline. Retrace your steps to the cycle track leading down into the Dell.

Stop 3.6

The Dell



The Dell is an attractive area, effectively on the other side of the dam at the end of the lake. The outfall tumbles down and finally the water disappears through a grill into a large underground reservoir where it eventually joins the Westbourne proper in the Ranelagh Sewer. At times of high water, this serves as an overflow but, at other times, if the lake is not sufficiently full, water is pumped back into the lake before being mixed with the waste water.

To leave the Park, continue along the cycle track beside the Dell. Take care of cycles as you cross the track at the end, then horses as you cross the sandy route of Rotten Row and, finally, traffic when crossing the busy South Carriage Road. Walk on through Albert Gate that leads onto Knightsbridge.

Stop 3.7

Knights' Bridge

Notice the long drinking trough as you walk between Rotten Row and South Carriage Road. This would have been another important drinking area for horses before the Westbourne was covered. There are two mounting blocks, one on either side of the roadway near the drinking fountain.

According to the plaque on the end, however, this particular trough was removed from Victoria Embankment in 1985 and presented to the Household Cavalry Regiment in memory of the horses killed in the terrorist bombing of Hyde Park. Ironically, the Knights' Bridge had always been a dangerous place for highwaymen.

The name of the district of Knightsbridge sounds as if it originated from a bridge that crossed the main thoroughfare of 'The Road to Exeter'. Although it conjures up an image of Knights in armour crossing the bridge, it is more likely to be derived from the name of the adjoining Manor 'Nyet'.



The image, left, from 1800 shows the outfall of the Serpentine at this point. It is very different now, with the danger more from traffic. From the Rhodes map of 1766, the bridge had crossed what is now South Carriage Road. Formerly, this area had been very prone to flooding.

Because of the buildings, it is now necessary to make a small diversion. Cross Knightsbridge and turn left up the slight rise of the east bank of the Westbourne to Wilton Place, then first right down Kinnerton Street to rejoin the Westbourne.

Stop 3.8

Kinnerton Street and the Thames Terraces

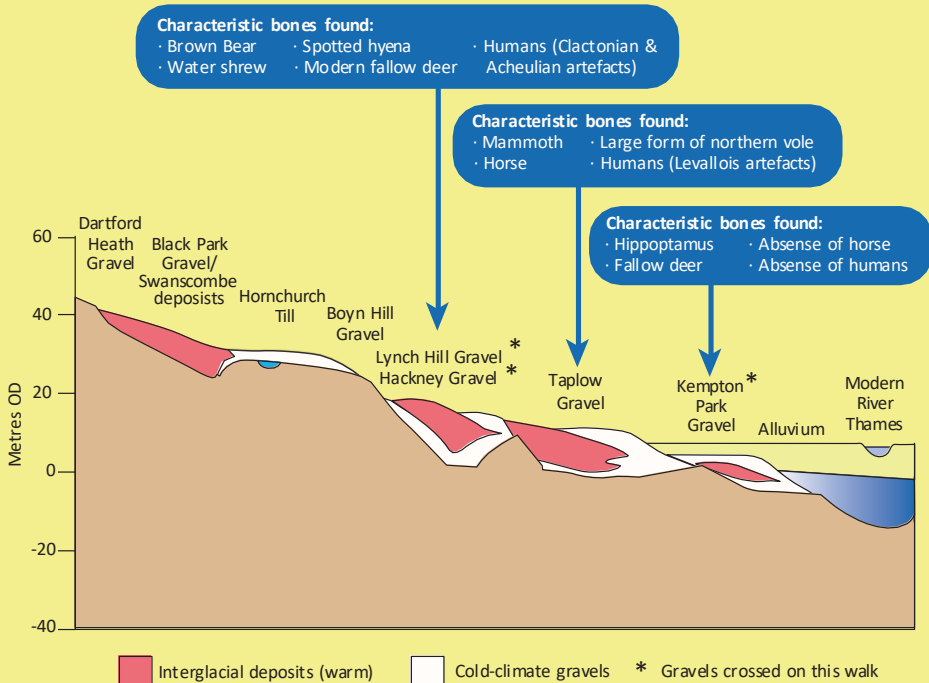
South of Knightsbridge, the Westbourne is now on the flood plain of the Thames. The topography provides little guidance for the rest of the route, but a few notable clues remain. A map showing the Borough boundaries could provide an indication to the route of the Westbourne, which remains the dividing line between the Boroughs of Kensington & Chelsea and Westminster.

Notice the side mews on the west side of Kinnerton Street end in cul-de-sacs where the river had flowed. These were once workshops of tradesmen employed by the wealthy residents of the Duke of Grosvenor's newly built Belgrave Estate. The Wheat sheaf emblem, the Grosvenor Coat of Arms, can be seen above each of the Mews entrances. Later, the polluted river was encased in the Ranelagh Sewer, which follows the same course. This will have made life more pleasant for the mews dwellers. Now, the mews houses are a much sought-after location.

A further look at the Geological Map also shows the route. It travels through Kempton Park Gravel, formally known as 'Flood Plain Gravel'. From a geological viewpoint, London is not very old. In fact, it is less than 450,000 years old (whereas the underlying London Clay is over 50 million years old). The route of the Thames used to go up the present-day Colne River and via the Vale of St. Albans and out to the North Sea in the Clacton area.

Then came the ice-ages. The most extensive of the ice advances, the Anglian, reached as far as north London and blocked the Thames, forming a 'pro-glacial lake' in the area of the Colne as the water backed up against the ice sheet. When the ice melted, torrents of water pushed the Thames in the reverse direction, down the valley of the Colne, and through what became London. Successive ice-ages have left their mark in a series of gravel terraces on either side of the Thames, as the temperature fluctuated.

Walking from the head of the Serpentine, this is the third terrace that the Westbourne crosses. The Lynch Hill Gravel formed the hillocks either side of the Westbourne at the head of the Long Water. The river has carved a valley through the Hackney Gravel, a little lower. It is really only the elevation that divides the two gravels. The youngest in the valley of the Westbourne is the Kempton Park Gravel stretching from Knightsbridge to the Thames. On this route, the intervening Taplow Gravel is not encountered. However, Taplow Gravel occurs just a little further to the west in Exhibition Road. It is difficult to distinguish one gravel from another and, partly, the distinction is based on elevation. More recently, however the mammal assemblages within the warmer phases, associated with each gravel, have enabled a better correlation.



'Staircase' of Lower Thames Gravels, showing the associated Mammal Assemblages. After Danielle Schreve in the Introduction to the Geologists' Association Guide to London, 2023. The oldest is at the top. Lynch Hill, Hackney and Kempton Park Gravels are crossed on this walk.

Kinnerton Street bends round to the right and opposite is Kinnerton Yard (another mews) where a grating with moving water can be seen. This is the point where the Westbourne is crossed to the west bank. Further on, opposite No. 8, stop to look at the wire map showing the route of the Westbourne, (best viewed from the far side).

Stop 3.9

Water's Murmur Mural by Julian Stocks, Kinnerton Street

The steel triptych was created in 2009 as part of the redevelopment of the area. The Westbourne is depicted flowing from Kilburn, through Hyde Park, to the Thames. Appropriately, for an artwork dedicated to water, the steel was cut using a water jet. Julian Stocks adds that it: *"asserts the link between the city and nature. It strives to return this London river to our lives and imaginations. It is both a monument and a navigator to the hidden waters beneath our feet"*

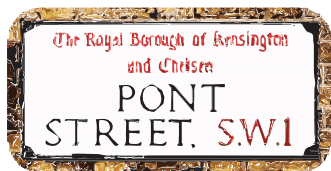


Turn right onto Motcomb Street. At the end, where the Westbourne meets Lowndes Street, there is another grating with moving water. Turn left down Lowndes Street. The main road at the bottom is Pont Street. Turn right along it for a short way, then left down Cadogan Lane.

Stop 3.10

Pont Street

Pont Street is named on the Greenwood Map of 1827, about the time that the area began to be developed. The name traces back to the Pont family, who leased land in the area during the 18th century. Others speculate that it was given a French name to be fashionable! The crossing point is shown on the Greenwood Map just to the east of Cadogan Lane. By 1827, Greenwood shows that the stretch between the Serpentine and the top of Lowndes Street was already culverted. But the lower reaches to the Thames remained uncovered at this date. After Pont Street, the route of the river is on the left-hand side.



Map portion from C. Greenwood's 1827 Map of London from an original survey. Reproduced with the permission of the National Library of Scotland
<https://maps.nls.uk/view/262718342>





At the bottom of Cadogan Lane, the road pattern wiggles again, with D'Oyley Street following the route of the river. This can best be seen from above, on a satellite image, or from the top of the flats opposite. There is another opportunity to listen at the small grating on the corner with Wilberham Place and then again on the left side of the bend.

Follow the bend round through Sloane Terrace, then turn left down Sedding Street to Sloane Square. To see the notice about Blandel Bridge, cross at the junction then walk left, away from Sloane Square along Cliveden Place for a short distance.

Stop 3.11

Blandel Bridge

The red sandstone plaque on the wall of No. 56 Sloane Square recalls the former bridge over the Westbourne at this location. Blandel Bridge is commemorated in the name of Blandel Bridge House. The route can be seen clearly in the alleyway behind the house, aligned with the brick wall on the other side of the road. Between both features, in the middle of the road, is a large round grating, but it is a busy road and listening is not advised. The adjacent road, on the east bank of the river, is named Bourne Street (originally Westbourne Street) for obvious reasons.



Return to Sloane Square and turn left for the Underground Station on the left.

Stop 3.12

Sloane Square Underground Station

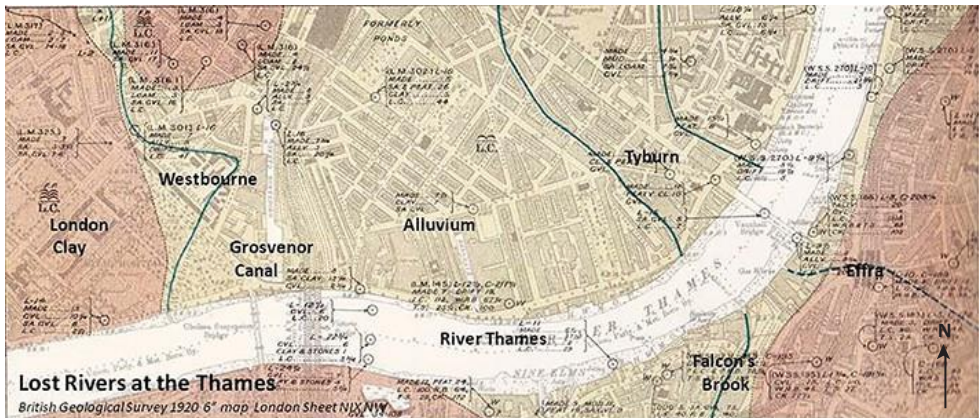


Sloane Square Station is one of the highlights on this section of the walk. A large iron conduit can be seen above the eastbound platform of the District and Circle line. This is the original Victorian pipe through which the River Westbourne still flows. The Westbourne Aqueduct was installed when the station opened in December 1868 to carry the river over the tracks, when engineers constructed the station beneath the level of the river. The conduit is about 1.2metres in diameter and is supported by brick or metal girders and Victorian ironwork.

In 2025, a noticeboard about the River Westbourne, was placed near the exit from the westbound platform, incorrectly stating that the Westbourne flows from Brent to the Thames. It should say from Hampstead Heath. It is necessary to purchase a ticket to view both the notice and the Westbourne Aqueduct.

After the tube station, continue south along Holbein Place to Pimlico Road. Cross at the busy junction to the right and walk down Chelsea Bridge Road. Since Covid, Ranelagh Gardens, part of Chelsea Hospital, is no longer open to the public, although it can be seen through the railings.

The 1920s BGS map portion shows the river making a big V to the east, under Chelsea Barracks. The sewer follows a similar route, both doubling back to the bottom half of Ranelagh Gardens, before the confluence with the Thames.



Stop at the water feature in Mulberry Gardens, part of the new Chelsea Barracks development.

Stop 3.13

Water Feature in Mulberry Gardens, Chelsea Barracks



The water feature adjacent to Chelsea Bridge Road is approximately in the position that the Westbourne took and so it is a welcome reminder of the river at this junction. The barracks closed in the late 2000s, and are currently being redeveloped for residential use, with completion due in about 2033.

Continue as far as Chelsea Bridge, and then turn right to walk along Chelsea Embankment to the point where the sewer went under Chelsea Embankment to join the Thames. This is immediately opposite the entrance to Chelsea Hospital, but the confluence is no longer visible.

Stop 3.14

Ranelagh confluence

The Ranelagh Pleasure Gardens was the most popular entertainment site in London from 1742. As the site of the Chelsea Flower Show, it draws large crowds to this day. Not many of today's visitors are aware that the River Westbourne runs beneath them, albeit in the Ranelagh Sewer.

By the mid-1800s, London's raw sewage flowed directly into the Thames, mostly via the 'Lost Rivers'. The Thames became shallow, polluted, and foul-smelling, culminating in the 'Great Stink' of 1858, which halted Parliament and created a public health emergency, triggering urgent reform.

Sir Joseph William Bazalgette, Chief Engineer of London's Metropolitan Board of Works, was commissioned to build London's first sewage system. This involved designing and building intercepting sewers along the river, to prevent sewage in central London from entering the Thames.

By the late 1860s, the Lost Rivers, including the Westbourne, were channelled into the sewers. High, Middle and Low level sewers work with gravity, so that sewage flows from higher ground in the north and west of London down toward the east, to treatment works at Becton, north of the Thames. A similar system operates south of the Thames, taking the water to Crossness on the Erith marshes.

One aim of the scheme was to narrow and deepen the Thames to increase the flow and also to provide extra space for a road or, in some places, a public garden. The low-level sewers ran underground, inside the new embankment walls, which formed Bazalgette's Victoria Embankment. The new Thames river wall was constructed with granite blocks from the West Country, some of which bore the date 1858, the year of the 'Great Stink'. However, the one pinpointing the confluence of the Westbourne with the Thames has been removed and reinstalled, with other blocks as public artworks across seven sites in the City of London, including Smithfield Rotunda, Carter Lane Gardens, St Paul's surroundings and Christchurch Greyfriars.

The sewers and the Embankment walls also helped to protect London from flooding. Prior to their construction, the wide pale yellow area of Alluvium on the BGS 1920s map was prone to frequent flooding. Notice on the map the four other rivers flowing into this area: the two to the east on the north side are both tributaries of the River Tyburn and the one with a solid blue line immediately opposite is the Falcon Brook, while the dotted line (signalling some uncertainty in the route) is the River Effra. Look also at the white area, labelled Grosvenor Canal, to the east of the V of the Westbourne. This is all that remains of the Chelsea Waterworks Company, founded in 1725, to supply drinking water from the Westbourne to new developments in Mayfair.

The Victorian sewer system has struggled to keep pace with the additional demands for waste disposal in the last decades and, whenever there was a storm, the sewers had overflowed, discharging wastewater into the River Thames, on average once a week. In May 2025, the remedy came to fruition. Instead of the Lost Rivers discharging into the Thames, they have been connected to the Thames Tideway Tunnel, a Super Sewer that runs between 20m and 50m deep, allowing the sewage to flow by gravity underneath the Thames. It eventually joins the main sewer at Abbey Mills Pumping Station from where it flows to Beckton Sewage Treatment Works.

Riverside Space at Chelsea Embankment is a new area of public space, unveiled by The Princess Royal in April 2024. The new Chelsea Quay lies directly above Bazalgette's confluence of the Westbourne. Artist, Florian Roithmayr, was commissioned to create artwork to provide connections

to the Thames, nature and pleasure. *Moving In* is formed of layers of different coloured glazed bricks to highlight the changing water levels of the River Thames. A poem is inscribed up the edge of the dramatic ventilation pipes. Parts of the new space are 'floodable' at high tides, giving Londoners an opportunity to dip their toes in a cleaner River Thames. Although the granite block detailing 1858 has been removed, Bazalgette's cast iron Lion's Foot lamp standard has been retained.



The Westbourne entering the Thames, taken from other side of the river c.2000.



The new Chelsea Quay in 2025 with a view between the ventilation shafts to Chelsea Bridge and the refurbished Battersea Power Station beyond. Note the layered brickwork of the Florian Roithmayr design.

This is the end of the original route of the Westbourne, but water can still be seen in the Grosvenor Canal, which may be a more satisfying end to the walk. To view the canal close to, walk back to Chelsea Bridge, cross the road and it is located a short way on the left.

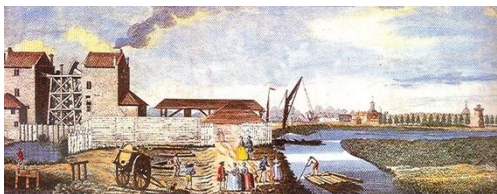
Stop 3.15

Old Chelsea Water Works pumping house

In 1723 the Westbourne was re-directed by the Chelsea Waterworks Company to a new pumping house and treatment works to supplement water from the Thames. Initially, the power to drive it was from horses but, by the mid 1750s, steam was used (as can be seen in the picture from 1752). At this time, the Westbourne would have been relatively unpolluted.

The pumping house was in use until 1850s, when a law was passed prohibiting drinking water from being abstracted from the Thames below Teddington, due to poor water quality. The vast area of land occupied by the waterworks was then repurposed for the construction of Victoria Station, and the railway out of it, but the Grosvenor Canal remains.

The Westbourne no longer flows through the Grosvenor Canal and it was never a navigable river, apart from the small remnant of the diversion.



Chelsea Water Works in 1752 (Wikipedia)

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and more recently D. Clements

https://en.wikipedia.org/wiki/Chelsea_Waterworks_Company

Stop 3.15 marks the conclusion of the Westbourne Walk!

Written descriptions of the walking route of the Westbourne:

London's Lost Rivers: a walker's guide by Tom Bolton.

Strange Encounter Press 2011, pp 10-42 on Westbourne

The Lost Rivers of London by Nicholas Barton and Stephen Myers.

Historical Publications revision 2016, pp 70-83 on Westbourne

London's Hidden Rivers by David Fathers.

Francis Lincoln 2017, pp 26-39 on Westbourne

Less detailed descriptions:

Secret London by Andrew Duncan.

Globetrotter 2003, pp22-27 on Westbourne

Walking on Water: London's hidden rivers revealed by Stephen Myers.

Amberley Publishing 2011, pp 172-183 on Westbourne

London's Lost Rivers by Paul Talling.

Random House Books 2011, pp 12-19

Clements, D. (Ed.) 2023. Geologists' Association Guide No. 68 The Geology of London.

Geologists' Association. Itinerary 10.



**The Redington Frogna Association acknowledge the assistance of
The Curry Fund of the Geologists' Association**
www.geologistsassociation.org.uk

The route can be followed online at:
www.redfrogassociation.org/lost-river-westbourne

£5.00

