United Utilities Water Limited
Haweswater House
Lingley Mere Business Park
Lingley Green Avenue
Great Sankey
Warrington WA5 3LP

Telephone: 01925 237000

unitedutilities.com

Our ref: EIR/ID431
Date: 03/07/2025
Email: EIRRequests@uuplc.co.uk

Dear [redacted]

EIR Reference: EIR/ID/431

Thank you for your request for environmental information. We appreciate your interest, and we want to let you know that your request has been carefully considered in accordance with the Environmental Information Regulations (EIR).

Your request

In the 2013 Windermere Catchment Report, UU states that "infiltration is widespread throughout the network with no identified hotspots and that the network is mainly a combined system."
Please could you provide evidence that demonstrates the following:
1) The estimated contribution of infiltration into the network in volume.
2) Any environmental assessment that has been completed to show the impact of exfiltration from the sewer network into the environment.
3) Any conclusions made around the hydraulic pressure infiltration is having on the network at catchment scale, and how this is contributing to sewage spills in the catchment.
4) All areas mapped by UU as being a combined system.
5) The estimated cost of relining the sewer network.

Our response

1. The estimated contribution of infiltration into the network in volume.

Infiltration is a term used to describe multiple sources and mechanisms of flow into a sewerage network including groundwater, rainfall induced runoff, land drainage, overland flow, river inundation etc. Each of these elements can occur within the public sewer network, or upstream in the private drains and laterals connecting each home or business to the sewerage network. Infiltration rates to the network vary from day to day and from hour to hour and may arise from a small number of point sources, or from a large number of diffused sources, or from a combination of both.
In the context of sewer modelling, “infiltration” from groundwater (or “hydraulic pressure infiltration”) is just one factor used in the modelling process alongside other directly related factors such as rainfall runoff from paved surfaces, road drainage, roof runoff and saturated pervious areas. With the combined impact of these factors being used in the modelling process, rather than aiming to assess, quantify, or define them individually.
As reported in the Windermere Catchment Study, at that time, the infiltration in the area was confirmed as largely rainfall induced, but it wasn’t possible to readily identify many point sources. The most up to date information available on infiltration figures is contained within the latest DWMP

catchment models where a permitted storm overflow exists within the catchment. There are 6 such models in the Windermere catchment, which are summarised below.

WwTW Name	Discharge Reference	Infiltration (baseflow) l/s	Model dry weather flow (l/s)
Ambleside	017370024ST	15.0	22.0
Langdale	LAK0025SO	1.8	3.7
Windermere	LAK0045SO	26.0	43.0
Grasmere	017370027SO	35.0	38.0
Hawkshead	LAK0107SO	2.7	3.7
Near Sawrey	017370030SO	0.5	0.9

It must be noted that these values show infiltration baseflow and model dry weather flows, with the proportionate contributions changing significantly in wet and or storm conditions. As described earlier, it is not possible to use the model to distinguish or quantify specific elements or sources of infiltration where point sources are not identified in the catchment study.
It should also be noted that these figures and the hydraulic models for these areas are being reviewed and updated to support the planned or ongoing enhancement work in the area.

2. Environmental assessment of exfiltration

Exfiltration is not identified and reported as part of our current studies and we have not undertaken any environmental assessments that to show the impact of exfiltration from the sewer network into the environment.

3. Conclusions on the impact of infiltration on the network

Infiltration is one of the factors that is used within our sewer models. As described in section 1 above, these models are used to identify the combined impact of all sources of inflow to the network and to model how these sources and the receiving network (including storm overflows) respond to different weather patterns.
The models are then used as the basis for identifying risk areas and potential options to address these identified risks. Where infiltration is a specific problem in an area, then this will be routinely reviewed and potential, widescale or more targeted, options to reduce infiltration will be investigated. Where these options prove to be cost effective then they will and do form part of the schemes that we implement.
As reported in the Windermere Catchment Study, at that time the infiltration in the area was confirmed as largely rainfall induced, but it wasn't possible to readily identify many point sources. More information on this is included in section 5 below.

4. All areas mapped by UU as being a combined system.

In terms of the areas mapped as being combined sewers, we make both water and sewer records available to view for free. You can view the sewer records at your local authority (you'll need to contact them direct to arrange this). If you wish to view the sewer records, you can do so via United Utilities' on-line viewing facility. Property Searches manages the appointment diary on behalf of UU Water Ltd so please contact us on 03707 510101 to book an appointment. You can read more about this on our website, here: United Utilities - Property Search :

5. The estimated cost of relining the sewer network.

As stated in section 3 we routinely investigate infiltration reduction. Where a storm overflow is identified as a frequently spilling overflow (as defined within the current Storm Overflow Assessment Framework) an infiltration reduction plan is created and these are published and updated on our website, here: (unitedutilities.com/better-rivers/what-we-are-doing/infiltration-reduction-plans/)
Whether it results from an infiltration reduction plan for a frequently spilling overflow, or in the case of Windermere, via a combination or proactive and reactive network inspections, we do implement

targeted relining of specific sewer lengths (or a range of other infiltration reduction techniques), where this is a cost-effective solution to a specific problem in a localised area.
Sewer lining has been considered as one of the potential options for reducing infiltration in the Windermere network. However, the fact that infiltration is widespread throughout the network with no identified point-sources and that the network is mainly a combined system would require an almost complete re-sewering of the Windermere network. This option was discounted as being a viable option at an early stage because it was clearly not cost effective and would also have been hugely disruptive. As such detailed cost estimates for this work where not developed.
It should also be noted that relining of the sewer network alone is unlikely to fully resolve infiltrations issues, as the source of infiltration can be at the property connection and individual inspection chambers, sewer lining would also not remove the other rainfall induced inflows to the network (paved surfaces, road drainage, roof runoff and saturated pervious areas).

We hope that this response answers your request. However, if you're not satisfied with how we've handled it, you can request an internal review. To do this, please write to us at Environmental Information Office, Haweswater House, Lingley Mere, Warrington, WA5 3LP or email us at EIRRequests@uuplc.co.uk, addressing your request to [redacted] and explaining why you're unhappy with our response. We'll be very happy to review your request and ensure we've done everything we can to assist you.

Any request for an internal review should be made within 40 working days of receipt of this response, and we will reply within 40 working days from receipt of the request for internal review.

Kind regards