REFERENCE

2425212

RELEASE DATE

August 2024

SUBJECT

Lough Neagh

REQUESTS & RESPONSES

As part of the course, I am undertaking a project looking at pollution sources in the Lough Neagh catchment. The information I'm requesting is therefore, strictly for research purposes. My aim is to look at agricultural nutrient inputs along with WWTW and septic tank data for the catchment for a true reflection of the current issues and pressures on freshwater systems in the area. I would very much appreciate any data on the following list:

1. *A map of all Wastewater Treatment works (WWTWs) and Combined Sewer Overflows (CSOs) in the Lough Neagh catchment*

   Regulation 6(1)(b) of the Environmental Information Regulations 2004 states that where an applicant requests that the information be made available in a particular form or format, a public authority shall make it so available, unless the information is already publicly available and easily accessible to the applicant in another form or format. The information you seek as this information is already available on NI Water's Internet Site and is therefore considered to be in the public domain.

   Relevant assets can either be viewed on NI Water's Storm Overflow map, by zooming into the geographic area in question, or using our modelled spills spreadsheet and filtering results by receiving waterbody, e.g., Lough Neagh and Lough Neagh peripherals.

2. *Lough Neagh WWTWs effluent data from these from 2015-present*

   There are 339 treatment works that discharge into Lough Neagh, 66 directly and 273 indirectly. This is around a quarter of the total number of treatment

works serving the whole of Northern Ireland. Collectively, the works attributed to Lough Neagh deal with wastewater load from homes and businesses; that is, the population equivalent (PE) of around 580,000 people. They cover the major towns (in alphabetical order) of Antrim, Armagh, Ballyclare, Ballymena, Banbridge, Coalisland, Cookstown, Craigavon, Dungannon, Lurgan, Magherafelt, Portadown and Tandragee. They range from very small treatment works serving a few houses to our largest works at Ballynacorr that operates to a PE loading of around 120,000 and serves the towns of Lurgan, Craigavon and Portadown. Treated final effluent from 339 wastewater treatment works is recycled directly or indirectly back to the Lough. 333 passed compliance in 2023. 23 works, covering over 90% of the population in the Lough Neagh catchment, returned 161 million cubic metres (m3) of final treated effluent in 2023. Annex A attached provides each works and its consent limits.

Please note that NI Water's asset database is ever-changing and evolving and numbers quoted within the Annex may differ from those published previously or elsewhere, as NI Water continuously updates our figures for accuracy and completeness.

Both the Department of the Environment (now the Department of Agriculture, Environment and Rural Affairs - DAERA) and the Department for Regional Development (now the Department for Infrastructure - DfI) agreed on a regulatory framework to assess compliance in preparation for the formation of NI Water in 2007. Compliance of the quality of treated effluent discharged by wastewater treatment works at a defined discharge point was to be assessed for those sites treating greater than 250 PE, using an operator self-monitoring announced sample programme. In 2023, the compliance assessment processes identified that 333 of the 339 works were operating within discharge consents. Compliance was achieved for 99% of the population served. Annex C attached provides effluent data for these works from 2015 to date.

3. *Lough Neagh WWTWs Population Equivalents*

   Column C of Annex A (attached) refers.

4. *WWTWs current Discharge Consents*

Column E of Annex A (attached) details each WwTWs Consented Flow to FullTreatment (FFT).

5. *WWTWs age and date of last upgrade*

WwTW age - column K of Annex A refers.

N.B. This is limited to the age of those works held electronically on our Corporate Asset Register/Geographic Information System (CAR/GIS). For many sites, this information is either considered unstructured, manual data, i.e., held as a hard copy or paper record, or held as structured data within a system, but searching same is a non-automated, manual and resource-intensive exercise. As such, Annex B refers, i.e., this data is considered exempt as manifestly unreasonable to provide under Regulation 12(4)(b) of the EIR.

Regulation 12(4)(b) of the EIR – Manifestly Unreasonable

The Information Commissioner's Office (ICO) considers that information requested should be released unless the public interest weighs in favour of withholding such information. There is a public interest in the information requested being released because this may:

- enable third parties to access information that may help them to challenge a decision made, or an action taken by NI Water; and
- clarify incomplete information.

In assessing the case against disclosure:

The ICO has acknowledged that the amount of time required to respond to a request can make it manifestly unreasonable. However, the ICO also considers that Regulation 12(4)(b) of the EIR does not operate as an equivalent to Section 12 (Cost prohibitive) of the Freedom of Information Act 2000 (FOIA).

This is because Section 12 involves a straight calculation of the time required to respond to a request and, under the FOIA, such an approach allows a public authority to consider the request in isolation from other factors, including their ability to meet the request or the extent to which the time required to meet the request would detract from other functions.

The ICO considers, and NI Water accepts, that Regulation 12(4)(b) of the EIR operates quite differently, in that there is no appropriate limit to act as a cut-off point when responding to requests.

The ICO requires that the request itself be manifestly unreasonable, and not just the time required for complying with it. In practice, Regulation 12(4)(b) requires public authorities to consider a request for environmental information more broadly, taking into account the time to respond to the request as only one factor to be considered along with others, such as the interference with the normal conduct of their activities, or whether compliance entails a significant diversion of resources from other functions.

To allow NI Water to determine whether Regulation 12(4)(b) would provide a robust exception and would be correct in this instance, we have considered the following.

- Time for compliance
- Cost of compliance
- Whether compliance would equate to a significant diversion of resources
- Whether compliance would interfere with the normal conduct of NI Water's activities

Time for compliance

To fully comply with your information access request,

- manually determining whether NI Water holds the information,
- manually locating the information, or a document that may contain the information,

- manually retrieving the information, or a document that may contain the information, and
- manually extracting the information from a document containing it.

would take NI Water in excess of 18 hours and, as such, the Company would deem compliance as taking an unreasonable amount of time.

NB. The time provided should not be deemed to be an accurate timing of actual provision of the information. NI Water has not fully reviewed specific information in respect of exceptions under the EIR that may, or may not, be applicable (e.g. Regulation 13 (Personal Information) and the manual review and extraction process of a vast quantity of documents).

Cost of compliance

In recognising that, under the Regulations, there is no statutory equivalent to the "appropriate limit" under the Freedom of Information Act, in our deliberations, NI Water has also been able to draw upon guidance from the Information Commissioner's Office which states a public authority may only legitimately refuse requests for information on fees grounds under the Act if it would take more than 18 hours to:

- determine whether it holds the information requested;
- locate the information requested;
- retrieve the information from a document containing it; and
- extract the information from a document containing it.

While these guidelines do not constitute a strict test to be used under the EIR, they are a helpful group of guiding principles for identifying the actions which can be considered when determining whether a request is manifestly unreasonable.

For NI Water to answer all your queries, we would need to review a substantial amount of information and the cost of locating, retrieving and

extracting that information would take NI Water in excess of 18 hours and, as such, the Company would deem compliance as taking an unreasonable amount of time.

N.B. NI Water has not factored in the time already spent in answering your other queries or the cost of printing and posting a voluminous response.

Significant diversion of resources and Interference with the normal conduct of NI Water's activities

For NI Water to provide you with the requested information would necessitate the dedicated resources of several members of staff for an extended period of time to:

- determine whether NI Water holds the information;
- locate the information;
- retrieve the information; and
- extract the information from a system containing it.

NI Water's Business Information Officer would then be required to quality assure any extracted documents for potential disclosure. This would divert a key member of a very small team for an extended period of time from other duties.

As I hope you can appreciate from the above, compliance with the request as it stands would divert resources away from the provision of public services for which NI Water is mandated.

In its 'Introduction to EIR Exceptions' the Information Commissioner's Office states:

"It is important to clarify that it is the public interest, not private interests, that are to be considered, and that public interest is not equivalent to simply what the public find interesting".

In applying the public interest test under the Regulations, NI Water has reached the view, given the nature of the information requested, the timing of the request, and the reasons detailed above, that the public interest in withholding the information is greater than the public interest in disclosing the information.

WwTW – Date of last upgrade

Again, this information is either considered unstructured, manual data, i.e., held as a hard copy or paper record, or held as structured data within a system, but searching same is a non-automated, manual and resource-intensive exercise. As such, Annex B again refers, i.e., this data is considered exempt as manifestly unreasonable to provide under Regulation 12(4)(b) of the EIR.

6. *CSO data and/or CSO spill frequency from 2015-present*

Whole of Northern Ireland

As of May 2024, there are 2,444 operational storm overflows deployed across Northern Ireland's public wastewater network, at pumping stations and at treatment works. Details of these are available on our Storm Overflow web page.

Of NI Water's 2,444 operational storm overflows, 82 have EDMs which are operational (signified by a red pin on NI Water's Storm Overflow map) and returning information on when a spill is occurring (count) and for how long (duration).

Spill Volumes

None of the storm overflows have meters to record the volume of spills. Flow meters are very expensive to install and maintain. NI Water endorses the assessment made by Water UK that the cost to install EDMs across the entire network is already significant and the investment required to upgrade this technology to monitor spillage volumes would be more effectively spent fixing the problems, rather than improving their measurement. There may be exceptions to this rule, depending on circumstances, and NI Water will remain

open to these and alert to the application of any lower cost new technologies that may help.

As such Storm Overflow Spillage Volumes are not held and this data is deemed exempt under Regulation 12(4)(a) of the EIR (Information not held). All exceptions under the EIR are qualified and so, in deciding whether to disclose the requested information, NI Water must consider the public interest. However, this is not possible where the information is not held. *Actual, Measured, Recorded*

Spill Counts (Spill Frequency)
For those 82 Storm Overflows with verifiable EDMs, spill counts are detailed on NI Water's Storm Overflow map and, by clicking on each pin, you can see a summary of data for the 12-month period ending 31 December 2023.

Verified Storm Overflow Spill Counts (Spill Frequency) for those 82 Storm Overflows with EDMs is not held before January 1, 2023, and as such this is again deemed exempt under Regulation 12(4)(a) of the EIR (Information not held).

Actual, Measured, Recorded Spill Event Durations
Verified Storm Overflow Spill Event Duration data for those 82 Storm Overflows with EDMs is not held and as such this is again deemed exempt under Regulation 12(4)(a) of the EIR (Information not held). NI Water do though hope to make this available for those assets for the calendar year 2023, before the end of Summer 2024.

Predictive, Modelled, Non-recorded Spill Data
NI Water relies on the analysis and findings of industry standard hydraulic models to simulate observed flows and predict spills across the wastewater networks. As agreed with our Regulators, we have been investing in developing integrated suites of models to understand more accurately the spill performance of storm overflows and their impact on the receiving aquatic environment. Our Drainage Area Study (DAS) models are built and calibrated to industry best

practice (Chartered Institute of Water and Environmental Management) and approved by the Northern Ireland Environment Agency (NIEA). The models are typically simulated using 20 years of historical rainfall data to generate an annual average for frequency and volume of spills.

The models, supported by some flow meters that measure the rate of wastewater flow at various points, give indicative performance predictions but have some limitations. They cannot, for example, take account of operational conditions in the actual network, such as the build-up of silt and blockages which can arise from the disposal of inappropriate materials (such as wet wipes, sanitary items and fats, oil and grease) to sewer.

The results of the models consider average performance in a typical year. Spill performance during years when Northern Ireland experiences abnormally low or high rainfall is not represented in the models.

Although accuracy has improved, predictive modelling still relies on assumptions that mean that it will not be 100% correct. Despite their limitations, models are important in helping us and the NIEA to understand what is happening in our system and where upgrades are required to better protect the environment.

The coverage of our models has expanded following significant investment and now covers over 80% of our network and 50% of our storm overflows.

Predictive, modelled, non-recorded spill data for all NI Water Storm Overflows is available on our website.

Lough Neagh area only

23 works, covering over 90% of the population in the Lough Neagh catchment, returned 161 million m3 of final treated effluent in 2023. Phosphorous limits are set by NIEA at 12 of these works, nitrogen limits at two. Substantial investment will be required to further reduce nutrients in final effluent.

724 storm overflows are designed to spill excess wastewater directly or indirectly to Lough Neagh during periods of intense rainfall. 60 are deemed satisfactory by NIEA, 200 unsatisfactory. The remainder are being assessed. Modelling indicates a total of 279 spills in an average year and a volume of 2.1 million m^3; 10-15% by volume of all spills for storm overflows nationally. By the end of PC212, around 300 EDMs will be installed to monitor frequency and duration of spills.

Nutrient loading to Lough Neagh

Modelling

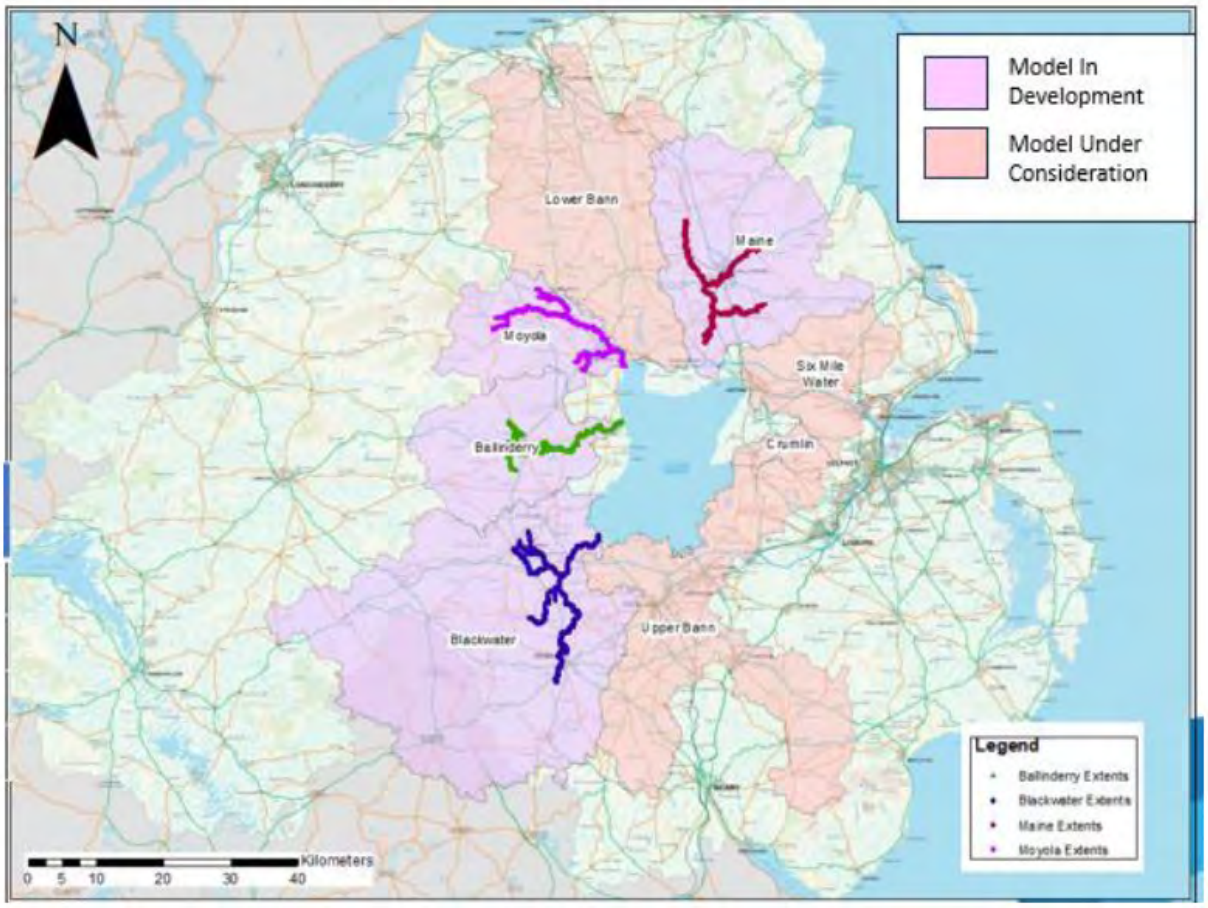
NI Water is systematically undertaking Integrated Environmental Modelling (IEM) across its wastewater catchments to inform its capital works programme. Through simulation, these models also give the ability to assess the impact of all NI Water wastewater discharges in a catchment, as well as diffuse pollutant sources such as agriculture.

In addition to the Lough Neagh Local Management Area (LMA), surrounding the periphery of the Lough, there are a further six LMAs that indirectly discharge to Lough Neagh. The results of IEMs will inform our understanding of the nutrient loading flowing to Lough Neagh through these river systems.

Funding to model five of these catchments (as shown in the diagram below) is provided within PC21.

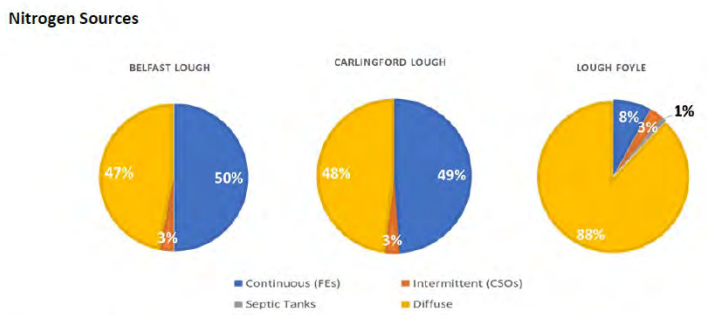
- Ballinderry, Moyola and Maine which is due to complete by Autumn this year.
- Blackwater which is currently programmed for Spring 2025.
- Upper Bann catchment will commence later this year with a completion date of 2027.

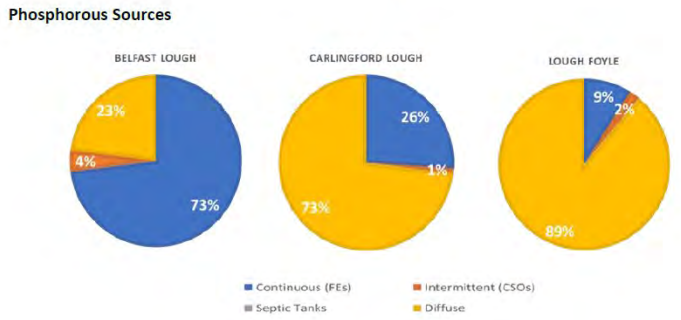
The date to undertake modelling of Six Mile Water is yet to be determined.



Nutrient Sources

Studies from models have been undertaken by NI Water in collaboration with the Agri-Food and BioSciences Institute (AFBI) for other loughs: Carlingford Lough, Lough Foyle and Belfast Lough. The results are shown in the pie charts below and may give an indication of what is likely to be occurring in Lough Neagh.





The orange segments show diffuse sources that is not attributed to the public wastewater system and is mainly attributed to agriculture.

The blue segments, labelled Continuous FE, show the proportion of nutrient loading attributed to final treat effluent from NI Water treatment works. We can see that this varies in scale across different catchments with treatment works making a large contribution in Belfast Lough yet a much smaller contribution in Lough Foyle.

The red segments, labelled Intermittent (CSOs), show the contribution from storm overflows. We can see that this is consistently in the range of 1-4%. Yet most importantly, there is a clear pattern showing that storm overflows contribute far less to nutrient loading than final treated effluent from treatment works.

For your wider information, please also refer to:

- Storm Overflows explained
- Northern Ireland's Wastewater System
- Event Duration Monitors (EDMs)
- Storm Overflow performance

7. *Septic tank count and map of ST locations in Lough Neagh catchment*

NI Water-owned Septic Tanks

Council Area	WwTW Installation Type	Number
Antrim and Newtownabbey	Septic Tank	32
Armagh Banbridge and Craigavon	Septic Tank	39
Belfast	Septic Tank	4
Causeway Coast and Glens	Septic Tank	66
Derry and Strabane	Septic Tank	33
Fermanagh and Omagh	Septic Tank	11
Lisburn and Castlereagh	Septic Tank	10
Mid and East Antrim	Septic Tank	11
Mid Ulster	Septic Tank	64

Newry Mourne and Down	Septic Tank	40
North Down and Ards	Septic Tank	49
Total		359

Private Septic Tanks

NI Water offers a discretionary annual de-sludge for such tanks only and the Company would recommend you source a reliable count for and locations of same from the NIEA which regulates private septic tanks.
https://www.daera-ni.gov.uk/contacts/northern-ireland-environment-agency-contact

The only details NI Water retains regarding private septic tanks are those where a septic tank de-sludge/empty has been requested. To assist you in your studies, we are providing same, but this is not a definitive list and there may be properties indicated with private septic tanks situated amongst properties that are connected to the public sewage system.

Council Area Name	No. of Properties
Antrim and Newtownabbey	122
Ards and North Down	80
Armagh City, Banbridge and Craigavon	139
Belfast	118
Causeway Coast and Glens	493
Derry City and Strabane	106
Fermanagh and Omagh	706
Lisburn and Castlereagh	11
Mid and East Antrim	820
Mid Ulster	424
Newry Mourne and Down	137
Grand Total	3,156