REFERENCE

2425091

RELEASE DATE

July 2024

SUBJECT

Wastewater Treatment Works

REQUESTS & RESPONSES

1. *Can NI Water detail how many water and wastewater treatment works there are across Northern Ireland?*
    a. There are 1,022 Wastewater treatment facilities across Northern Ireland (In service, NI Water-owned or under Public Private Partnership (PPP)).
    b. There are 24 Water Treatment Works (WTWs) throughout Northern Ireland (belonging to NI Water and NI Water Alpha) that are currently in service.
2. *How many are in each council area?*

    Wastewater Treatment Works

Council Area Name	Works Installation Type	No. of WwTWs
Antrim and Newtownabbey	Septic Tank	32
Antrim and Newtownabbey	WwTW	12
Armagh Banbridge and Craigavon	Septic Tank	39
Armagh Banbridge and Craigavon	WwTW	93
Belfast	Septic Tank	4
Belfast	WwTW	4
Causeway Coast and Glens	Septic Tank	66
Causeway Coast and Glens	WwTW	128
Derry and Strabane	WwTW	56
Derry and Strabane	Septic Tank	33
Fermanagh and Omagh	Septic Tank	11
Fermanagh and Omagh	WwTW	89
Fermanagh and Omagh	Reed Bed	2

Lisburn and Castlereagh	WwTW	26
Lisburn and Castlereagh	Reed Bed	1
Lisburn and Castlereagh	Septic Tank	10
Mid and East Antrim	Septic Tank	11
Mid and East Antrim	WwTW	39
Mid Ulster	Septic Tank	64
Mid Ulster	WwTW	106
Newry Mourne and Down	WwTW	84
Newry Mourne and Down	Septic Tank	40
North Down and Ards	Septic Tank	49
North Down and Ards	WwTW	23
Total		1,022

Water Treatment Works

Council Area Name	No. of WTWs
Antrim and Newtownabbey	1
Armagh Banbridge and Craigavon	3
Causeway Coast and Glens	4
Derry and Strabane	2
Fermanagh and Omagh	5
Mid and East Antrim	3
Mid Ulster	3
Newry Mourne and Down	3
Grand Total	24

3. *Can you outline, which water and wastewater treatment works are in need of the most significant upgrades and why?*

   NI Water Investment plans follow the NI Executive approved DfI Social & Environmental Guidance. Prioritised, evidence-based investment is agreed across Northern Ireland with all of NI Water's regulators and provides maximum

value to consumers and is rigorously tested by the Independent Utility Regulator as demonstrated by their Final Determination. Planned Price Control investments may be subject to available funding, statutory approvals, and land purchase, and these must be in place for a project to proceed to construction.

NI Water's investment programmes are planned within 6-year time spans, known as Price Control periods. The current price control period is PC21 (2021/22 – 2026/27) and the investment programme for this period has already been agreed with the NI Utility Regulator within the Final Determination signed off in July 2021. NI Water has commenced planning for our Business Plan for the next Price Control Period PC27 (2027/28 – 2032/33).

An outline submission will be issued to the Utility Regulator in June 2025 (TBC), with final submission made in January 2026 (TBC). This next six-year investment programme will also be informed by the DfI Social & Environmental Guidance and assessed for value for money by the Independent Utility Regulator. Therefore, any information provided on planned investments relate to the current PC21 period. NI Water is not in a position at this time to provide an investment profile for the next Price Control period (PC27).

<u>Water</u>

Within our PC21 Business Plan enhancements at 20 Water Treatment works were identified to address risks for regulatory compliance failure for water quality and to ensure water produced is compliant with the Company's own standards for water quality. Appraisals were undertaken to gather evidence to identify and assess the needs arising for the identified WTW.

This process included assessment of the selected works against:

- NI Water Drinking Water Safety Plans (DWSP).
- Historic water quality results.
- The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009.
- NI Water Environmental Management System (EMS)

The list of proposed upgrades to WTWs during PC21 is contained in the response to Q4.

Wastewater

The PC21 Wastewater Treatment Works (WwTW) Prioritisation Methodology was used to produce a prioritised listing of WwTW with metrics based on Compliance, Customer, Environment, Operations and Northern Ireland Environment Agency (NIEA) metrics which was agreed with NIEA.

The upgrades of WwTW are prioritised to meet discharge consent standards set by NIEA and/or to release development constraints.

WwTW upgrades may be prioritised due to one or more of the criteria below:

- WwTW is operating at or close to capacity.
- WwTW is predicted to reach capacity during the Price Control Period.
- WwTW is not in compliance with the Water Order Consent.
- Excessive maintenance/operator intervention required.
- WwTW upgrade required to meet compliance with a revised Water Order Consent.

Living with Water Programme – Belfast

In response to a number of serious flooding events and concerns regarding deteriorating water quality in Belfast Lough, the NI Executive approved the creation of the Living with Water Programme (LWWP) in July 2014 led by the Department for Infrastructure (DfI). The aim of LWWP is to develop a Strategic Drainage Infrastructure Plan (SDIP) for the six WwTWs which input to Inner Belfast Lough and their associated drainage catchments.

The six WwTWs and associated catchment covered by the LWWP are: Belfast, Kinnegar, Whitehouse, Greenisland, Carrickfergus, Seahill.

Delivery of the investments in these areas are subject to the availability of funding. NI Water is working closely with the DfI on the programming and

funding the delivery of the capital works programme during the remainder of the PC21 Price Control Period.

The list of proposed upgrades to WwTWs during PC21 is contained in the response to Q4.

4. *How much needs to be spent in each city/area?*

Planned investment in Water Treatment works during PC21

Project name	£m
Clay Lake Treatability Improvements	0.9
Seagahan Treatability Improvements	1.1
Altnahinch Treatability Improvements	1.0
Dungonnell Treatability Improvements	0.4
Caugh Hill Treatability Improvements	14.5
Ballinrees WTW, MCPA treatment investigations	5.4
Carmoney Treatability Improvements	1.1
Derg Treatability Improvements	4.3
Derg WTW MCPA PEO Undertakings	5.5
Loughmacrory Treatability Improvements	0.6
Upgrade to Killyhevlin	0.5
Belleek Treatability Improvements	0.2
Glenhordial Treatability Improvements	0.3
Lough Bradan Treatability Improvements	0.3
Killyhevlin DWW Tank	0.5
Glenhordial WTW Sludge Improvements	0.2
Dorisland Wtw treatability recommended improvements.	0.8

Lough Fea Treatability Improvements	0.8
Fofanny Treatability Improvements	0.2
Carran Hill Treatability Improvements	0.1
Drumaroad Treatability Improvements	0.6
	39.4

Planned investment in Wastewater Treatment works during PC21

Project name	£m
Killinchy WwTW	7.7
Loughries WwTW	0.8
Kinnegar WwTW *	102.1
Ballywalter WwTW Interim Solution	0.0
Ards North, Carrowdore, Ballywalter, Ballyhaskin	15.2
Ballygowan WwTW	5.4
Whitehouse WwTW *	18.0
Dromore WwTW	13.7
Robinsonstown WwTW	3.3
Waringstown WwTW	1.3
Markethill WwTW	5.3
Belfast WwTW - Inlet sewer Diversion *	1.2
Belfast WwTW - Bretland House *	1.1
Belfast WwTW - Phase 1 upgrade *	160.5
Belfast WwTW - Odour Control *	7.2
Belfast WwTW - New Buildings Scheme *	3.0
Belfast WwTW Appraisal Study *	1.7

LWWP - Belfast WwTW phase 0 interim upgrade *	7.9
Kilrea WwTW	5.5
Aghanloo WwTW	1.7
Ballykelly WwTW	0.9
Culmore WwTW- Cat 5	5.2
Mountfield PC21	2.6
Tamlaght WwTW	2.4
Lough Macrory WwTW	1.6
Cat 5- Lisnaskea 2 WwTW	1.7
Monea WwTW	1.4
Dromara WwTW	0.8
Grange (Taylorstown) WwTW	3.6
Larne WwTW	25.0
Greenisland WwTW *	37.2
Carrickfergus WwTW *	18.6
Carrick DA - Solution 4 - WwTW Boundary CSO Storage Tank *	4.8
Carrick DA - Solution 4 - WwTW Storm Tanks Overflow *	3.6
Moy WwTW	6.9
Dungannon WwTW	35.4
Killygonlan WwTW	4.6
Pomeroy WwTW	2.7
Ballygawley WwTW	2.9
Derrycrin WwTW	2.4

Ballyronan WwTW	3.3
Stewartstown WwTW	4.1
Clogher WWTW	1.2
Cabragh WwTW	2.1
Bellaghy WwTW	4.2
Drumaness WwTW	3.6
Warrenpoint WwTW Phase 2	7.8
Meigh WwTW	1.7
Newry WwTW	31.9
Newcastle WwTW	2.2
Annsborough WwTW	8.8
Downpatrick WwTW	10.9
Kilkeel WwTW	3.3
Ardglass WwTW-Cat 5	0.0
Dundrum Catchment Remediation	0.8
Dundrum WWTW	1.0
	613.8

*Denotes projects included in the Living with Water Programme

The assessment of the total cost to upgrade NI Water WwTWs is ongoing, but NI Water's very early, high-level estimate for upgrading works to meet the UWWTR standards is approximately £2.5 billion.

N.B. These figures are uncertain pending detailed investigations and NI Water have assumed a 1% average inflation from 2027.

This quantum of investment is necessary to bring our wastewater system to the standard it should be at, then to enhance it further to meet tighter environment standards, provide capacity for further connections, address greenhouse gas emissions and ensure resilience to climate change.

5. *Are there any areas where new water treatment works need to be built?*
   NI Water is upgrading our existing water assets and building resilience through connectivity. There are no shortages of WTWs, but greater connectivity between supply zones and additional Service Reservoir and Clear Water Tank storage is required, as laid out in the NI Water Resource & Supply Resilience Plan. NI Water has accessed and brought back into supply previously utilised ground water sources, such as the Moneymore Borehole to improve resilience in supply during periods of high demand and is investigating further options for other ground water sources. Such sources will require associated water treatment facilities to be available on the site.

   NI Water continues to maintain and upgrade its existing WwTWs asset base as detailed in Q4. There is one instance of the construction of a new £18.7m WwTW at Ards North by NI Water which was completed in 2023. This new treatment works allowed the rationalisation of the Wastewater treatment facilities within the Ballywhisken, Carrowdore and Ballywalter catchments, and provided capacity to accommodate future development within these areas.

6. *If so, can you explain why and what impact it is having that there is none?*
   See response to Q5 in relation to WTWs.

   In relation to Wastewater, there are many towns and cities throughout Northern Ireland where there are currently capacity constraints. These constraints may be associated with the WwTWs or the Wastewater network. In these areas, it may not be possible for a developer to connect to the wastewater infrastructure as to do so would increase the risk of out of sewer flooding, which may impact homes and businesses and increase the risk of environmental pollution and possible prosecution.

In such circumstances, through the NI Water Wastewater Impact Assessment process, a developer may be advised by NI Water that their only feasible option is to construct a WwTW to serve the site. However, the construction of a 'private' WwTW would be developer led and funded and would only be possible if NIEA agrees to give a consent to discharge.

In circumstances where NIEA gives a consent to discharge, provided the developer enters an Article 161 agreement with NI Water and constructs the WwTW to NI Water's standard specification, it may then be offered for adoption by NI Water.

While this route may allow development in some areas to proceed, it is not ideal from an NI Water perspective, as it will result in many small WwTWs dispersed throughout NI which will increase maintenance and energy costs.

7. *Are there any areas which are not connected into the sewage network and water treatment works? If so, what are these locations?*

   Wastewater

   Private Septic Tanks provide an indication of properties not connected to the public sewage system. NI Water's Customer Services records properties where a septic tank de-sludge/empty has been requested. It 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. Therefore, it does not provide a complete account of areas not connected to the public sewage system. In order to provide 'areas' not connected, Annex A lists the number of private septic per Postcode sector. Postcode Sector comprises the 'Outward' postal code (first 3 or 4 digits) and the first digit of the 'Inward Code'. Note that in some cases only the 'Outward' code is available. NI Water has deliberately not provided the full postcode, as to do so would be to narrow the area to several properties at street level and as such deemed personal customer information.

   Water

   Properties outside a District Metered Area (DMA) provide an indication of which

properties are not connected to the public water supply. However, this is not a definitive list as some properties within a DMA may also not be connected to a Water Treatment Works. This analysis also relies on the accuracy of the datasets used and is indicative only at the time of asking.

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	3156

8. *What happens if an area is not connected to waste water treatment works?*

Where NI Water has no WwTW and associated infrastructure, the developer can look to construct an onsite treatment works. For single houses, this would be classified as a septic tank and would remain the responsibility of the house owner. For multi-unit developments, the developer can apply to NI Water to have the on-site treatment adopted provided they agree to construct it to the relevant standard.

9. *In what areas is poor water infrastructure having the greatest impact on house building?*

   At this time, there are no areas of the NI Water potable water network that is impacting developments significantly. In some cases, the level of development being proposed may require the developer to work with NI Water to implement schemes to reinforce the network, but these are limited.

10. *Can you put any figures to that in terms of projects where objections had to be put forward because the water infrastructure could not cope with housing units being built?*

    Wastewater

    In 2023, NI Water responded to 1,662 planning consultations for multi-unit domestic applications and, in the case of 327, we advised the planners that they should refuse the application unless the developer engaged with us to deal with concerns we had around their application. In 290 cases, we called out a lack of capacity in the downstream foul sewer network. In the case of 68, we called out a lack of WwTW capacity. (Our reporting does not allow us to identify the overlaps that have both WwTW and sewer issues).

    We also advised, in the case of 130 single unit applications, that there were sewer capacity issues and, on 32 applications, a lack of WwTW capacity.

    See also https://www.niwater.com/capacity-information/.

11. *What happens if hundreds of houses are built in an area where the wastewater infrastructure is already under pressure?*

    Wastewater

    Where a development is connected to a wastewater sewer network that is constrained, the impact may be felt in a number of ways. The impact of any connection will depend on the size of the development and the nature of the catchment to which it connects. The nature and severity of the issue within the downstream asset will also factor into the impact. Where NI Water has current assets that are causing environmental disamenity, such as spills to the environment, the frequency of spills, the volume of spills and the duration would

be increased. In some areas, it could introduce new environmental issues, such as new out of sewer flooding. It could also negatively impact on service to existing customers who may have suffered as a result of out of sewer flooding.

12. *Can and are housing projects approved even if NI Water makes strong objections?*

    Wastewater

    NI Water provides robust advice to the Council planners during the consultation stage where we have issues with a particular development. It then rests with the Council to make a planning decision based on this response. We encourage developers to engage with us through the three-step pre-development process before applying for planning, but this is not always the case. Our advice to Council planners is that developments should not receive planning approval until it has been fully determined by the developer working with NI Water that the development will not exacerbate known capacity constraints or cause new constraints. Ultimately, the decision to approve or refuse planning applications for any proposed development rests with the relevant Council planning department. It would be up the planning departments to make a decision and decide if they wish to set aside the advice provided by NI Water.