# Review of the National Inspection Plan for Domestic Waste Water Treatment Systems 2018-2021

**Environmental Protection Agency**

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# Contents

# Summary

The national inspection plan for domestic waste water treatment systems is prepared by the Environmental Protection Agency and implemented by water service authorities in accordance with the Water Services Act 2007 (as amended). This document presents a review of the 2018-2021 national inspection plan.

The review included focus group meetings with key stakeholders and analysis of information on the operation of the 2018-2021 plan. The review examined inspection system supports, inspection numbers, risk-based allocation of inspections, inspection findings to date, enforcement of advisory notices and public engagement activities. It makes eleven recommendations to inform the preparation of the next plan for 2022-2026.

This review document and the draft 2022-2026 national inspection plan will be published in parallel for full public consultation. The Environmental Protection Agency will take the comments received into account and finalise the 2022-2026 national inspection plan prior to the end of 2021.

# 1. Introduction

Homeowners are required under the Water Services Act 2007 (as amended) to ensure their Domestic Waste Water Treatment Systems (DWWTS) are not a risk to human health or the environment and comply with regulations.

The Environmental Protection Agency (EPA) is required to produce a national inspection plan for the inspection of DWWTS. The EPA must review the plan at least every five years and make revisions if necessary. There have been three plans since inspections commenced: 2013-2014, 2015-2017 and 2018-2021. The plans and annual implementation reports are available on the EPA website.

The national inspection plan is implemented by water services authorities. The EPA has a supervisory role over the plan and provides support to water service authorities including hosting the inspection database, provision of guidance and annual reporting. Other stakeholders such as the Department of Housing, Local Government and Heritage and the Health Service Executive have been involved in developing engagement materials.

This document presents a review of the *National Inspection Plan for Domestic Waste Water Treatment Systems 2018-2021* and recommendations to inform the next plan for 2022-2026.

# 2. Scope

The national inspection plan covers inspections of DWWTS by water service authorities and public engagement activities to promote broader compliance. The review process covers both activities.

There are several other regulatory interventions related to DWWTS including: grant schemes; catchment assessments under the national river basin management plan; the Code of Practice for Domestic Waste Water Treatment Systems; planning control; building control; construction product control and related standards (Appendix: Figure 1). While the national inspection plan has regard to those interventions, they are outside its scope and the scope of this review.

# 3. Review process

The review process included qualitative and quantitative assessments of available data sources. The EPA conducted focus group meetings with key external stakeholders during February-July 2021 to provide an overview of the review process and seek their initial views. These organisations were the: Health Service Executive; Water Forum; Irish Environmental Network; Network for Ireland's Environmental Compliance and Enforcement (Steering Committee and Septic Tank Inspectors Network); Department of Housing, Local Government and Heritage; Local Authority Waters Programme and County and City Management Association. The feedback received was considered and incorporated in preparing this review document. The EPA gathered and analysed data from the 2018-2021 national inspection plan.

This outcome of the NIP review process is presented in sections 4 “Inspections” and 5 “Engagement” and includes eleven recommendations to inform the preparation of the 2022-2026 plan. The EPA prepared a draft 2022-2026 national inspection plan incorporating the recommendations.

This review document and the draft 2022-2026 national inspection plan will be published in parallel for full public consultation. The EPA will take the comments received into account and finalise the 2022-2026 national inspection plan prior to the end of 2021.

The public consultation will run for six weeks from 21/09/2021 to 02/11/2021. Please follow the instructions online if you wish to make a submission.

# 4. Review of inspections

## 4.1 Inspection system supports

Consistency of inspections and enforcement is extremely important to the integrity of the domestic waste water inspection system. The supports in place for DWWTS inspections include specialised training, EPA appointment of inspectors, DWWTS database and the Network for Ireland's Environmental Compliance and Enforcement (NIECE).

The Local Authority Services National Training Group run a two-day course which must be completed by prospective DWWTS inspectors. 268 water service authority staff were trained from 2013-2019. There was no training in 2020 due to the Covid pandemic. Training recommenced online in March 2021. Inspectors are provided with *Guidance Manual for the Inspection of Domestic Waste Water Treatment Systems*.

Water service authority staff are appointed as DWWTS inspectors by the EPA once qualifying criteria, including training, are met. Appointments are for three years and can be renewed. The EPA has appointed 189 inspectors since 2013. There are 127 inspectors currently appointed, varying from 1-10 across counties (Appendix: Figure 2). Inspectors also have other duties within the water service authorities.

The Domestic Waste Water Application is the database used by DWWTS inspectors to prepare inspection reports, advisory notices and for tracking and reporting purposes. The EPA host and maintains this database.

The EPA coordinates the Septic Tank Inspectors Network as part of the NIECE. This is a platform for DWWTS inspectors to meet, exchange information and develop guidance. The following seminars were held during the 2018-2021 national inspection plan and there will be another later in 2021 to communicate the 2022-2026 plan:

- Portlaoise on 23/05/2019: Enforcement and engagement.
- Online on 24/11/2020: Impact of the Covid pandemic on inspections.
- Online on 11/02/2021: National inspection plan review process.
- Online on 21/04/2021: Consistency on certain aspects of inspections.

The following are available to inspectors through the Septic Tank Inspectors Network:

- templates for inspection reports, advisory notices and correspondence;
- enforcement flowcharts setting out actions and timelines; and
- guidance on determining risk and kit for inspections.

While consistency in inspections is generally good, the workshop on 21/04/2021 highlighted some differences in the way inspections were conducted which are being addressed

through additional guidance. More significantly, the EPA has increasingly highlighted inconsistent enforcement of advisory notices as an issue (see below).

**Recommendation 1:** The 2022-2026 national inspection plan should reinforce the requirement for inspection and enforcement to be completed in line with the Local Authority Services National Training Group training and associated manual and the additional guidance provided through the Septic Tank Inspectors Network.

## 4.2 Minimum inspections required

The 2018-2021 national inspection plan requires a minimum of 1,000 inspections per annum, as was the case in previous iterations. This is a minimum requirement with a recommendation for additional inspections by water service authorities if there is evidence at a local level that DWWTS are causing an issue in an area. The figure does not include inspections in response to complaints, verification inspections to check DWWTS have been fixed or work carried out by the Local Authority Waters Programme (see below).

The figure of 1,000 was considered appropriate relative to the risk from DWWTS on a national scale[1] and the number of inspections carried out by authorities in relation to other risks to water[2]. Domestic waste water was identified as a significant pressure in 166 (11%) of the at-risk water bodies under the second cycle of the River Basin Management Plan 2018-2021. This has increased in the third cycle to 188 however, it is similar relatively (12%), because there have been increases in identification of significant pressures overall and across several other categories. It should be noted that 'domestic waste water' also includes communal wastewater treatment systems for housing estates/developments. This has been differentiated in the latest cycle, with DWWTS for single houses a pressure in 159 of the 188 waterbodies. The most significant pressure overall is agriculture, followed by hydromorphology, forestry, urban wastewater and then DWWTS. By comparison, local authorities conduct approximately 3,500 farm inspections per annum.[3] There have also

[1] River Basin Management Plan
[2] Local Authority Environmental Enforcement Performance Framework
[3] Focus on Local Authority Environmental Enforcement - Activity Report 2019

been two significant other interventions in relation to DWWTS since the 2018-2021 plan commenced:

- The Local Authority Waters Programme commenced in 2018. This is a local authority shared service working to implement the national river basin management plan. Their catchment assessment teams carry out scientific assessments in priority areas to identify pressures on water quality. Where DWWTS are identified as a potential pressure, homeowners are contacted and offered grant assistance to remediate their DWWTS.
- The DWWTS grant scheme was changed in 2020. Previously grants were only available to homeowners whose DWWTS failed inspection under the national inspection plan. Grants are now also available to remediate DWWTS identified by the Local Authority Waters Programme and homeowners may apply for a grant on their own initiative if they are in a High-Status Objective Catchment.

Overall, the minimum of 1,000 inspections per annum remains consistent with the relative risk from DWWTS on a national scale, the number of inspections carried out by authorities in relation to other risks to water, and with consideration to the additional measures in place in relation to DWWTS.

Views were expressed during the stakeholder consultation that the minimum of 1,000 inspections per annum is too small relative to the number of DWWTS and risks posed by DWWTS in Ireland. The view was also expressed during the stakeholder consultation that increased inspections would require additional resources for water service authorities.

Increased numbers of inspections would lead to improved identification and remediation of faulty DWWTS. The consideration of resourcing of the national inspection plan in the broader context of national priorities and resources falls within the remit of the Government and is highlighted in the programme for government which states:

> *We will review and work to improve the inspection regime for the 500,000 domestic wastewater systems and incentivise upgrading works.*

**Recommendation 2:** The 2022-2026 national inspection plan should maintain the minimum requirement of 1,000 inspections per annum, with additional inspections by water service authorities if there is evidence at a local level that DWWTS are causing problems in an area.

**Recommendation 3:** It is recommended that Government review the resourcing of the national inspection plan in the broader context of national priorities.

## 4.3 Risk methodology

The core of the national inspection plan is a risk-based methodology which prioritises inspections in areas of higher relative risk. The initial methodology was developed by the EPA in conjunction with the Geological Survey of Ireland and other experts in 2013.[4] This informed the first national inspection plan in 2013-2014, with minor adjustments for 2015-2017. The risk-based methodology was updated for the 2018-2021 plan to align with the 2018-2021 national river basin management plan.

There are several core principles underlying the risk-based methodology which remain valid:

- all areas of the country are covered and are potentially subject to inspection;
- inspections are prioritised into areas of higher relative risk;
- risks to human health (e.g. contamination of household wells or direct exposure to ponded effluent) and the environment (surface and groundwater quality) are considered; and
- the methodology is based on the source-pathway-receptor model.

**Recommendation 4:** The 2022-2026 national inspection plan should maintain the core principles underlying the risk-based methodology.

The risk zones, risk factors, weightings applied and distribution of inspections under the 2018-2021 plan are detailed in the Appendix: Table 1. The following arose in reviewing the detail of the methodology:

[4] A Risk-Based Methodology to Assist in the Regulation of Domestic Wastewater Treatment Systems

**Risk to household wells:** Household wells tend to be at significant risk of contamination, much more relative to public supplies and other private water supplies. EPA reports show a high proportion of groundwater monitoring sites (43% in 2017) were positive for *Escherichia coli* indicating the presence of faecal contamination.[5] Household wells are often poorly constructed making them vulnerable to contamination (65% in a 2018 report) [6] and the water is often not treated prior to consumption (72% in the same report). This is borne out in surveys of household well water which have shown 15-58% contamination with coliform bacteria.[7,8]

Household wells are not subject to systematic testing and reporting, so the location of contaminated household wells or problematic areas are not known specifically. Similarly, while DWWTS can be a source of contamination and CSO data indicates that there are about 164,000 DWWTS co-located with household wells, it is difficult to refine the problem further geospatially. There is EPA funded research examining sources of Verotoxigenic *Escherichia coli* and *Cryptosporidium* in groundwater and household wells which may assist once complete.[9,10]

The national inspection plan captures risks to human health, including to household wells, under the heading 'increased groundwater risk potential' and gives increased weighting to it when allocating inspections. However, only approximately 29% of inspections in 2018-2020 were at households with household wells. The failure rate for DWWTS co-located with household wells was 51%.

**Recommendation 5:** The 2022-2026 national inspection plan should increase inspections of DWWTS co-located with household wells.

**Risk to surface waters:** The local authority waters programme conducts catchment assessments (which include identification of problematic DWWTS) in priority areas for

[5] Water Quality in 2017: An Indicators Report
[6] The Impact of On-site Domestic Wastewater Effluent on Rivers and Wells
[7] The Impact of On-site Domestic Wastewater Effluent on Rivers and Wells
[8] Development of a microbial contamination susceptibility model for private domestic groundwater sources
[9] Spatiotemporal Epidemiology of Primary Waterborne Infections - Cryptosporidium and vTEC
[10] Detection of Environmental Sources of Infectious diseases in Groundwater Networks

action under the Water Framework Directive. Householders are informed if their DWWTS is identified as potentially impacting on a waterbody as part of this programme and can avail of a grant to upgrade their DWWTS on a voluntary basis. The question arose during focus group meetings as to what extent inspections under the national inspection plan should align with the work of the Local Authority Waters Programme. One view is that these areas should be avoided given there is or will be a Local Authority Waters Programme intervention there and the other was this is an entirely voluntary scheme and may need to be supported by way of inspections if households don't take measures to upgrade deficient systems. The Local Authority Waters Programme are working in priority areas for action but there are other waterbodies where DWWTS have been identified as a pressure. On balance, it is considered better to prioritise DWWTS inspections in areas where DWWTS have been identified as a pressure (i.e. areas of known risk) whether within or outside priority areas for action. Water service authorities will need to co-ordinate with the Local Authority Waters Programme when planning inspections with flexibility to undertake inspections under the national inspection plan elsewhere if not appropriate in priority areas at a particular time.

**Recommendation 6:** The 2022-2026 national inspection plan should further prioritise areas where DWWTS have been identified as a significant pressure on surface waters. Water service authorities will need to co-ordinate with Local Authority Waters Programme when planning inspections in priority areas for action.

**Density of DWWTS**: Pollutant loads and risks from DWWTS at national and full catchment scale are generally reported to be low. However, they may be more significant at a local level in vulnerable areas where DWWTS occur at high densities.[11,12,13] They may also be in closer proximity to receptors, e.g. household wells. This was raised as an issue by stakeholders during the consultation process.

**Recommendation 7:** The 2022-2026 national inspection plan should include clustering as a risk factor when prioritising areas for inspection.

[11] The impact of on-site wastewater from high density cluster developments in groundwater quality
[12] Modelling the pathways and attenuation of nutrients from domestic wastewater treatment systems at a catchment scale
[13] A Risk-Based Methodology to Assist in the Regulation of Domestic Waste Water Treatment Systems

## 4.4 Completion of inspections

Over 1,000 inspections are conducted per annum under the national inspection plan (Appendix: Figure 3) with some water service authorities completing more than their minimum allocation. Some water service authorities failed to meet their annual allocations in the past, but these were made up with no significant issues in this respect in the first half of the 2018-2021 plan.

2020 inspection numbers (809) were down on previous years (1,160 in 2018; 1,247 in 2019) reflecting the disruption of the Covid-19 pandemic, however, overall progress towards the 4,000 inspections provided for in the 2018-2021 plan remains on track. Some water service authorities did complete their allocation in 2020 but others fell short and some completed none. It was agreed at the workshop on 24/11/2020 that all water service authorities would complete at least 50% of their 2020 allocation, and any deficit would be carried forward to 2021.

## 4.5 Inspection findings

The inspection failure rate is approximately 50% and has stayed relatively static over the years (Appendix: Figure 3). Failures occur in two broad categories:

- de-sludging and maintenance failures; and
- structural defects causing illegal discharges to ditches/streams, leaks, ponding and rainwater ingress.

This is broken out further in the Appendix: Figure 4.

Approximately one quarter of DWWTS are found to have failures that are a risk to human health or the environment. This category includes risk to water, air, soil, plants and animals; noise and odour nuisance; and adverse effects on the countryside and places of special interest. Notwithstanding the broad nature of this category, these failures are of greater significance compared to other reported failures such as maintenance.

The failure rates vary across water service authority areas (Appendix: Figure 5). This may be partly attributable to differing ground conditions with, for example, more failures associated with ponding and illegal discharges to surface waters in water service authority areas with more impermeable soils (Appendix: Figures 6 and 7). However, as pointed out above, there have been some differences in the way inspections were being conducted which could contribute to variations in failure rates. To improve consistency, additional guidance has been provided via the Septic Tank Inspectors Network.

There is also variation in the compliance rate and type of non-compliance based on the age of systems. Older systems fail more frequently than newer systems (57% for DWWTS pre-1980; 46% for DWWTS 1980-2000; 42% for DWWTS post 2000). Older systems have more serious structural issues with maintenance/desludging failures predominating in newer systems

**Recommendation 8:** The 2022-2026 national inspection plan should prioritise inspections of older DWWTS.

## 4.6 Advisory notices

The water service authority issues an advisory notice to the homeowner if their DWWTS fails inspection. The advisory notice specifies the reasons for the failure, what measures need to be taken to fix the failures and timeframe for compliance. The *Guidance Manual for the Inspection of Domestic Waste Water Treatment Systems* provided as part of the inspector training course sets out typical timeframes for remedial works from 1 to 12 months depending on the seriousness of the issue and scale of works required. There is an *Enforcement flow chart* available to Inspectors through the Septic Tank Inspectors Network which sets out the process for follow up on advisory notices by Water Services Authorities through engagement and enforcement to ensure they are complied with. Failure to comply with an advisory notice is a prosecutable offence with a potential fine of up to €5,000.

Since the start of the inspection system in 2013 to the end of 2020, 3,909 advisory notices had been issued by water service authorities with 2,972 (76%) closed (Appendix: Figure 8). There are a considerable number of advisory notices open over long periods, many in

vulnerable situations. For example, there are 429 advisory notices open more than 2.5 years as of June 2021 (i.e. dating from 2018 and earlier) with 151 (35%) of those involving illegal discharges to surface waters. This is something the EPA has highlighted in annual national inspection plan reports to be addressed as priority by water service authorities.

The rates of closure of advisory notices varies across water services authority areas ranging from 46% to 100% closed at the end of 2020. The EPA audited three water service authorities in 2019 and found considerable variation in the enforcement of advisory notices. One water service authority applied the DWWTS enforcement model consistently, kept full records, issued reminders, took prosecutions in the event of prolonged failure to comply and was very successful in closing advisory notices. The other water service authorities were not applying the enforcement model consistently with little or no enforcement of advisory notices in many cases. These have since improved with overall closure rates of about 80%. The EPA is currently engaged with a number of other water services authorities with significant numbers of open advisory notices.

Since the national inspection plan commenced, six water service authorities have taken 34 legal proceedings (i.e. summons issued) for failure by homeowners to comply with advisory notices (31 by three authorities). This is low relative to the number of advisory notices open over long periods and involving serious issues such as illegal discharges to surface waters. In the initial local authority stakeholder meeting, some contributors expressed concerns about taking legal actions based on experience of taking other water pollution related cases, referring to the difficulties such as resource requirements, costs and a perceived low likelihood of a positive outcome. Reports on the 24 (of the 34) legal proceedings that are concluded show that the DWWTS failures were corrected in 20 cases and there were convictions/fines in six cases.

The Septic Tank Inspectors Network meeting on 23/05/2019 included a session on enforcement. Inspectors heard from a water services authority who had taken several legal actions and identified practical measures that can be taken at site inspection stage, when issuing the advisory notice, when engaging with the homeowner and in the event of legal

proceedings. This information is available to the inspectors through the Septic Tank Inspectors Network webpage.

Grant accessibility and sufficiency has been frequently raised in workshops and the initial stakeholder meetings as a barrier to closing advisory notices involving significant works. DWWTS that were in place when the registration scheme commenced must have been registered on or before 01/02/2013 as was required at the time, or they will not qualify for a grant now. The grant scheme is beyond the scope of the national inspection plan and this review. However, in relation to the open advisory notices dating from 2018 and earlier, 65% involve DWWTS that were registered by the due date, another 5% registered after that date and may qualify if they were new builds, with 30% unregistered at the time of inspection.

The point has also been made that the variation in closure of advisory notices may be because the ground conditions are more difficult in some water service authority areas and therefore the failures require more significant corrective works. In this regard, the new 2021 *Code of Practice for Domestic Waste Water Treatment Systems* introduced new options (drip dispersal and low-pressure pipe) for disposal of effluent in low permeability soils.

The EPA has a statutory supervisory role regarding the performance of water service authorities of their functions in relation to DWWTS inspections. The EPA has audited and engaged with certain water service authorities to improve closure of advisory notices and held workshops to support improved performance overall. The EPA can issue a direction if a water service authority fails to perform its functions, however, enforcement of advisory notices is not a stated function in the legislation. The penalty for failure to comply with a direction is prosecution on indictment.

In summary, while the inspection system has resulted in the resolution of 2,972 advisory notices by end 2020, the failure to close a considerable number of advisory notices over long periods is of concern. The level of enforcement varies across water service authorities with significant improvement needed. All water service authorities should follow the enforcement model fully including taking prosecutions where warranted. Some water service authorities need to apply greater resources in this area.

The review process highlighted a range of issues in relation to closure of advisory notices beyond the scope of the national inspection plan. The programme for government also recognised the necessity to *incentivise upgrading works.* Therefore, a broader review by Government would be beneficial to determine if there are additional measures that could be implemented to promote the remediation of DWWTS that fail inspection.

**Recommendation 9:** The 2022-2026 national inspection plan should reinforce the requirement for water service authorities to follow the enforcement model fully including taking prosecutions where warranted.

**Recommendation 10:** It is recommended that Government review additional measures to promote the remediation of DWWTS failing inspection.

## 5. Review of public engagement

The legislation underpinning the national inspection plan defines it as a plan for *'inspection and monitoring'* of DWWTS. However, the national inspection plan includes an engagement strand to ensure homeowners understand the risks to human health and water quality from poorly maintained systems and what to do to ensure that their DWWTS is correctly maintained.

**Water service authorities** reported the following engagement activities during 2018-2020:

- articles and advertisements in newspapers or other publications;
- radio interviews and advertisements;
- social media posts;
- distribution of leaflets and information packs;
- agricultural and science shows;
- maintenance of webpages;
- school visits; and
- stakeholder/public meetings.

The level of activity reported is variable across water service authorities.

Water service authority DWWTS webpages were examined as part of this review exercise. The results again were variable, with some very good examples of comprehensive and accessible information on registration, inspections, desludging, grants, standards and planning applications, compared to some instances where there was very little information.

The Septic Tank Inspectors Network meeting on 23/05/2020 included a session on engagement which raised the following:

- Inspectors often do not have significant time for engagement;
- Water service authorities have environmental awareness officers who may be better placed for this work; and
- 28 stakeholder groups were identified that could be engaged with in relation to DWWTS, 20 methods for engaging, and 10 national groups that should be involved in engagement.

The **EPA** publishes a report on the national inspection plan each year. This is issued with a press release highlighting the key messages for homeowners. The 2017-2018 report focused on risks to people's health and the environment, the 2019 report on the new septic tank grant schemes and the 2020 report on progressing the close of advisory notices. This report receives significant coverage in national and local broadcast, print and electronic media, with EPA staff giving interviews on national and local radio. The report is also publicised on social media. The EPA also promotes good practice through provision of articles to media on request and as part of other work, e.g. public engagement at the ploughing championships.

The EPA website contains DWWT information on inspections, guidance for new builds, maintenance, remediation and grants. A major review was undertaken in 2019-2020 to streamline the information available and bring it in line with Plain English guidelines. The new webpages were launched in June 2021. Information for professionals (e.g. Code of Practice) is also available. About 12% of queries to the EPA each year relate to DWWTS and the related webpages see very high levels of traffic.

The EPA coordinates the Septic Tank Inspectors Network as reported on above. The EPA engages and exchanges information with other national and international bodies in relation

to the national inspection plan. During 2018 to 2020, the EPA engaged with the World Health Organisation (who highlighted Ireland's national inspection plan in its report *Progress on household drinking water, sanitation and hygiene 2000-2017*[14]); EPA advisory committees; Scottish Environmental Protection Agency; Celtic Drainage and Wastewater Working Group; Carlow Institute of Technology; National Federation of Group Water Schemes and Local Authority Services National Training Group.

Several information leaflets have been developed since 2013 in conjunction with government departments, the Health Service Executive and other stakeholders.[15,16,17,18] The EPA continues to provide these to other authorities for engagement as requested, e.g. to Health Service Executive principal environmental health officers, the Local Authorities Waters Programme, Water Service Authorities and the National Federation of Group Water Schemes during the current plan.

The **Local Authority Waters Programme** was created in 2018. This is a local authority shared service working to implement the national river basin management plan. Their catchment assessment teams are carrying out scientific assessments in priority areas to identify pressures. Where DWWTSs are identified as a potential pressure, homeowners are contacted and offered grant assistance to remediate their DWWTS. In addition, the Local Authority Waters Programme undertakes a major programme of community engagement, communications and outreach with 111 local community information meetings in 2019.[19] This work includes engagement in relation to the risks from DWWTS, good practice and the availability of grants for remediation.

The **Department of Housing, Planning and Local Government** revised the DWWTS grant scheme in 2020. Previously grants were only available to homeowners whose DWWTS failed inspection under the national inspection plan. Grants are now also available to remediate

[14] Progress on household drinking water, sanitation and hygiene 2000-2017
[15] Have you completed a septic tank system check?
[16] Wastewater systems for building a house
[17] Wastewater systems when buying or selling a house
[18] How to safely spread sludge from your septic tank
[19] Annual-Report-2019

DWWTS identified by the Local Authority Waters Programme and homeowners may apply for a grant on their own initiative if they are in a High-Status Objective Catchment.[20]

The **National Federation of Group Water Schemes** piloted several community septic tank de-sludging programmes within group water scheme catchment areas from 2015-2018.[21,22] Seventeen group water schemes were involved. The core of the project involved inviting homeowners to partake in a co-ordinated group arrangement for de-sludging of septic tanks and to seek a reduced de-sludging rate from contractors on that basis. The EPA provided funding and technical support. The model used involved:

- Catchment mapping to identify households within the zone of contribution;
- Engagement with and assistance from group water scheme management and staff known to homeowners;
- Engagement with homeowners. The pilot included a significant element of door to door engagement and surveys. The recommended model refers to this being done through correspondence and at annual general meetings;
- Contact with contractors to seek expressions of interest and quotes; and
- Awareness raising through surveys, provision of leaflets and school visits.

It was not fully reported/known how many septic tanks were ultimately de-sludged but the data available indicates approximately 25%, with an average de-sludging cost of €170 per septic tank. The results of the surveys found that on average 69% of homeowners 'knew they had a legal obligation to properly maintain their DWWTS' and 32% 'knew where to source information'.

The project produced two reports as referenced above and provided a model and supporting material for future community desludging initiatives.[23,24]

[20] Department of Housing, Planning and Local Government
[21] A review and evaluation of the Louth OSWTS pilot project
[22] GWS-led community Domestic Wastewater Treatment Systems Education and Desludging Initiative
[23] Step-by-Step guide to implementation of the OSWTS initiative within the community
[24] Sample of preliminary introductory letter sent to all households

**Research** The EPA research programme 2014-2020 included a project which examined DWWTS engagement.[25] The project examined ways to deliver risk-based messages effectively to improve knowledge and promote behavioural change. This set out the aims, objectives and guiding principles for an effective engagement strategy:

- use visual mechanisms and targeted messages to inform risk perception;
- provide information on how DWWTS work, maintenance requirements, how to properly detect signs of malfunctioning and recommended steps;
- engage at the local and national levels, across media spectrums, over a sustained period of time;
- communication should be positive yet emphasise family health implications;
- ensure that the National Inspection Plan is highly visible by reporting regularly;
- ensure consistency of information on the financial costs;
- be aware of factors that influence public trust; and
- engage and work collaboratively with trusted organisations.

Research in 2013-2014 found that the national inspection plan risk communication strategy failed to engender a significant change in behaviour among DWWTS users in Ireland.[26] This was, however, at the very early stages of the national inspection plan. The study suggested:

- that organisations communicate information with a variety of audience profiles in mind and acknowledge the value of behavioural and cognitive theories in tailoring messages;
- the clarity and accessibility of technical information is an important further factor;
- demographically focused engagement approaches are recommended;
- implementation of more discursive, face-to-face communication mechanisms; and
- a communication campaign must be theoretically informed incorporating message framing, risk perception theory, and message tailoring.

[25] Relay Risk Project: Examining the communication of environmental risk through a case study of domestic wastewater treatment systems in the republic of Ireland
[26] Efficacy of a National Hydrological Risk Communication Strategy: Domestic Wastewater Treatment Systems in the Republic of Ireland

An EPA funded study on radon public information campaigns in Ireland and internationally[27] is also informative on environmental public engagement generally, emphasising the limits of what can be achieved by mass-media community information programmes. Remediation rates were reported to be relatively low even when homeowners were informed that their homes had high radon levels. This research again suggested that message segmentation may prove more effective than an approach that considers the target audience as a singular population.

**Conclusion**

The engagement activities in relation to DWWTS reported above reflect the guiding principles and recommendations from the research by:

- engaging at national and local level using a variety of media and methods;
- emphasis on the health implications and positive messages about what can be done and the assistance available;
- providing clear and simple information tailored to homeowners explaining how DWWTS work, the risks, critical signs of malfunction and what homeowners can do;
- collaboration between competent bodies and organisations; and
- regularly reporting and engaging in relation to the national inspection plan.

There are two key areas that should be built on further in the 2022-2026 national inspection plan.

Engagement is not specifically required under the legislation. Inspectors have reported a lack of resources for engagement and the level of reported activity varies significantly across waters service authorities. Previous national inspection plans have not set specific requirements for water service authority engagement activities. This could be improved by specifying requirements, e.g. pro-rata per head of population for the engagement activities reported above such as articles in newspapers; radio advertisements; social media posts;

[27] Review of Public Information Programmes to Enhance Home Radon Screening Uptake and Home Remediation

distribution of leaflets; school visits; and stakeholder/public meetings. This could be supported by development of standardised material through the Septic Tank Inspectors Network. A standardised template webpage would also be beneficial.

Secondly, consideration should be given to a targeted engagement initiative highlighting the risks to human health and the environment. This should follow the guiding principles outlined in research. An example would be an initiative targeted at the homeowners with both a DWWTS and household well or close to rivers impacted by DWWTS. This could inform them of the risks, what they can do if they are concerned such as simple checks on their DWWTS, well testing and the grant schemes.

However, while engagement activities should continue and be built on, research indicates that expectations should be realistic about what is achievable through engagement.

**Recommendation 11:** The 2022-2026 national inspection plan should build on the current engagement activities by:

- setting specific requirements and providing more supports for water service authority engagement activities; and
- initiating a targeted engagement initiative highlighting the risks to human health and the environment.

## 6. Conclusion

This document presents a review of the *National Inspection Plan for Domestic Waste Water Treatment Systems 2018-2021*. It makes eleven recommendations to inform the 2022-2026 plan.

# Appendix: Figures & Tables

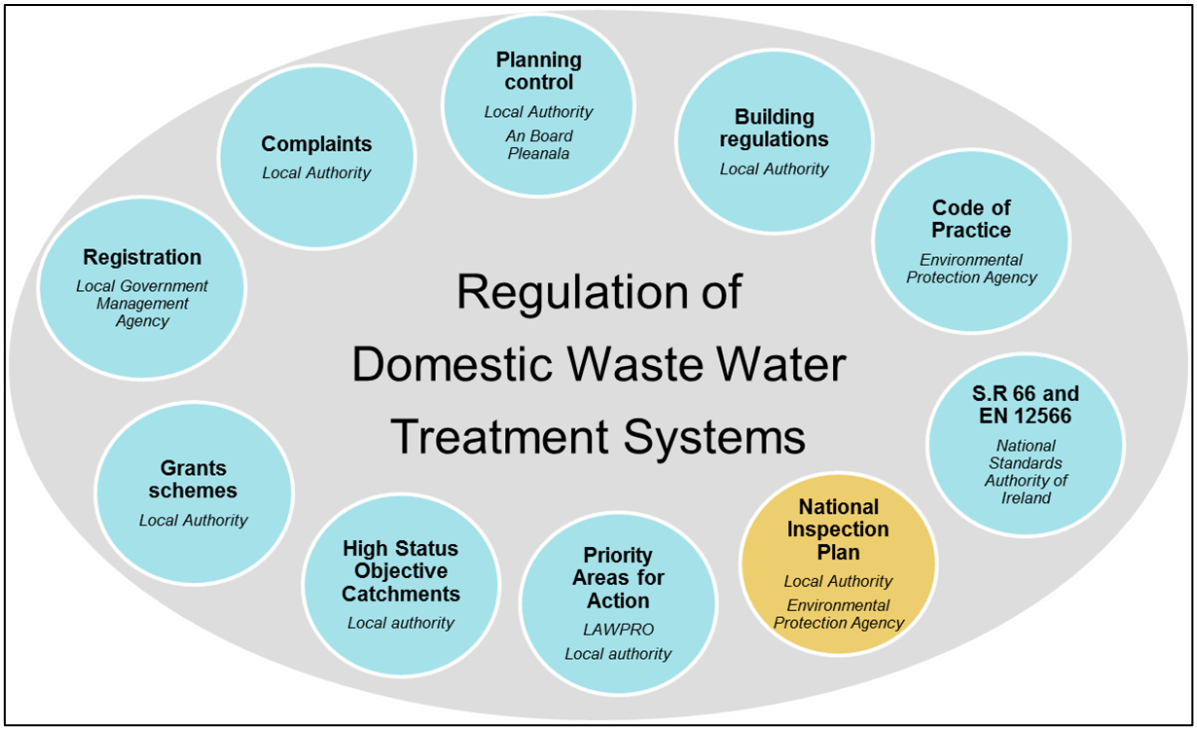


**Figure 1** Regulation of DWWTS.

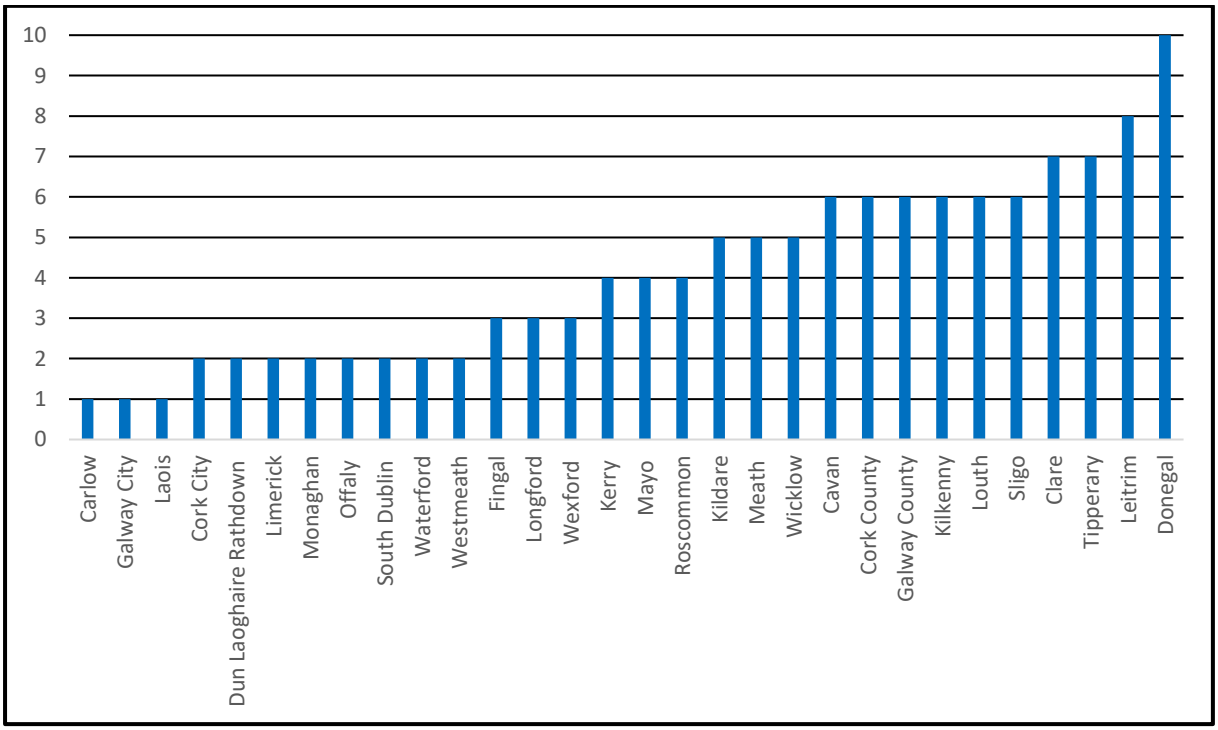


**Figure 2** Number of inspectors by water services authority.

**Table 1**: Allocation of inspections into risk zones in the National Inspection Plan 2018-2021.

| Risk zone | At risk water body [1] | Area for action [2] | DWWTS significant pressure | Increased groundwater risk potential | Weighting applied to risk zone | National number of inspection per risk zone |
|---|---|---|---|---|---|---|
| 1A | ✓ | ✓ | ✓ | | 100 | 59 |
| 1B | ✓ | ✓ | ✓ | ✓ | 200 | 243 |
| 2A | ✓ | ✓ | | | 25 | 142 |
| 2B | ✓ | ✓ | | ✓ | 50 | 360 |
| 3A | ✓ | | ✓ | | 20 | 8 |
| 3B | ✓ | | ✓ | ✓ | 40 | 22 |
| 4A | ✓ | | | | 10 | 30 |
| 4B | ✓ | | | ✓ | 20 | 77 |
| 5A | | | | | 1 | 16 |
| 5b | | | | ✓ | 2 | 43 |
| Total no. of inspections | | | | | | 1,000 |

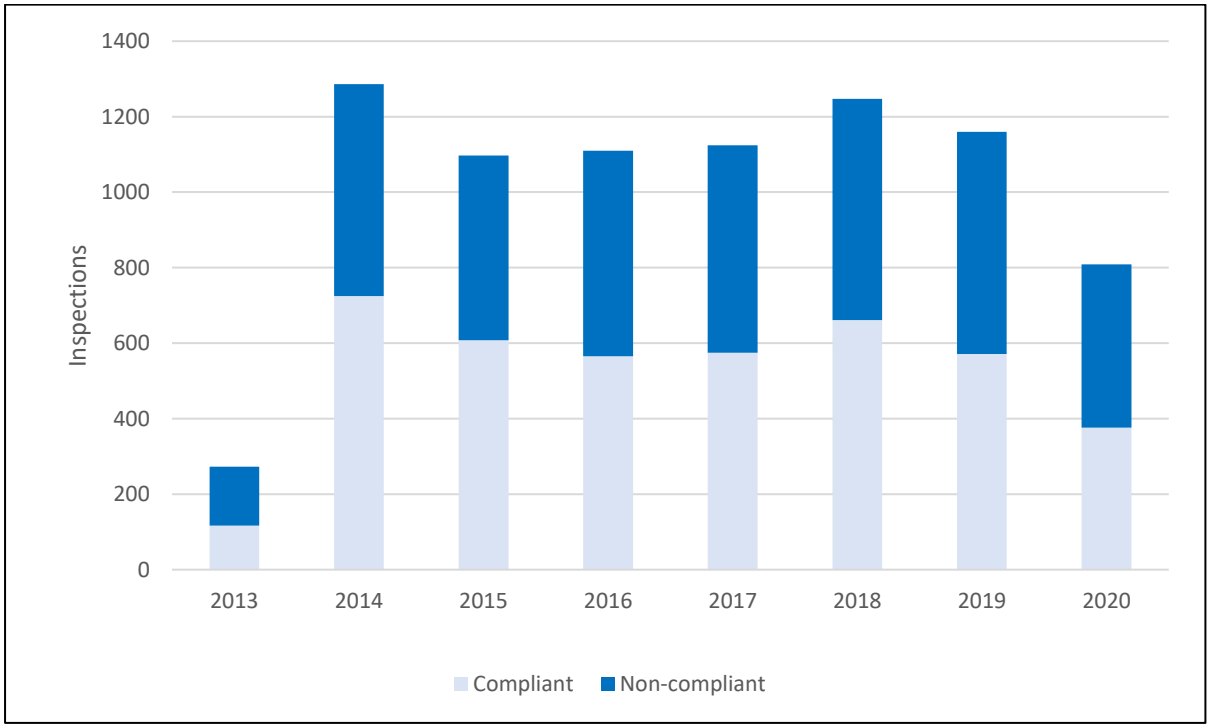


**Figure 3** Inspection numbers and compliance status 2013-2020

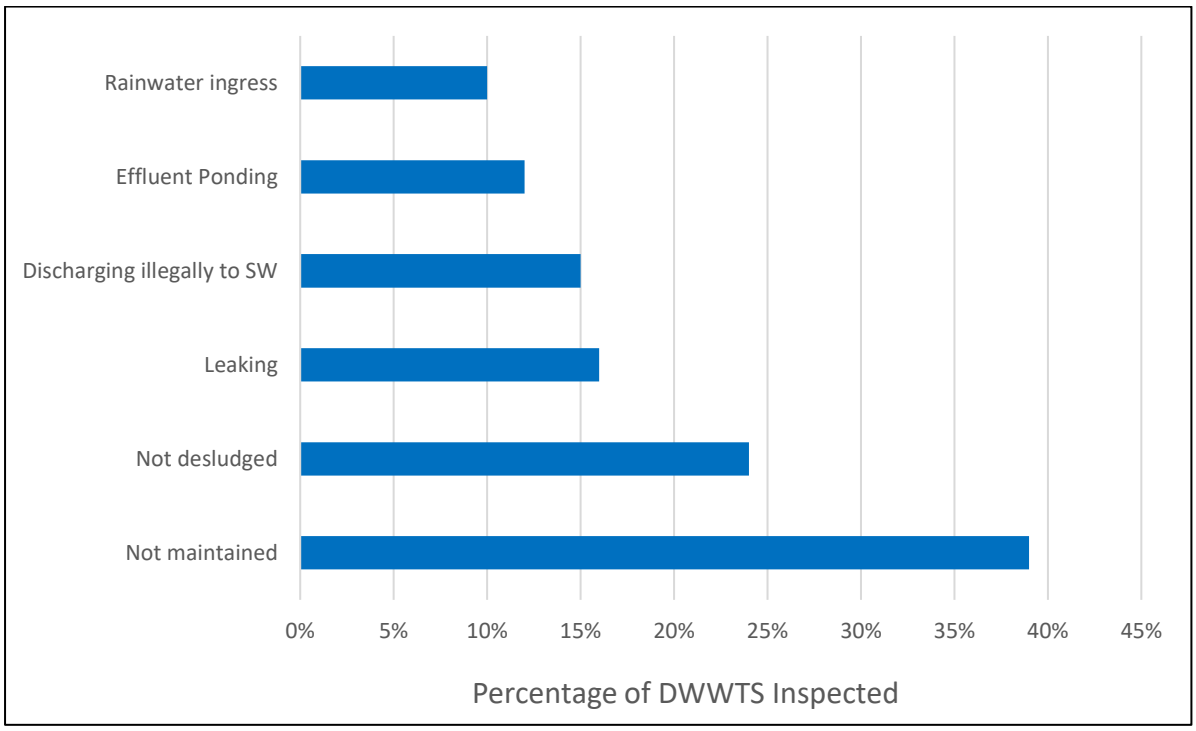


**Figure 4** Reasons for inspection failures 2020

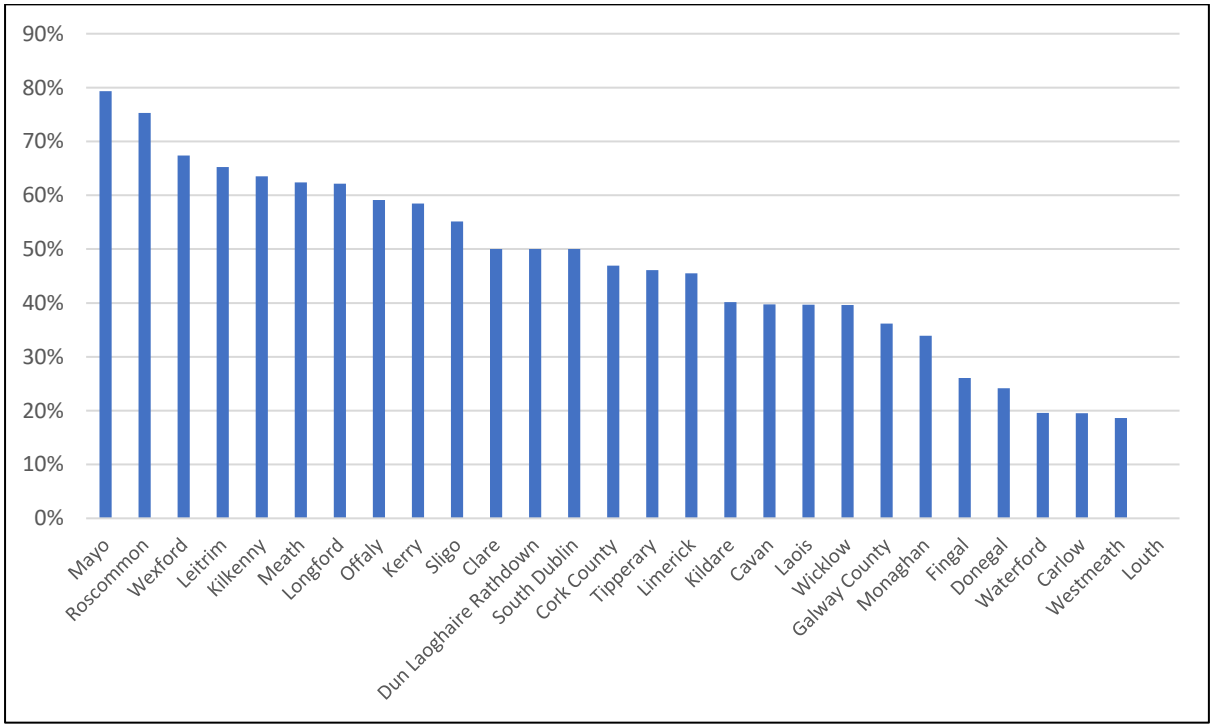


**Figure 5** Percent of DWWTS failing inspection by water service authority area 2018-2020

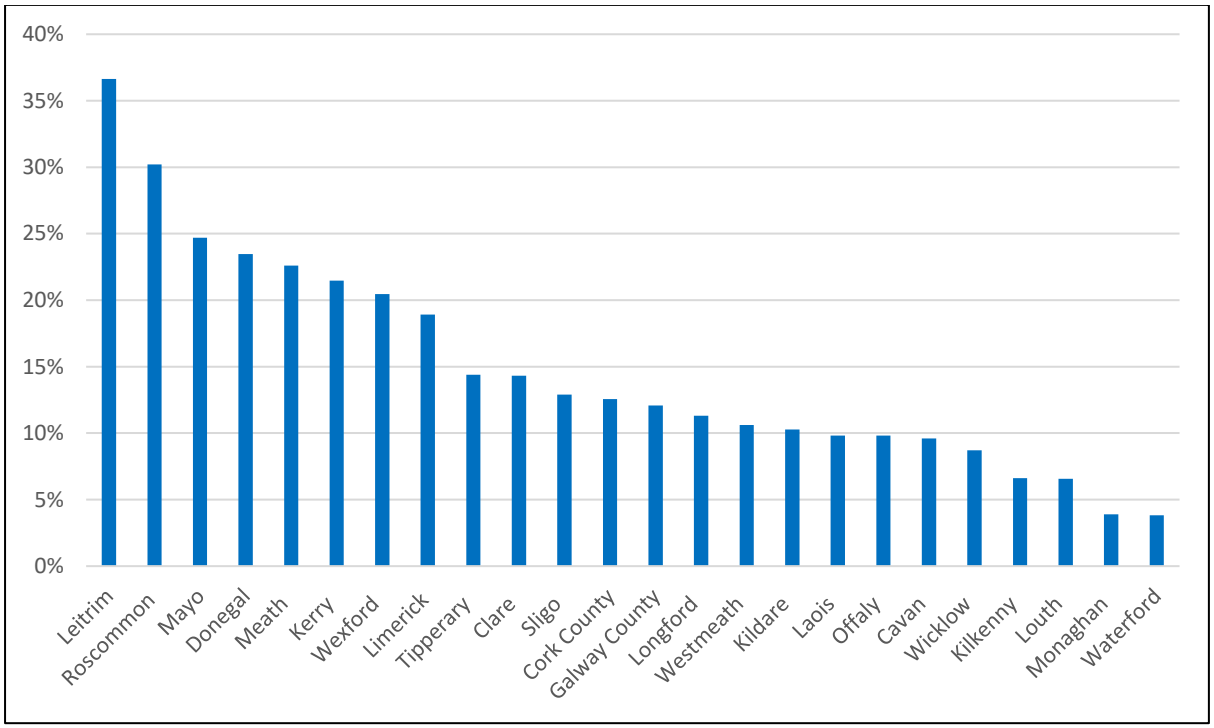


**Figure 6** Percent of DWWTS failing inspection due to illegal discharges to surface water by water service authority area 2013-2020

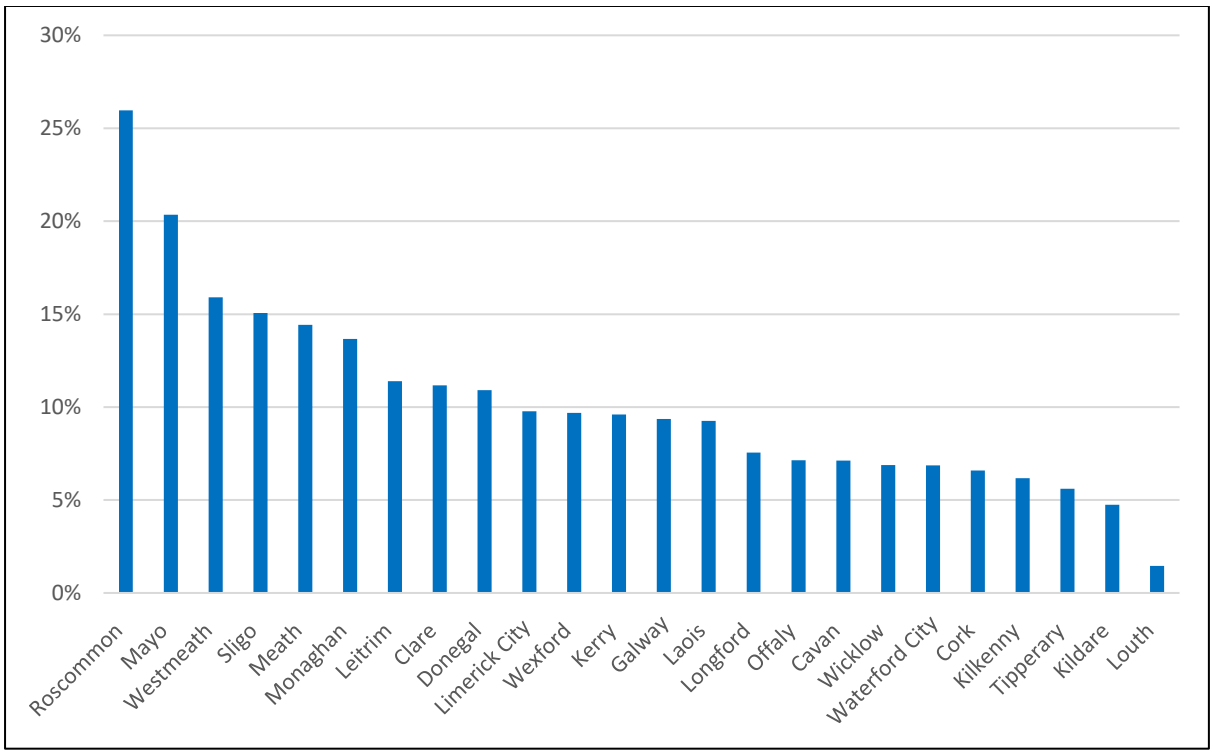


**Figure 7** Percent of DWWTS failing inspection due to ponding by water service authority area 2013-2020

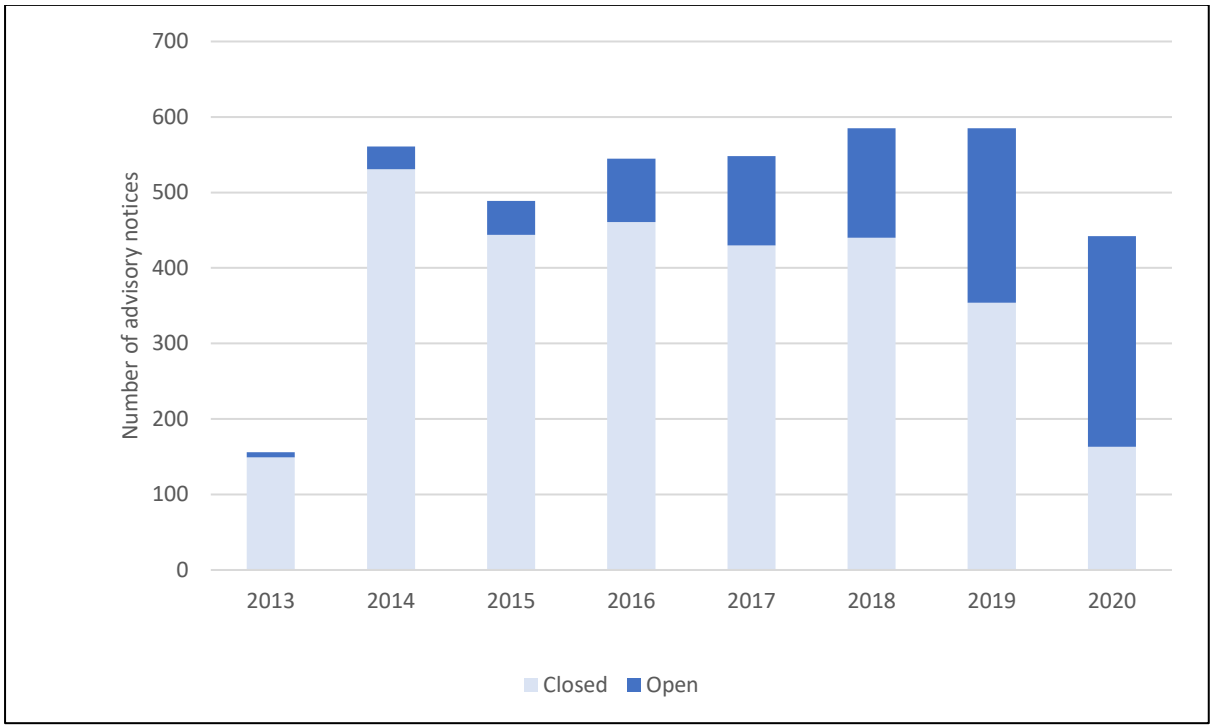


**Figure 8** Advisory notices issued from 2013 to 2020, open and closed at the end of 2020