



Draft National Inspection Plan for Domestic Waste Water Treatment Systems 2022-2026

Environmental Protection Agency

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Contents

Summary	4
1. Introduction	5
2. Background	5
2.1 Requirement for making and reviewing a plan.....	5
2.2 Scope.....	6
2.3 Previous iterations	7
2.4 Review and revision process	8
3. Responsibilities and implementation	8
3.1 Homeowners.....	8
3.2 Water service authorities.....	9
3.3 Environmental Protection Agency	9
3.4 Department of Housing, Local Government and Heritage	10
4. Inspections	10
4.1 Introduction	10
4.2 Number of inspections.....	10
4.3 Risk methodology and allocation of inspections	11
4.4 Local site selection by water services authorities.....	18
4.5 Inspection process	19
4.6 Enforcement of advisory notices	20
5. Engagement	21
6. Conclusion.....	22

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 is the proposed fourth iteration of the national inspection plan and covers the period 2022-2026. It is been issued following a review of the 2018-2021 plan.

The plan sets out requirements for:

- minimum inspection numbers;
- risk-based allocation of inspections;
- selection of sites at local level;
- enforcement of advisory notices; and
- public engagement activities.

This plan is implemented by water service authorities with support by the EPA. The EPA will report on the implementation of the plan annually.

1. Introduction

The Water Services Act 2007 (as amended) requires the Environmental Protection Agency (EPA) to produce a national inspection plan for domestic waste water treatment systems (DWWTS), also known as septic tank systems. The purpose of the plan is to protect human health and water quality from the risks posed by DWWTS. This document is the proposed fourth plan for the period 2022 to 2026. It sets out the background, minimum inspection numbers, risk-based allocation of inspections, requirements for enforcement of advisory notices and for engagement to promote broader compliance. The national inspection plan is implemented by water services authorities who conduct the inspections and engagement activities, with the supervision and support of the EPA.

2. Background

2.1 Requirement for making and reviewing a plan

Section 70K.(1) of the Water Services Act (as amended) requires the EPA to:

... make a national plan...referred to as 'the national inspection plan'...with regard to the inspection and monitoring of domestic waste water treatment systems.

The EPA must have regard to:

(a) relevant risks or potential risks to human health or the environment, and, in particular—

- (i) risks to water, air or soil, or to plants and animals,*
- (ii) nuisances through noise or odours, and,*
- (iii) risks to the countryside or places of special interest,*

(b) relevant available information in relation to specific types and locations of domestic waste water treatment systems,

(c) appropriate and specific qualitative and quantitative criteria, targets and indicators for inspections, and

(d) any incidental or ancillary matters or such matters as may be prescribed by the Minister.

The EPA must review the national inspection plan at least every five years and make revisions if necessary.

It is the function of each water services authority to:

take necessary measures to implement...the national inspection plan, including arranging for inspections...to be carried out within its functional area, as provided for in the plan.

2.2 Scope

The national inspection plan is based on a two-strand approach (Figure 1). Strand 1 is inspections by water service authority inspectors to determine if DWWTS are operating correctly and being adequately maintained. Where problems are identified, the water service authority issues the homeowner an advisory notice requiring remedial works. Strand 2 is engagement to ensure all homeowners with DWWTS know how to operate and maintain systems correctly, and understand the risks to human health and water quality from poorly operated and maintained systems.

There are several other regulatory interventions related to DWWTS including: grant schemes; interventions in priority areas and high-status catchments under the national river basin management plan; planning control; building control; and construction products control and related standards. These are outside the scope of the national inspection plan.

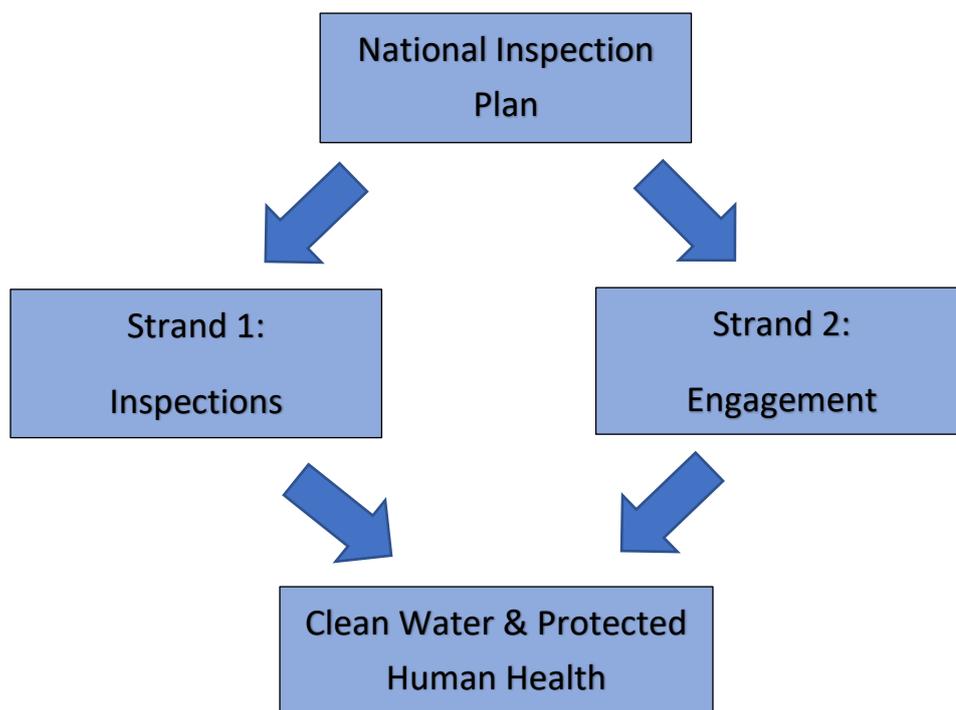


Figure 1: The building blocks of the plan

2.3 Previous iterations

The EPA prepared the first national inspection plan in 2013 covering 2013-2014. The plan required water service authorities to undertake a minimum of 1,000 inspections each year across the country. The EPA developed a risk-based methodology to assist the water service authorities with the selection of locations for inspections. The methodology took into account the potential risks posed by DWWTS to human health and water quality.

The second plan was for 2015-2017. Some minor changes were made to the risk maps used for site selection as additional environmental data had become available. This resulted in a slight change to the number of inspections in some counties.

The third plan was for 2018-2021. The risk-based methodology was updated to take into account additional information gathered on water quality during the preparation of the 2018-2021 national river basin management plan. Inspections were allocated based on different risk zones.

These plans and annual implementation reports are available on the EPA website.

2.4 Review and revision process

The EPA met with several external stakeholders during February-July 2021 to provide an overview of the review process and seek 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 EPA gathered and analysed information on the operation of the 2018-2021 national inspection plan. The EPA prepared a review document which reports on the 2018-2021 plan and makes eleven recommendations which have informed the preparation of the 2022-2026 plan.

This draft 2022-2026 national inspection plan and the review of the 2018-2021 plan are now published for 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.

3. Responsibilities and implementation

3.1 Homeowners

Homeowners with DWWTS are required by law to:

- register their DWWTS with 'Protect Our Water' which is the registration service operated on behalf of water service authorities: www.protectourwater.ie;
- ensure their DWWTS is not a risk to human health or the environment and complies with regulations;
- not impede inspectors; and
- comply with an advisory notice if the DWWTS fails inspection.

There is further information on the inspection process on the EPA website.

3.2 Water service authorities

Water service authorities are responsible for the implementation of this national inspection plan at local level. This includes:

- selecting sites for inspection and completing the minimum inspection allocations in accordance with this plan;
- ensuring inspections are carried out in accordance with the legislation and guidance as set out in this plan;
- following up on advisory notices including engagement and prosecution where warranted; and
- completing public engagement activities in accordance with this plan.

Water service authorities also need to decide whether additional inspections, i.e. above the minimum limit set in this plan, are required to protect the local environment and public health.

Local authorities have several other responsibilities for DWWTS outside of the national inspection plan including administration of the DWWTS grant schemes, responding to complaints and planning and building control.

3.3 Environmental Protection Agency

The EPA is responsible for reviewing and producing this national inspection plan, appointing water service authority inspectors and supervising water service authorities in relation to their functions.

The EPA also provides the following coordination and support by:

- monitoring implementation and reporting annually on the national inspection plan;
- coordinating the Septic Tank Inspectors Network; and
- hosting and providing technical support for the Domestic Waste Water Application computer system used by DWWTS inspectors;

The EPA undertakes public engagement and also supports public engagement by water service authorities and other stakeholders.

3.4 Department of Housing, Local Government and Heritage

The Department of Housing, Local Government and Heritage sets national water policy and strategy and prepares environmental legislation. The Department's website provides information on the available financial assistance for remediation of DWWTS:

<http://www.housing.gov.ie/water/waterquality/domesticwaste-water-systemsseptic-tanks/domestic-waste-water-treatment-1>

4. Inspections

4.1 Introduction

The objective of the inspection strategy is to reduce the risk to human health and water quality by directly engaging with homeowners to determine if their DWWTS is being correctly operated and maintained. The purpose of the inspection programme is to target inspections in areas where there is greatest risk to human health and water quality from DWWTS. The following core principles underly the allocation of inspections:

- all areas of the country are covered and are potentially subject to inspection;
- 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;
- inspections are prioritised into areas of higher relative risk; and
- the methodology is based on the source-pathway-receptor model.

4.2 Number of inspections

The number of inspections in this plan is maintained at a minimum of 1,000 per annum. This is in line with the risk posed by DWWTS on a national scale and level of inspection in other areas.

The number of inspections outlined is the minimum number required. It is recommended that additional inspections are carried out by individual water service authorities if there is evidence at a local level that DWWTS are causing an issue in a particular area.

Increased numbers of inspections may be carried under the national inspection plan where resources are available. This would lead to improved identification and remediation of faulty DWWTS.

The minimum of 1,000 per annum does not include DWWTS inspections in response to complaints, verification inspections to check DWWTS have been fixed or DWWTS work by the Local Authority Waters Programme and in relation to grants in priority areas for action and high-status objective catchments.

4.3 Risk methodology and allocation of inspections

DWWTS installed and maintained in accordance with best practice provide adequate treatment and disposal of waste water. The risks to public health and water quality are minimised by having the correct design, suitable ground conditions and proper operation and maintenance of the system.

The main risks associated with DWWTS if not installed and maintained properly are:

- pollution of watercourses and groundwater; and
- contamination of a drinking water source (including household wells) or ponding of sewage on the ground.

Figures 2 and 3 show how a discharge from a DWWTS can find its way to a river or groundwater used for drinking water. In Figure 2 the discharge moves through thin subsoil and fractures in the rock to reach a drinking water well. The soil and bedrock cannot treat the pollution and therefore it can end up in the drinking water well.

In Figure 3 the ground is not able to treat the wastewater as it cannot go down into the soil. This can result in ponding of the wastewater from the DWWTS at the surface which can be a potential threat to human health. There is also the potential in such a situation for the wastewater to move overland or in the subsoil and enter a drinking water well by flowing

down the outside of the well casing if it has not been properly installed. This can cause contamination of the water supply.

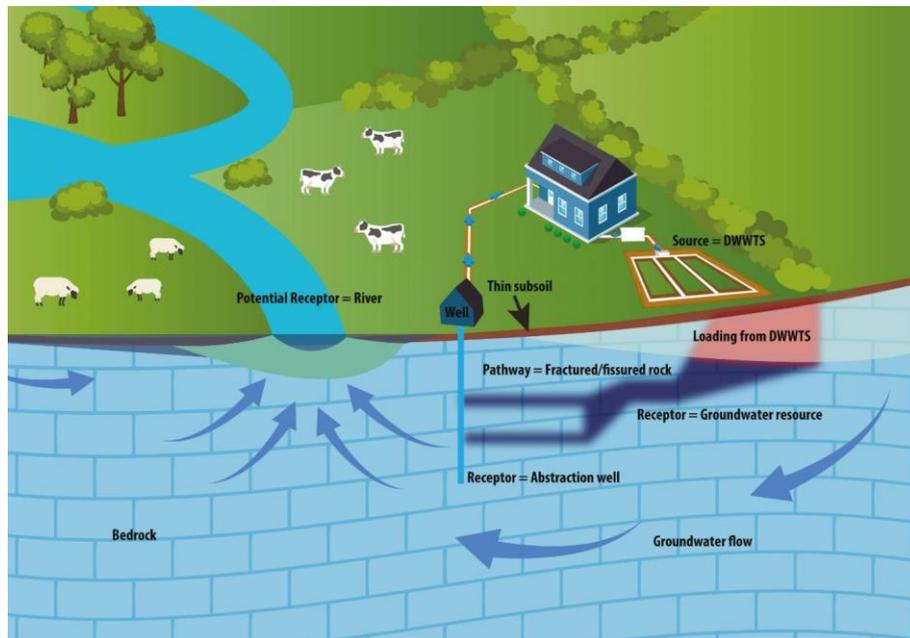


Figure 2: S-P-R model for domestic waste water treatment system with subsurface pathways

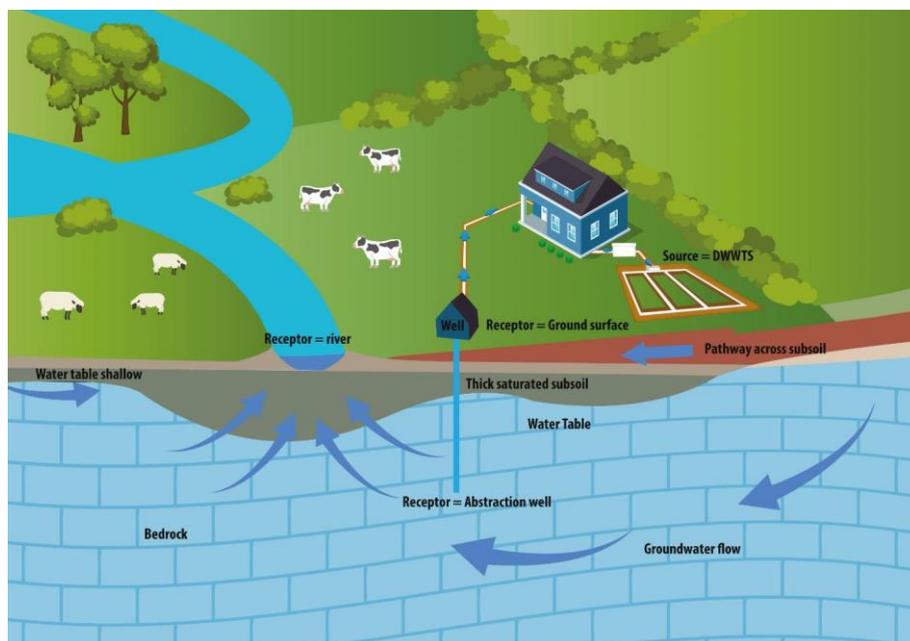


Figure 3: S-P-R model for domestic waste water treatment system with surface pathways

The EPA developed a risk-based methodology in 2013 in conjunction with the Geological Survey of Ireland (GSI) and other external experts to assist water service authorities in the selection of properties for inspection. The methodology took into account the potential risk posed by domestic waste water to both human health and the environment in a particular area. Further details on how the risk-based methodology was originally developed are outlined in the EPA publication “A risk-based methodology to assist in the regulation of domestic waste water treatment systems” (EPA, 2013). The risk assessment method uses the source-pathway-receptor model. The model is based on the concept that for a risk to exist there must be a source of potential pollution, a receptor that may be impacted by that pollution and a pathway by which the pollution can get from the source to the receptor.

This methodology was modified slightly for the second national inspection plan and more significantly for the third plan to take account of the 2018-2021 national river basin management plan.

The national river basin management plan 2018-2021 (currently under review) includes a programme of measures aimed at achieving water quality standards required by Water Framework Directive (2000/60/EC). The national inspection plan is a listed measure in the national river basin management plan. Since 2015, a large body of work has been undertaken by the EPA in conjunction with local authorities, Inland Fisheries Ireland (IFI), Irish Water and other stakeholders to assess the significant pressures on water bodies including DWWTS where relevant. As part of the characterisation assessment, the EPA used several modelling tools to help inform the process including the Source Load Apportionment Model (SLAM), Pollution Impact Potential (PIP) maps and Sanicose which was developed to inform the risk assessment of DWWTS on water bodies. The following information is used to assess if the DWWTS are a significant pressure for a water body:

- water quality monitoring;
- landscape drainage characteristics (based on soils, subsoils and bedrock maps) indicating percolation conditions;
- the location of houses, particularly in areas with poor drainage characteristics (this was informed by the Sanicose model); and
- information from inspections and stream walks.

The risk-based methodology in this 2022-2026 plan builds on the 2018-2021 national inspection plan and latest river basin management plan information (Figures 4 and 5). The 2022-2026 methodology provides for a minimum of 1,000 inspections per annum, allocated as follows:

1. 400 inspections in areas with higher relative risk to surface waters (Zone 1).
2. 400 inspections in areas with higher relative risk to household wells (Zone 2).
3. 200 inspections in areas of lower relative risk (Zone 3).

Higher relative risk to surface waters (Zone 1): These are areas that do not have public sewage mains and which are within 100m of water bodies where DWWTS have been identified as a pressure on water quality under the national river basin management plan. There are approximately 6,000 residential buildings in these areas. This focuses inspection resources with the aim of making significant progress in these areas as quickly as possible to contribute to the river basin management plan goals.

Higher relative risk to private wells (Zone 2): Household wells tend to be at much higher risk of contamination compared to other drinking water supplies. Although DWWTS are not the only source, DWWTS inspections should be targeted at this problem. Areas where there is higher groundwater susceptibility to percolation of wastewater pathogens into groundwater were identified, i.e. areas with 1m or less of soil or nearby karst features over bedrock aquifers. Public sewage and water supply areas were excluded¹. There are an estimated 25,000 residential buildings in these areas.

¹ There is insufficient information to exclude areas with group water mains. This is included as a local site selection criteria. This could be a further refinement of the national model if information became available.

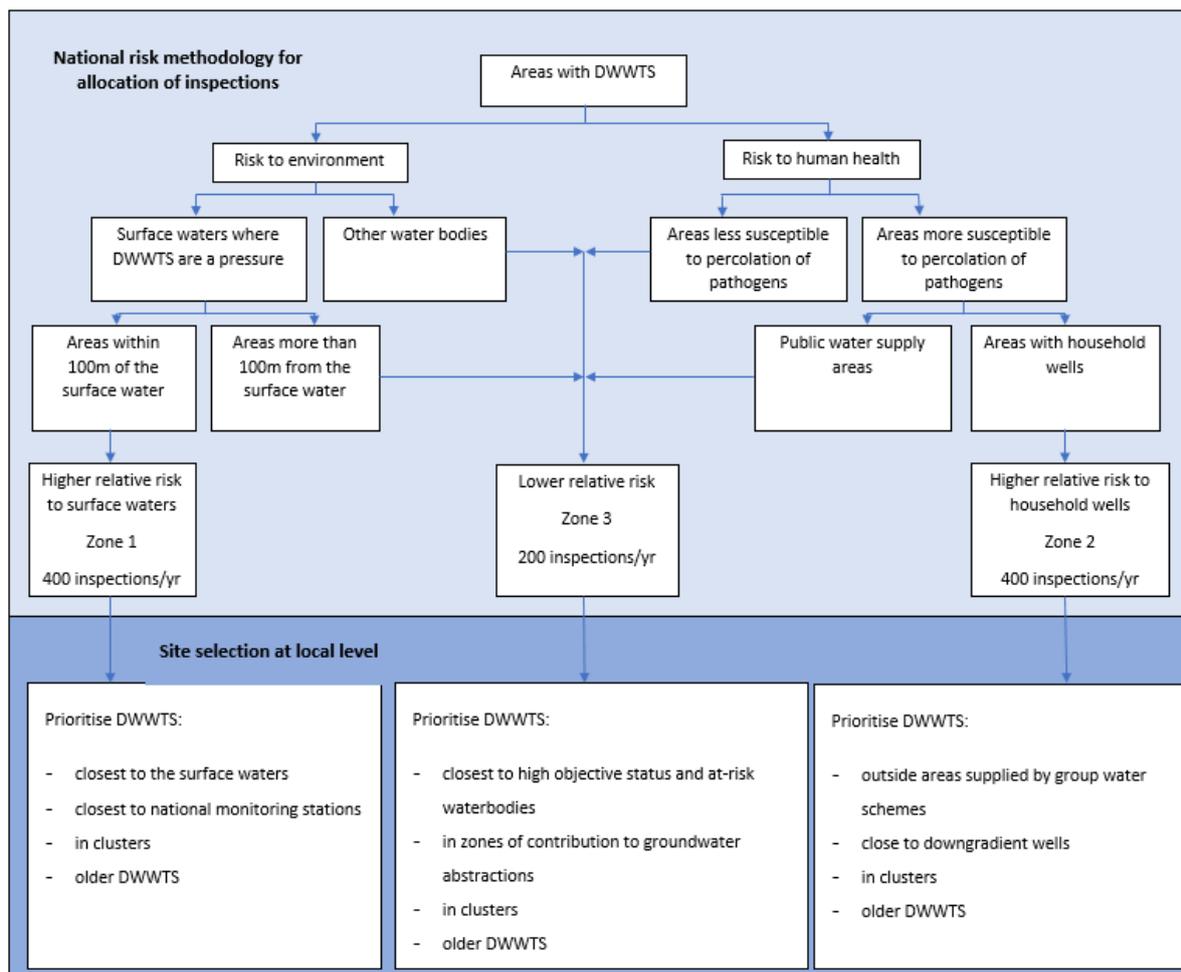


Figure 4: National risk methodology for allocation of inspections and site selection at local level.

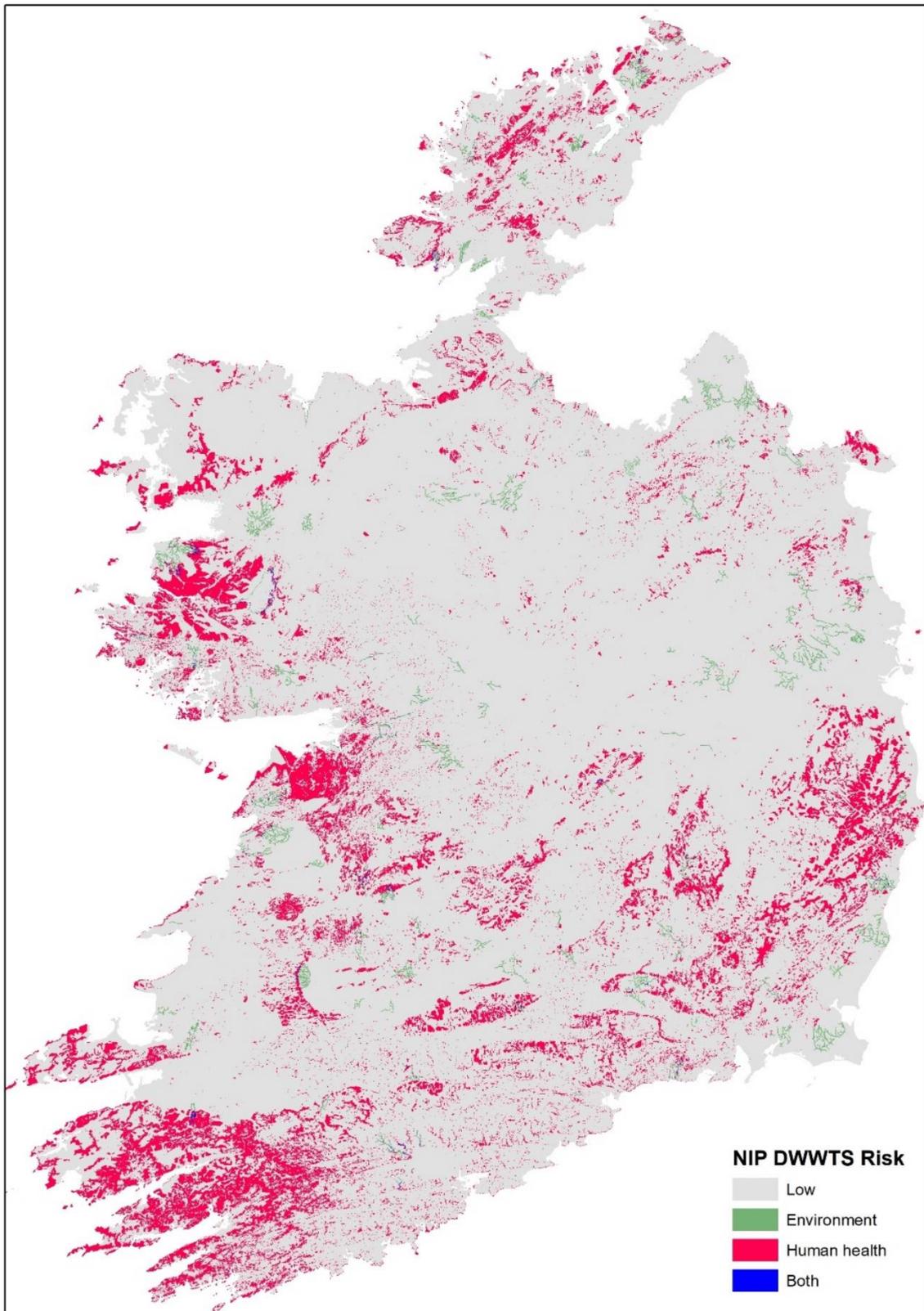


Figure 5: National distribution of risk zones

The allocation of inspections to each water services authority are presented in Table 1. This is weighted based on the estimated percentage of residential buildings in each risk zone in each water services authority area.

Water services authorities must complete their minimum annual allocations each year as prescribed in this plan.

Water service authorities must also ensure the inspections are distributed in the three zones as prescribed, but this can be achieved over the five years of the plan. Water service authorities should give greatest priority to areas when Zones 1 and 2 overlap.

These are minimum requirements and, as stated above, it is recommended that additional inspections are carried out by individual water service authorities if there is evidence at a local level that DWWTS are causing an issue in a particular area.

Table 1: Allocation of inspections to each water services authority

Water service authority	Inspections 2022-2026				Minimum per annum
	Zone 1	Zone 2	Zone 3	Total	
Carlow	0	60	15	75	15
Cavan	50	60	30	140	28
Clare	130	215	40	385	77
Cork City	30	5	5	40	8
Cork County	90	370	105	565	113
Donegal	315	50	85	450	90
Dun Laoghaire/Rathdown	0	5	0	5	1
Fingal	45	0	10	55	11
Galway City	0	5	0	5	1
Galway	170	180	90	440	88
Kerry	90	95	60	245	49
Kildare	55	10	40	105	21
Kilkenny	35	150	25	210	42
Laois	0	25	20	45	9
Leitrim	15	10	15	40	8
Limerick	105	115	40	260	52
Longford	0	5	15	20	4
Louth	0	30	25	55	11
Mayo	115	50	60	225	45
Meath	155	65	45	265	53

Monaghan	125	20	20	165	33
Offaly	10	5	20	35	7
Roscommon	30	5	30	65	13
Sligo	5	5	20	30	6
South Dublin	0	15	5	20	4
Tipperary	75	45	50	170	34
Waterford	10	65	25	100	20
Westmeath	5	5	25	35	7
Wexford	290	185	55	530	106
Wicklow	50	145	25	220	44
Total	2000	2000	1000	5000	1000

4.4 Local site selection by water services authorities

The link between the national risk methodology and local site selection is shown in Figure 4.

The selection of DWWTS for inspection in areas with higher relative risk to surface waters (Zone 1) should further prioritise (where information is available) DWWTS that are:

- closest to the surface waters;
- close to national monitoring stations;
- in clusters; and
- older DWWTS.

Where these areas intersect with Priority Areas for Action, water service authorities should liaise with the Local Authority Waters Programme when making annual inspection plans to align their DWWTS work programmes. Inspections under the national inspection plan can be conducted in other areas if not appropriate in priority areas at a particular time.

The selection of DWWTS for inspection in areas with higher relative risk to household wells (Zone 2) should further prioritise (where information is available) DWWTS that are:

- outside areas supplied by group water schemes;
- close to downgradient wells;
- in clusters; and
- older DWWTS.

The selection of DWWTS in areas of lower relative risk (Zone 3) should prioritise (where information is available) DWWTS that are:

- closest to high objective status and at-risk waterbodies;
- in zones of contribution to groundwater abstractions;
- in clusters; and
- older DWWTS.

Water service authorities may also use local knowledge such as information on known water pollution.

Water services authorities should document the application of the site selection methodology and outlining the justification for the selection of priority areas and individual sites.

4.5 Inspection process

The inspection process must follow the legal requirements in the Water Services Act 2007 (as amended).

The water service authority sends the homeowner a pre-inspection letter at least 10 days in advance of an inspection taking place. Homeowners do not have to be present but many people prefer to be there so they can hear about any issues. No access to the house itself is required. The water service authority inspector must carry their certificate of appointment and identification and produce these if requested.

The water service authority inspector will check that the DWWTS is not a risk to public health or the environment and complies with the Water Services Acts 2007 and 2012 (Domestic Waste Water Treatment Systems) Regulations 2012 (S.I. No. 223 of 2012). The homeowner will be notified of the findings of the inspection. 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. Additional information on what to expect from an inspection, including videos and leaflets, is available on the EPA website at:

<https://www.epa.ie/environment-and-you/waste-water/>

Thoroughness and consistency in inspections and enforcement is extremely important. DWWTS inspectors must have completed a two-day course by the Local Authority Services National Training Group and are provided with a practical guidance manual. The EPA coordinates the Septic Tank Inspectors Network as part of the Network for Ireland's Environmental Compliance and Enforcement. This is a platform for DWWTS Inspectors to meet, exchange information and develop guidance. The following are available to Inspectors through the Septic Tank Inspectors Network:

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

Water services authorities should ensure inspections are carried out in accordance with the:

- Water Services Act 2007 (as amended) and associated regulations;
- training provided by the Local Authority Services National Training Group;
- *Guidance Manual for the Inspection of Domestic Waste Water Treatment Systems*; and
- guidance provided by the Septic Tank Inspectors Network.

4.6 Enforcement of advisory notices

National inspection plan reports have highlighted that failure to resolve older cases is a concern that needs to be addressed as a priority. This is an area that requires increased engagement and enforcement by water service authorities.

The *Guidance Manual for the Inspection of Domestic Waste Water Treatment Systems* provided to inspectors as part of the inspector training course sets out typical timeframes for remedial works ranging from 1 to 12 months depending on the seriousness of the issue and scale of works required.

An *Enforcement Flow Chart* has been provided 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 (Appendix A). This

provides for engagement through reminder and warning letters at specific points in the process and legal proceedings in the event of failure to comply. Failure to comply with an advisory notice is a prosecutable offence with a potential fine of up to €5,000.

Water service authorities should ensure all advisory notices are followed up, including prosecution where warranted, in accordance with the:

- Water Services Act 2007 (as amended) and associated regulations;
- *Guidance Manual for the Inspection of Domestic Waste Water Treatment Systems*;
and
- *Enforcement Flow Chart*.

Water service authorities need to allocate appropriate resources to enforcement of advisory notices and keep records of the engagement and enforcement measures taken in each case.

5. Engagement

An essential part of the implementation of the national inspection plan is communication and engagement with the public. Each homeowner needs to be aware of how to operate and maintain their DWWTS and the potential health implications if the system is not correctly operated and maintained. Homeowners need to be provided with information on the measures that they can take to protect their health and that of their family, neighbours and the environment.

Water service authorities are responsible for on-going communication and engagement with the public at a local level. It is the EPA's responsibility to oversee the implementation of the engagement by the water service authorities.

Water service authorities must undertake engagement activities including:

- articles and advertisements in newspapers or other publications;
- radio interviews and advertisements;
- social media posts;
- distribution of leaflets and information packs;
- maintenance of webpages;

- school visits; and
- stakeholder/public meetings.

A group will be established to:

- set specific engagement requirements for each water service authorities on a pro-rata basis (like the minimum inspection allocations in this plan); and
- collate good examples, templates and materials for articles, websites, advertisements; and
- undertake a targeted engagement initiative highlighting the risks to human health and the environment.

The EPA will undertake the following engagement activities:

- publication of a report on septic tank inspections each year;
- maintenance of the EPA webpages with information for householders and professionals;
- respond to queries relating to DWWTS;
- development and supply of information leaflets; and
- engagement with national and international stakeholders.

Although outside the scope of the national inspection plan, there is significant additional engagement in relation to DWWTS by other stakeholders including:

- The ongoing Local Authority Waters Programme community engagement, communications and outreach programme;
- Department of Housing, Planning and Local Government grant schemes; and
- National Federation of Group Water Schemes work in group water scheme catchment areas.

6. Conclusion

This document is the *National Inspection Plan for Domestic Waste Water Treatment Systems 2022-2026*. This plan must be implemented by water service authorities, with support and supervision by the EPA. The EPA will report on the implementation of the plan annually.