

Water Supply Project

Eastern and Midlands Region

Appendix A

Interim Midlands and GDA Water Resource Plan



Interim Midlands and GDA Water Resource Plan

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EXECUTIVE SUMMARY

The WSP Benefitting Corridor consists of **105** separate water treatment plants supplying over - **157MLD** to their associated water supply zones.

The objectives set out in the Water Services Strategic Plan are to reduce contamination risk and supply interruptions and support economic growth. In order to achieve these objectives, it is necessary to secure sustainable water sources, reduce leakage to an economic level and improve water quality standards.

Irish Water has identified the sources and treatment plants at risk due to supply and treatment deficits and aims to focus on strategic water sources, reducing the number water treatment plants in the Midlands region from 105 to a more sustainable number of the order of 30% of this, by 2050. This represents a fundamental shift from discrete water supply zone operation to integrated water resource zone management. Irish Water will move towards the Water Resource Zone as the spatial unit to provide the strategic framework for managing water resources and demand, and investments. The definitions below are useful to describe the difference between approaches to water resource management.

Water Supply Zone: “A Supply Zone is a geographically defined area within which water intended for human consumption comes from one or more sources and water quality may be considered as being approximately uniform.” (Irish Statute Book, 2014)

Water Resource Zone: “The largest possible zone in which all resources, including external transfers, can be shared and hence the zone in which all customers will experience the same risk of supply failure from a resource shortfall.” (UKWIR, 2012)

The overall aim is to reduce the risk of contamination and interruption through better management of strategic resources and increased interconnectivity of supply zones. The Water Supply Project Eastern and Midlands Region (WSP) provides all the supplies in the benefiting corridor with improved resilience and the ability to support demand growth over the longer term.

By 2050 the demand in the benefiting corridor is estimated to reach **181MLD** which cannot be met by existing sources and treatment capacity. The midland water resource zone requires an additional “backbone” supply of at least 56MLD by 2050. Without the WSP there is a significant risk that Irish

Water will not be able to meet its WSSP objectives and that the cost of operations, maintenance and capital investment required to improve and maintain service levels will not be sustainable.

This document sets out the Dublin Water Supply Area and Interim Midland Water Resource Plan at a high level, including the key steps and assumptions. This report is supported and informed by:

1. The WSP Eastern & Midlands Region Project Needs Report (Feb 2015)
2. The GDWSA Supply/Demand and Resilience Strategy Report

WATER SERVICES STRATEGIC PLAN

Ireland's first integrated national plan for the delivery of water services, the Water Services Strategic Plan (WSSP) addresses six key themes:

- Customer service
- Clean safe drinking water
- Effective management of wastewater
- Protect and Enhance the environment
- Supporting social and economic growth
- Investing in our future

The WSSP is an essential part of ensuring the availability of safe drinking water. It will ensure that we have an environment that is protected from the impacts of wastewater discharges, and that we have efficient modern systems that meet the needs of customers, contribute to economic growth and development, and provide value for money.

The WSSP was developed following two phases of public consultation and underwent a Strategic Environmental Assessment (SEA) and an Appropriate Assessment (AA). The initial consultation was non-statutory and took place from July to September 2014. As part of the second statutory phase of public consultation, Irish Water invited submissions on the Draft WSSP together with the SEA Environmental Report and Natura Impact Statement (AA process) from the 19th February to the 17th April, 2015.

Delivering on the WSSP over the next 25 years will require an unprecedented transformation in how the industry operates and increased levels of investment. The WSSP sets out the challenges we face as a country in relation to the provision of water services and identifies strategic national priorities. It includes Irish Water's short, medium and long term objectives and identifies strategies to achieve these objectives.

The key elements of the Water Services Strategic Plan (approved by the Minister for Environment, Community and Local Government in October 2015) relating to water supply are:

- Plan for strategic development of water supplies that comply with water quality standards and build in security of supply;
- protect our water supplies in accordance with international best practice;
- eliminate Boil Water Notices other than from short term extreme events.

IRISH WATER'S APPROACH

By adopting a single national best practice approach to assessing and managing drinking water supplies, Irish Water has shown beyond any doubt that drinking water quality across the country has been seriously compromised by a systematic failure in how water services have been delivered and funded over several decades.

This work is based on the recommended World Health Organisation (WHO) approach to safe drinking water supply using a 'source to tap' risk based methodology which analyses risk rather than waiting for sampling failures. Irish Water's work in the past two years has indicated serious compliance challenges ahead for hundreds of drinking water supplies as a result of the first ever comprehensive evaluation of the performance of Ireland's drinking water production plants including those in the GDWSA and Benefiting Corridor.

The historic water quality monitoring regime was systematically inadequate to identify the scale and range of issues that need to be addressed in order for be a reliable basis of public health assurance in drinking water. Treatment plants and networks were not upgraded or maintained because the money and resources were not available to do so. Many are therefore no longer fit for purpose or in need of significant investment.

Each drinking water scheme on the EPA list is considered to be a high risk of contamination. The current EPA RAL lists 119 schemes nationally, providing water to 803,000 Irish Water customers, which are in need of urgent attention and form the basis for Irish Water's current investment plan. Irish Water has now completed its risk based assessment of all public water supplies that shows that the real picture is more serious based on a full national picture across all plants. Irish Water has now classified at least half of its 900 drinking water schemes as being at risk, with a range of severity, the most serious category having inadequate barrier to microbiological contamination under a range of raw water conditions.

Irish Water has introduced a more consistent and comprehensive water quality sampling regime across the country which is picking up compliance failures that had been missed previously. Today 35,000 Irish Water Customers are dealing with Boil Water Notices, for which Irish Water is grappling with trying to fast-track interim solutions to be followed by more secure long term schemes. However, the reality is that this number is more than likely to increase in the short term because for the first time the national utility is carrying out systematic analysis, sampling and reporting at a level that was never done before. While the 472 schemes that Irish Water deems to be at risk represents over half of all Irish Water plants, the proportion of the population served is actually 16%. Smaller plants serving largely rural schemes tend to be the most at risk.

Addressing this structural failure in managing drinking water quality nationally requires a totally new best practice approach. Irish Water has now adopted the World Health Organisation (WHO) Water Safety Plan approach for ensuring drinking water supplies are safe and secure. The WHO consider a Drinking Water Safety Plan (DWSP) as *'the most effective means of consistently ensuring the safety of a drinking water supply through the use of a comprehensive risk assessment and risk management approach that encompasses all steps in water supply from catchment to consumer'*.

Drinking Water Safety Planning requires a **'source to tap'** risk assessment & mitigation approach which results in comprehensive and robust solutions and a far safer water supply system.

Properly addressing drinking water quality compliance issues in the long term is a national issue of major proportions which can only be addressed by an expert led utility approach to investment and remediation. Because of the urgency of the situation, Irish Water is scheduling interim measures to minimise the immediate risk of failure, while at the same time developing longer term solutions (over the next 5 years) which in many cases will involve removing most of the smaller sources from the national drinking water supply network by connecting them instead to larger regional schemes with full modern treatment facilities.

RISK OVERVIEW

PRODUCTION RISK

Based on the statement of needs analysis carried out for the CIP 2017-2021 submission, of the 105 WTPs in the region covered by the Water Supply Project:-Eastern & Midlands Region, it is currently estimated that there are:

66 WTPs with inadequate treatment capacity

66 WTPs with inadequate source yield capacity

91 WTPs with a protozoa barrier deficiency

16 WTPs with a THM issue

23 WTPs with inadequate treated water storage

The cost of remedial action for all deficiencies nationally is very significant. Most of the deficiencies require new treatment processes in order to achieve compliance with the drinking water regulations and with this comes an increased cost of operations and maintenance and would likely increase the average cost of water production from approximately €0.09/m³ to over €0.30/m³-€1.00/m³ depending on the size and complexity of the process. Irish Water's experience in developing the CIP 2017-2021 was that the cost of ownership of small complex water treatment plants is significantly higher than the larger complex treatment plants found in other jurisdictions. Each WTP and abstraction requires an overhead of performance monitoring, compliance monitoring, operation source protection etc.

Addressing deficiencies at each WTP is not sustainable, in order to address this we need to reduce the number of WTPs and focussing on strategic water sources connected by improved trunk main and storage capacity to offset the loss of underperforming and unsustainable WTPs.

ABSTRACTION LICENCING

Probably one of the largest risks facing Irish Water is the limited number of licenced abstractions and the lack of regulation. Many of the existing abstractions have limited sustainable yield, which cannot support long term growth, even with water conservation measures. The process for obtaining increases to existing abstractions or obtaining new abstractions is complex and high risk;. In order to maintain a strategic approach to delivering secure water supplies it is necessary to focus on those that have both the long term potential and that are unlikely to have overly restrictive abstraction conditions.

Ireland has yet to implement an abstraction registration and licencing programme as required by the Water Framework Directive and at this point in time, it is unclear what the requirements of abstraction licencing will be. Many of the surface water source current abstractions were established prior to the introduction of environmental impact assessments or Habitats Directive assessments and retrospective review could determine that the level of proposed abstraction is not sustainable. A licencing programme with retrospective implications presents an unknown risk to the production

capacity in the midland region, particularly to abstractions where there has been no recent upgrade, which would have assessed the environmental impacts.

Irish Water has reviewed the 28 Water Treatment Plants which it is anticipated will remain at 2050 to establish if any may be at risk due to changing legislation in relation to abstractions, or for other reasons. From these there is a potential that the following abstractions fall into this category:-

- The Portloman WTP (Westmeath), which draws from Lough Owel has a current yield available to Irish Water which estimated to be 13.6MLD. Because the Royal Canal has been returned to navigability, and under the terms of agreements made in relation to water requirements for the canal, ancillary to the original Water Rights Order, a prudent provision needs to be made against long term availability of this 13.6 Mld.
- Clonsalee WTP (Offaly), the surface water sources from the Clodiagh & Gorragh Rivers, involving 1Mld are considered at risk in low flow conditions
- The Tullamore, Co Offaly groundwater supplies (Arden and Clonsalee WTP's), totalling 3.4 Mld are considered to be at risk
- Laois is totally dependent on groundwater and may be at risk as a whole. The Portlaoise Water Supply (8.4 Mld) in particular is known to experience high levels of drawdown following dry conditions, and has been the subject of consultation submissions by Laois Co. Council related to strategic backup support.

Outside of the Midlands region, surface water abstractions where there is uncertainty over the standing of prior environmental assessments include:

- The Leixlip and Ballymore Eustace abstractions (combined abstraction 84% of annual flow in the River Liffey)
- The Bog of the Ring abstraction (3.9MLD) where groundwater drawdown is closely monitored due to concern over long term sustainable yield.

Although most of the water treatment plants will be upgraded to include multiple treatment barriers and to address risks identified through the Drinking Water Safety Plan risk assessments, catchment risk management is outside the direct control of Irish Water, and there is a real risk that a source contamination event could cause the loss of any one source. Risk to existing major sources was discussed in the Project Need Report (Feb 2015), and this continues to be a major factor in project need. Due to its location in the catchment and its proximity to highly populated areas, with a large waste water treatment plant upstream, the Leixlip WTP is considered to be particularly vulnerable to such events, and this is an influencing factor in phasing recommendations. Climate change

assessments are likely over time to reduce the reliable yield of sources, although the degree of reduction is unknown at this stage, the future impact must be considered.

It is also unclear at this time how many Group Water Schemes and Developer Provided Infrastructure (DPI) will be taken in charged by Local Authorities or transferred to Irish Water. There is a significant number of Group Water Schemes and DPI in a category that may transfer to Irish Water, placing additional demand on existing Irish Water abstraction and treatment capacity.

These risk factors have not been included in the demand projections, and it would not be proportionate to provide for the full exposure in every instance. However Irish Water believes it is prudent to provide a contingency of at least 16MLD to deal with unforeseeable abstraction restrictions, contamination events or demand increases in the Midlands area in particular.

It is noted that:

- pressure management will plateau after 2021 as most areas will have been pressure managed by then;
- Active Leakage Control (ALC) will start to become less effective after the initial Irish Water target has been achieved, after that leakage reduction will either approach the cost of rehabilitation;
- In the absence of solid network information to plan the interventions, we recommend that the basic principle of halving the leakage, doubles the cost. Roughly speaking this means that rehabilitation starting at €7m/MLD will double twice in the design period.

Wholesale pipe replacement will result in serious disruption to the city (€/hr of disruption), will not be acceptable in terms of cost to the customer or CER, is likely to require more resources than the industry can provide or will divert resources from other WSZ leakage activities.

GROWTH

Long range demand is dependent on so many factors that projections to 2050 across multiple schemes are inherently challenging and at this point in time provide only a strategic direction for the 2016-2050 period. Within this period, Irish Water will be tracking demand year on year and will adjust the sequence and priority of rationalisation, WTP upgrades and water conservation measures to best meet the emerging demand.

In the CIP 2 submission, the average demand growth projected across the region by Irish Water averages out at 1.5% including all domestic, non-domestic consumers increasing from 118MLD to 181MLD from 2015-2050.

CSO CENSUS DATA

The growth projection methodology was developed for the CIP 2017-2021 but has its basis on 2009 CSO data, which is now out of date and will be reviewed as the new census data becomes available later in 2016.

Based on the CSO press releases 14/07/2016, their preliminary census results show an increase of 169,724 persons since 2011 or 3.7% in the 5 years from 2011 to 2015. However, the populations in the Dublin Water Supply Area and Midlands region were among the fastest growing, with an average in the Leinster region of 5%. This suggests that the Irish Water growth projections in the PNR may be considered low based on the current apparent economic growth rate.

	2011	2016
Leinster		
Population (Number)	2,504,814	2,630,720
Actual change since previous census (Number)	209,691	125,906
Percentage change since previous census (%)	9.1	5.0
Carlow		
Population (Number)	54,612	56,875
Actual change since previous census (Number)	4,263	2,263
Percentage change since previous census (%)	8.5	4.1
Dublin		
Population (Number)	1,273,069	1,345,402
Actual change since previous census (Number)	85,893	72,333
Percentage change since previous census (%)	7.2	5.7
Kildare		
Population (Number)	210,312	222,130
Actual change since previous census (Number)	23,977	11,818
Percentage change since previous census (%)	12.9	5.6
Laois		
Population (Number)	80,559	84,732
Actual change since previous census (Number)	13,500	4,173
Percentage change since previous census (%)	20.1	5.2
Meath		
Population (Number)	184,135	194,942
Actual change since previous census (Number)	21,304	10,807
Percentage change since previous census (%)	13.1	5.9
Offaly		
Population (Number)	76,687	78,003
Actual change since previous census (Number)	5,819	1,316
Percentage change since previous census (%)	8.2	1.7
Westmeath		
Population (Number)	86,164	88,396
Actual change since previous census (Number)	6,818	2,232
Percentage change since previous census (%)	8.6	2.6
Wicklow		
Population (Number)	136,640	142,332
Actual change since previous census (Number)	10,446	5,692
Percentage change since previous census (%)	8.3	4.2

Table 1: CSO Preliminary Results 2016

INDUSTRIAL GROWTH

Large Industrial Demand has been included based on IDA projections, which do not provide an indication of when the large single point demands may be realised. The experience to date with larger commercial consumers including FDI, is that the availability of water in a short timeframe can be critical in their decision to invest in Ireland; as illustrated above, there are few locations in Ireland

that could support new industry without significant investment in local water infrastructure. It has been assumed that all of the IDA projected demand in the Midlands benefiting corridor will be realised in the 2015-2025 period.

Note: Due to the lack of headroom in most water supplies zones and the long lead time for new source treatment development, intensified leakage reduction may be the only way in which Irish Water can respond to a large point demands. Using leakage in the short term as the only means to offset the yield deficiency in the Dublin Water Supply Area and the Midlands region will seriously compromise Irish Water’s long term ability to respond to new industrial demands.

OBSERVED GROWTH FROM CONNECTION & DEVELOPER SERVICES AND NEW CONNECTION APPLICATIONS DATA

PCE's Received YTD 2016

County	2014	2015	2016 YTD	Total # of PCE's	Total Residential units
Clare	6	17	26	49	656
Limerick	13	19	28	60	1051
Tipperary	3	6	4	13	26
Offaly	0	4	3	7	46
Laois	1	12	9	22	498
Westmeath	3	4	4	11	1
Meath	2	7	9	18	2304
Louth	2	8	11	21	2008
Wicklow	1	8	19	28	1235
DCC	2	18	9	29	2774
South Dub	1	1	2	4	0
DLR	7	13	16	36	3697
Fingal	8	24	18	50	5281
				Total	19577

LEAKAGE REDUCTION

Current leakage on our networks is approximately -204.7 MLD in the Dublin Water Supply Area and 60MLD in the Midlands region. This figure incorporates the most up to date domestic meter readings and uses a consumption per property figure of 365litres/day as agreed for the 2016 Annual Service Plan targets for each Local Authority (LA).

The target for each LA and WSZ is to achieve a minimum of approximately 2% per year, equating to a reduction of 200MLD nationally by 2020. Each WSZ has been set specific targets that are backed up by OPEX and CAPEX interventions such as pressure management, find and fix, mains replacement etc.

In pursuit of developing sustainable long term water resources, Irish Water will continue to drive leakage in the current and subsequent investment plans to the point where it becomes more expensive to reduce leakage than it does to maintain levels, based on social, environmental and economic factors. This point is known as the Sustainable Economic Level of leakage (SELL). Irish Water is working to improve the quality of information available to assess SELL targets and will continue to re-assess those targets, rebalancing the investment portfolio from supply to demand focussed initiatives as appropriate.

Irish Water undertook a specific analysis of the Dublin Water Supply Area in relation to its current leakage levels, a review of the initial targets Irish Water had set and a development of a SELL target. The results of this review are as follows:

The SELL target, based on current costs and benefits, is a reduction of approximately 40 megalitres per day. This would require an investment of €116million over 5 years to achieve this, in addition to investment required to maintain leakage levels, i.e. operational activities and main replacement. Past this point, it is difficult to economically justify continuing to reduce leakage, however Irish Water's conservation and sustainability values aim to reduce leakage to achieve a total reduction of 63.9 megalitres per day, subject to ongoing economic re-evaluation and CER approval in future investment plans.

Going beyond 63.9MLD, the costs of leakage reduction per MLD increase exponentially, as do the costs of maintaining the network. At this point, the cost of leakage reduction approaches the cost of full network replacement (approx. 9,000 kilometres). E.g.

0MLD-15MLD = €111million (7.4€M/MLD)

15MLD-30MLD = €210million (€14.0M per MLD, Total €321m for 30MLD reduction)

It is this balance which Irish Water is seeking to maintain, ensuring that both solutions deliver the best value for money for our customers.

Note: Due to the lack of headroom in most water supplies zones and the long lead time for new source treatment development, intensified leakage reduction may be the only way in which Irish Water can respond to large point demands. Using leakage in the short term as the only means to

offset the yield deficiency in the Dublin Water Supply Area and Midlands region will seriously compromise Irish Water's long term ability to respond to new industrial demands.

CSL / LEAK ALARMS

At March 2016, the report to the CER on the Free First Fix Scheme identified 48.5 Mld of savings to date, 26 Mld of which was achieved in the Eastern & Midlands Region. If we assume that 80% of this was in the Dublin Water Supply Area, then almost 20.7 Mld of growing demand has already been offset by this excellent scheme, and value for money is clear from the report to the CER. This would mean that the CSL recovery projected for 2031 in the PNR has already been substantively achieved.

The returns from the scheme will diminish as the larger leaks are prioritised and resolved, but Irish Water will continue to work with customers to help them to conserve water.

LEAD TIMES

Lead times for abstractions, WTP construction and leakage reduction are long, typically 5 years from service provider appointment to completion of construction. Investment planning cycles are 5 years long, with investment submission preparation starting 2-3 years ahead of the formal submission and CER approval.

Rationalisation requires optioneering, based on hydraulic modelling including route selection and storage location identification. These models take time to build and assess, they also require reasonable certainty about the location of the strategic water resources.

In summary, detailed planning to achieve strategic objectives as a lead time of at least 10 years. To develop credible CIP 3 (2021-2026) and CIP 4 (2026-2031) investment plans, a degree of certainty around the WSP is required now and without which, the plans can only develop in a somewhat ad-hoc manner.

BENEFITTING CORRIDOR SUMMARY

A detailed long term plan for the Midland region has been prepared, and is a continuing work-in-progress.

Although many of the short term and immediate quality related issues will have been dealt with in CIP 1 and 2, after 2025, the yield and treatment capacity deficiencies emerge again. Already, there are indications that planned abstractions in Westmeath will not prove viable, where prudent risk

provisions, if added to the potential IDA demands could result in a 40MLD deficit in the medium term by 2026. This is comparable to over 2/3 of the leakage in the midland region, a volume that cannot be compensated by water conservation measures. Other untapped sources, such as the Portlaoise aquifers (additional 10-12MLD) are required to meet growth and rationalisation demands and are at risk from any constraints that the new abstraction licencing regime may impose, as are any of the current abstractions in the region.

The 2 main strategic options for the Midland region are:

- Continue to expand source and production capacity at most WTPs, with limited rationalisation
- Secure existing abstractions and treatment capacity and use the WSPs to meet new demand and to provide resilience in the event of individual WTP failure. Also support significant rationalisation and long term OPEX reduction

Option 1 carries a large risk in the medium term as there is no guarantee that increases to abstractions will be approved. It also increases the risk in each WSZ, as each source and treatment plant remains a single point of failure. Option 2 carries a huge initial cost, but mitigates all the individual risks on each project and lowers the WSZ risk of service interruptions through the provision of a more resilient WRZ.

CIP 1: 2014-2016

CIP 1 2014-2016 concentrated on the continuation of leakage reduction (mostly mains rehabilitation) programmes and major capital upgrades to address specific water treatment issues such as Boil Water Notices (BWNs) and the Remedial Action List (RAL). Based on improved understanding of the asset need, during the 2014-2016 period, Irish Water substantially re-profiled the investment to increase the investment in programmes that reduced immediate public health risks e.g. small mains rehabilitation and disinfection programmes.

Following a review of the major capital projects, the process of rationalisation emerged, where the most economical way to address treatment risk was to decommission one or many WTPs (rationalise) through connection to a neighbouring WTP that has sufficient yield and treatment capabilities. In the Dublin Water Supply Area, where the majority of treatment issues had been dealt with in previous investments, the core focus was on maximising water conservation and resilience programmes.

CIP 2: 2017-2021

The majority of CIP 2: 2017-2021 is a carryover from CIP 1, but features more rationalisation and secures some of the strategic water supplies. It also has an increased focus on leakage, establishing Find and Fix and Water Network management capability to able to drive down leakage nationally by 200MLD by 2021.

2021-2050

CIP 1 Planning for the Midlands and Dublin Water Supply Area beyond 2021 has to start now – to avoid having to maintain two Midland strategic plans, one with and one without WSP. In order to avoid the total loss of strategic direction, the Water Supply Project – Eastern & Midlands Region is essential – most other regions in Ireland have a significant water source and their long term plans look reasonably secure. Without the Water Supply Project – Eastern & Midlands Region, its difficult to see how the needs of the Midlands region will be can be easily met.

APPENDIX: SCHEMES TO BE RETAINED OR CONSOLIDATED

Scheme to be retained or consolidated	Number of WTPs to be retained or consolidated
Clare	7
Feakle PWS	1
Flagmount PWS	1
Kilkeedy PWS	1
Killaloe PWS	1
Mountshannon PWS	1
O'Briens Bridge PWS	1
Scarriff PWS	1
Laois	26
Abbeyleix 1 PWS	1
Abbeyleix 2 PWS	1
Arles 2 PWS	1
Ballinakill 1 PWS	1
Ballinakill 2 PWS	1
Ballyroan PWS	1
Borris in Ossory PWS	1
Camross PWS	1
Coolenaugh PWS	1
Durrow 1 PWS	1
Graigucullen PWS	1
Lough PWS	1
Meelick PWS	1
Mountmellick 1 PWS	1
Mountrath 2 PWS	1
Mountrath 3 PWS	1
Mountrath PWS	1
Portarlinton 1 PWS	1
Portarlinton 2 PWS	1
Portlaois PWS	1
Rathdowney PWS	1
Reary WTP	1
Rosenallis PWS	1
SE Regional Scheme	1
Swan PWS	1
The Strand PWS	1
Louth	5
Collon	1
Drybridge	1
Kilineer	1
Rosehall	1
Staleen	1
Meath	4

Scheme to be retained or consolidated	Number of WTPs to be retained or consolidated
Danestown	1
East Meath	1
Hollymount	1
Woodview	1
Offaly	29
Banagher RWSS PWS	2
Birr PWS	1
Clara/Ferbane PWS	2
Clara/Ferbane RWSS PWS	1
Clonbullogue PWS	1
Coolbawn WTP (New)	1
Coolderry PWS	1
Daingean PWS	1
Dunkerrin PWS	3
Edenderry PWS	2
Geashill PWS	1
Kilcormac PWS	1
Kinnitty PWS	1
Moneygall PWS	1
Mountbolus P.W.S.	1
Rahan - Agall/Hollimshill P.W.S.	1
Rahan - Tully P.W.S.	1
Rhode PWS	1
Shinrone/Brosna PWS	2
Tullamore PWS	3
Walsh Island PWS	1
Westmeath	3
Athlone WSS	1
Ballany High Level Reservoir	1
Frewin Hill High Level Reservoir	1
Wicklow	31
Aughrim Annacurra Public Supply	1
Avoca Ballinaclash Public Supply	1
Ballinglen (Preban Bridge)	1
Ballinteskinn Public Supply	1
Ballycoog Public Supply	1
Ballymorris 3	1
Ballymorris Public Supply	1
Baltinglass Public Supply	1
Barndarrig Public Supply	1
Dunlavin Public Supply	1
Glenealy Public Supply	1
Grangecon Public Supply	1
Hollywood Donard Public Supply	1
Killyballyowen (Annacurra) Public Supply	1
Killyballyowen (Aughrim) Public Supply	1
Kirikee Public Supply	1

Scheme to be retained or consolidated	Number of WTPs to be retained or consolidated
Knockanarrigan Davidstown Public Supply	1
Knoxtershill	1
Lacken Public Supply	1
Laragh Annamoe Public Supply	2
Loughmogue (Dunlavin)	1
Mullans North	1
Rathdangan Public Supply	1
Rathdrum Public Supply	1
Redcross Conary Public Supply	1
Roscath	1
Roundwood Public Supply	1
Stratford Public Supply	1
Valleymount/Ballyknockan Public Supply	1
Wicklow Regional WSS	1
Grand Total	105

