The Story of Ireland's Water

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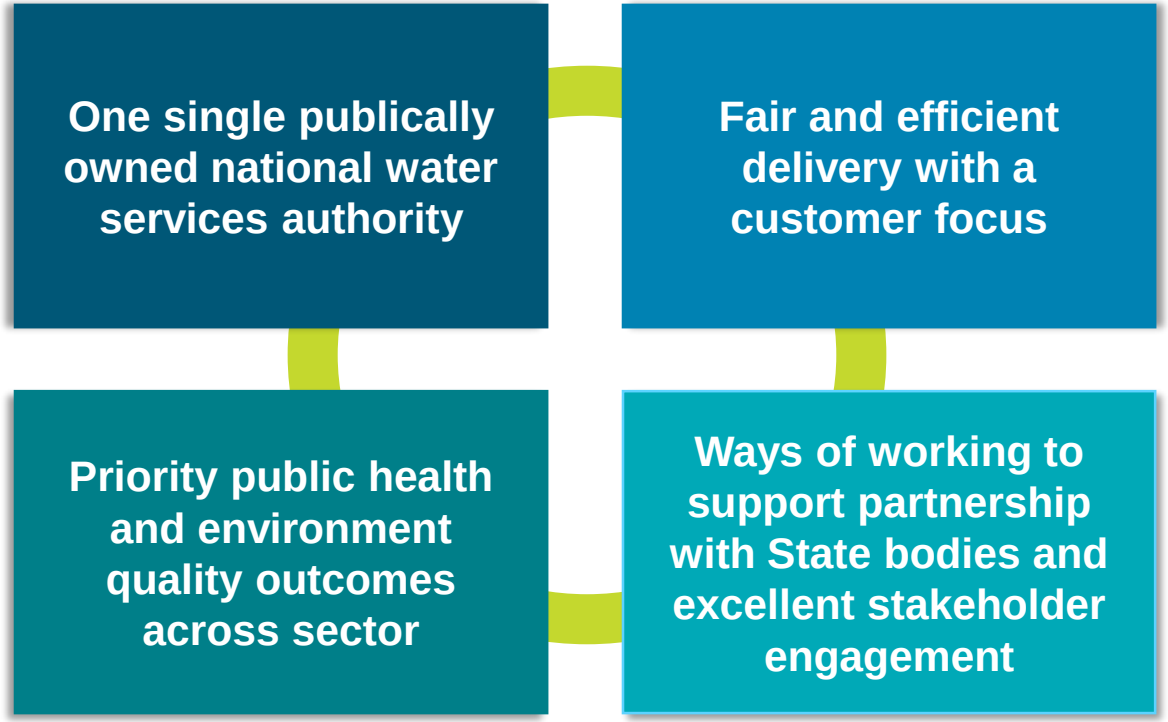
John O'Donoghue

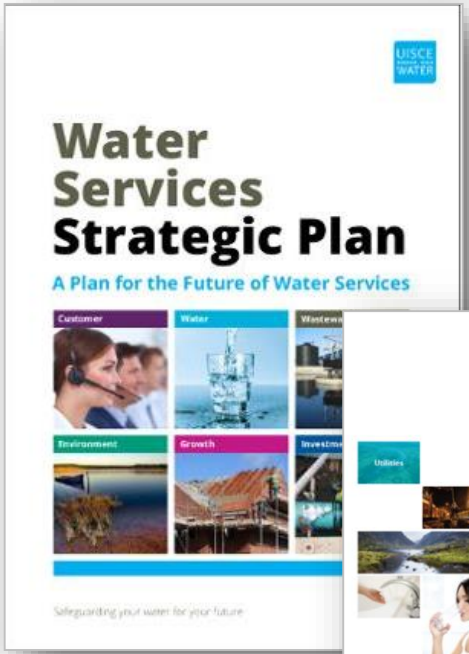
Everyone who works in the water services industry today is working towards the same vision for Ireland's water services

- Clean, safe drinking water for everyone, to the same consistent standard
- Return wastewater safely to our environment
- Protect our environment
- Enable economic and social development

Water Services Policy Statement focuses on 4 Key Principles



Government policy on water is very clearly defined and mirrored in all Irish Water policy documents

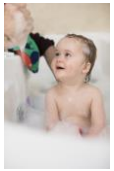


25 Year Strategic Plan

7 Year Business Plan

We currently deliver 1.7 billion litres of treated water every day...

..to Irish homes



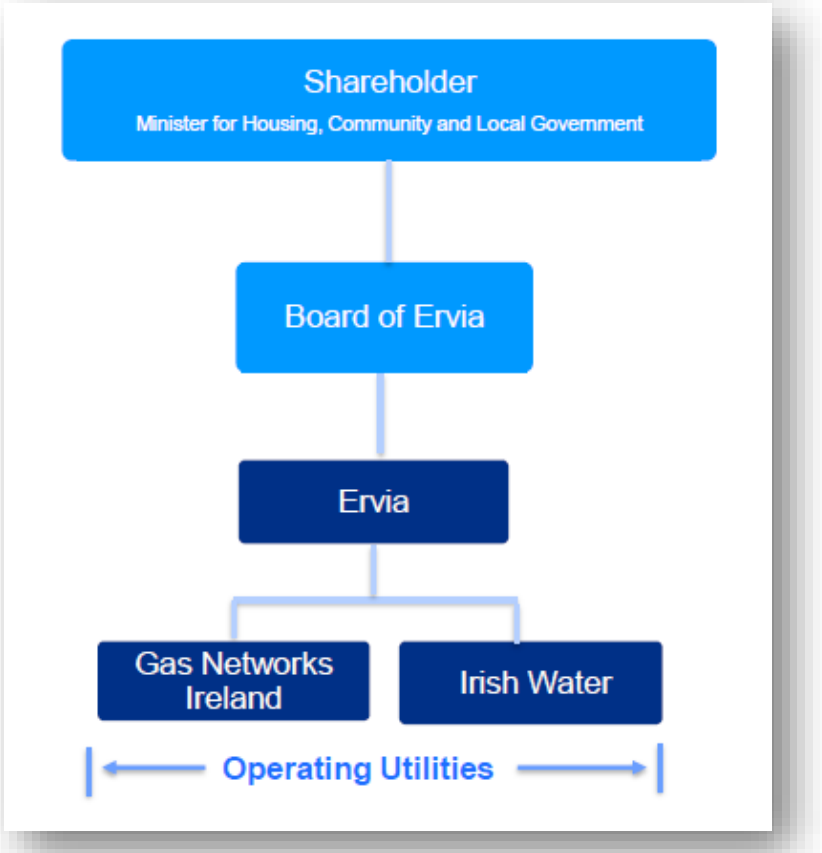
..and Irish businesses

…managing over 7,000 individual assets, many of which are not fit for purpose…

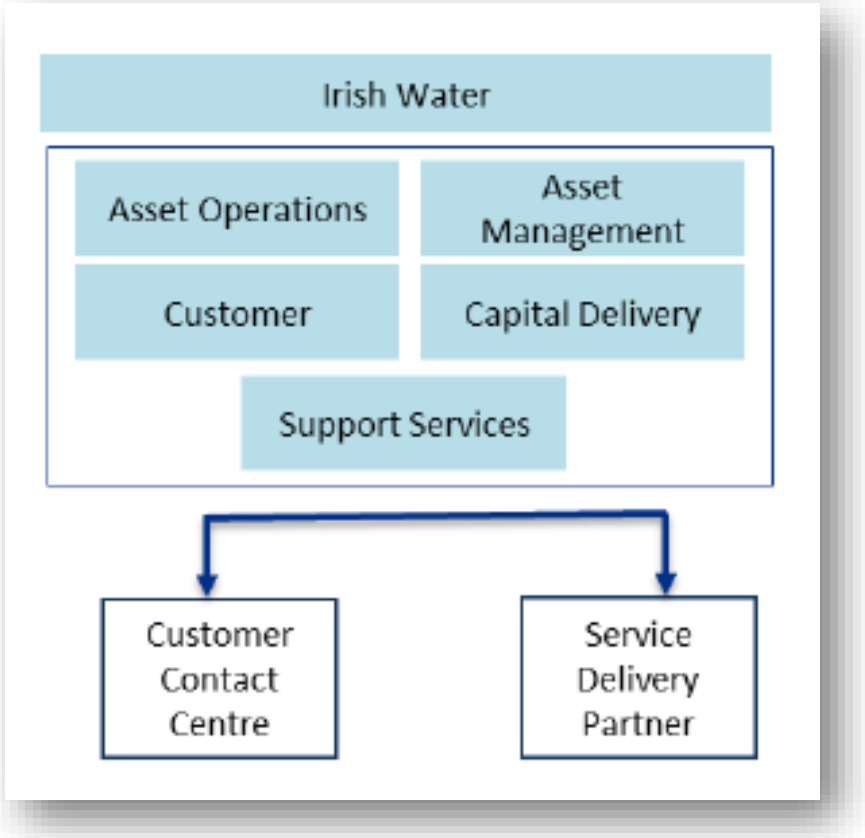
…with 88,000km of water and wastewater pipe to manage 24/7, including leaks…

…while Ireland's demand for water services is growing significantly

This is how we are structured…



…and this is how we currently operate…

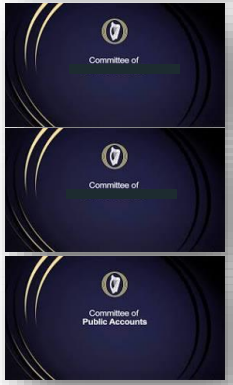


…with extensive and important oversight bodies…

An Roinn Tithíochta, Pleanála agus Rialtais Áitiúil
Department of Housing, Planning and Local Government

An Roinn Caiteachais Phoiblí agus Athchóirithe
Department of Public Expenditure and Reform

NewERA



Joint Oireachtas Committee on **Housing Planning & Local Government**

Joint Oireachtas Committee on **Future Funding of Water Services**

Committee of **Public Accounts**

An Roinn Cultúir, Oidhreachta agus Gaeltachta
Department of Culture, Heritage and the Gaeltacht

National Parks & Wildlife Service

CRU An Coimisiún um Rialáil Fóntais
Commission for Regulation of Utilities

epa Environmental Protection Agency

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Iascach Intíre Éireann
Inland Fisheries Ireland

National Water Forum

AN FÓRAM UISCE

An Coimisinéir Faisnéise
Information Commissioner

Coimisiún um Chaighdeáin in Oifigí Poiblí
Standards in Public Office Commission

Coimisiún Cosanta Sonraí
Data Protection Commission

…and staff based around the country…

East/Midlands Region	Dublin City
	Mullingar
West/North West Region	Castlebar
	Cavan Town
	Donegal Town
Southern Region	Mallow
	Limerick City
	Kilkenny City

…to deliver Irish Water Business Plan's key objectives

How we prioritize investment

- We use **operational information** to help to decide when and where to upgrade pipes and develop infrastructure.

- This is based on **risk assessment** which looks at :
    - the condition of the asset, its age and pressure;
    - the scale of customer impact such as number of people affected, if big businesses or hospitals are on that network; and
    - supporting social and economic growth.

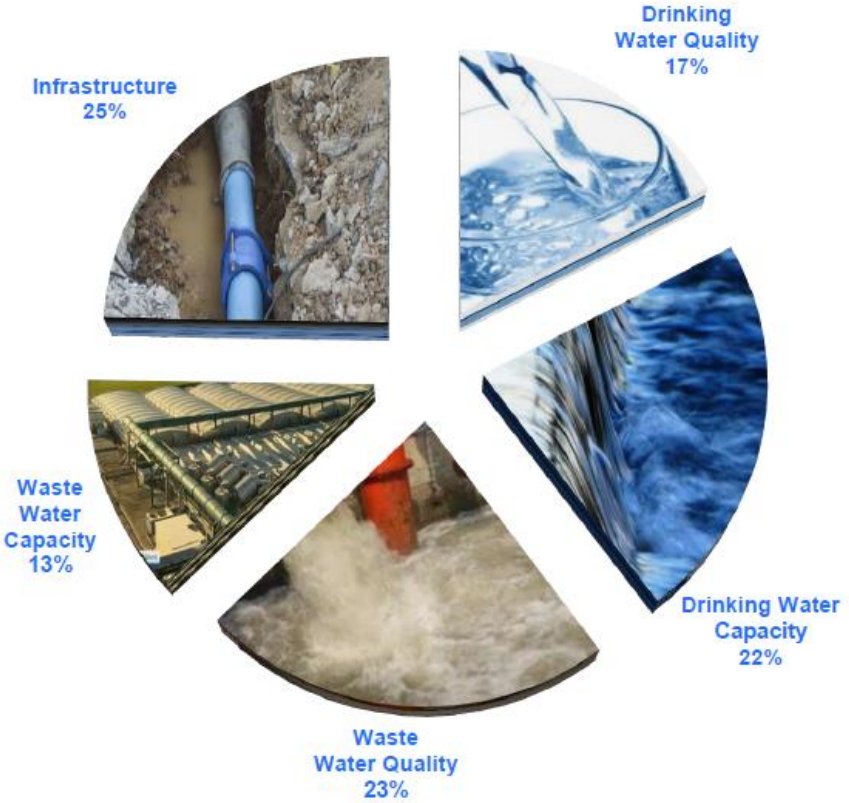
- The overall **scale of funding** is a matter for government having regard to the assessment of needs by Irish Water.

We have estimated it will take many investment cycles to address our water and wastewater issues

€13.5bn	• **Multiple investment cycles**
2014-2021 **€5.5bn**	• **Short-term**
2022-2027 **€4.5bn**	• **Medium-term**
2028-2034 **€4.0bn**	• **Long-term**

Between 2014-2021, we will invest as follows to address the most urgent issues

Capital Investment Plan to 2021	
Drinking Water Quality	€950m
Drinking Water Capacity	€1,250m
Waste Water Quality	€1,250m
Waste Water Capacity	€700m
Infrastructure	€1,364m
Total	**€5,514m**



2014-2016, we have already invested €1.7 billion

…and this is how Ireland has benefitted to date

Drinking Water

- Boil Water restriction lifted from 145,000 people
- 70 reservoirs cleaned and refurbished
- 840km of new or replaced mains, further 1,000km targeted
- 9 new water treatment plants delivered, 18 upgraded
- 247 Pressure Reduction upgrades reducing leakage
- 880,000 domestic meters installed

Waste Water

- 32 waste water plants upgraded and 27 new plants built
- 350 flow monitoring and sampling sites upgraded
- 436 Plant Optimisation audits and 2,000 improvement recommendations
- 25 priority source control projects to resolve wastewater overloading

Other Efficiencies

- 600 disinfection plants assessed and works commenced
- Over 10,800 Urgent H&S addressed
- 73 Energy Reduction Schemes

These are our continuing Strategic Priorities to 2021

Capital Maintenance (Asset Replacement)

Sewer Flooding

Water Pressure

Water

- Microbiological (BWN & BWN Risk)
  - Lead
  - Remedial Action List (RAL)
  - Trihalomethanes (THMs)

Wastewater

- ECJ / UWWTD Treatment
  - 44 Locations (2014) with no treatment
- Licence Compliance

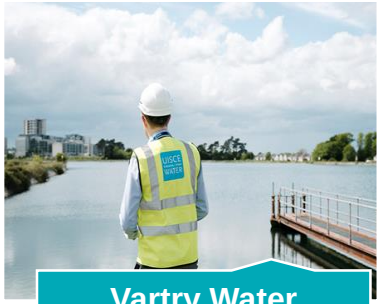
Reduce Leakage

Resilience & Headroom

Efficient provision for Growth (Housing)

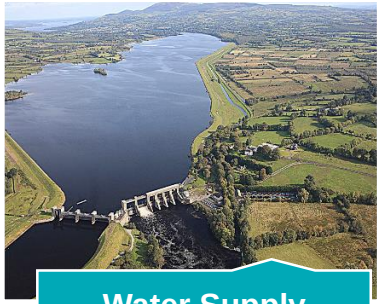
We are making significant investment in large scale critical infrastructure

Ringsend Wastewater Treatment Plant



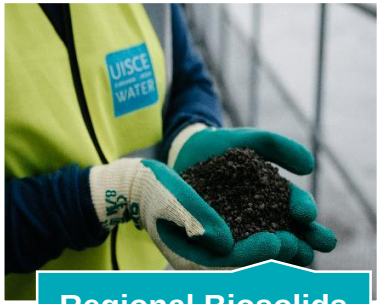
Vartry Water Supply Project

Cork Lower Harbour Main Drainage Scheme



Water Supply Project.

Greater Dublin Drainage Scheme

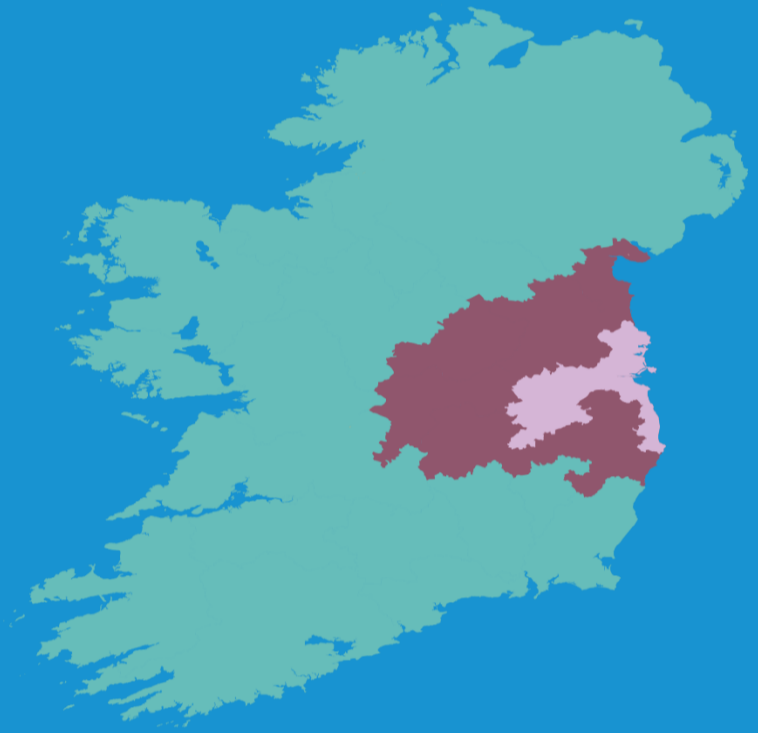


Regional Biosolids Storage Facility

Headroom in the Greater Dublin Area

Part of ervia group

By 2050, our population will grow by 1.2 million and with it, increased demand for water

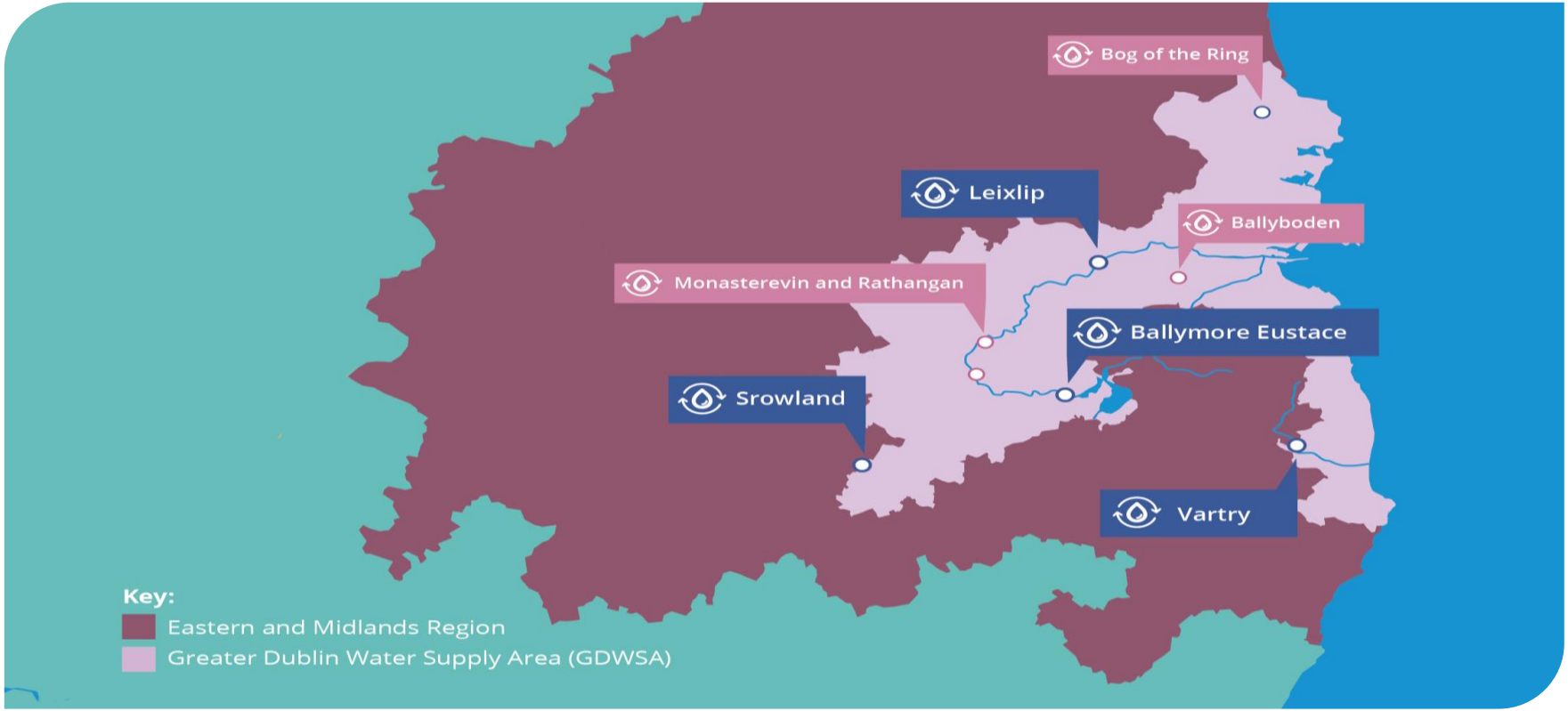


		2016 Census	2050 NPF
01	Dublin Region WSA (Dublin City & County)	1.6m	2.2m
02	Midlands Benefiting Corridor	534k	657k
03	Rest of the State	2.5m	3.1m
	Total State Population	**4.7m**	**5.9m**

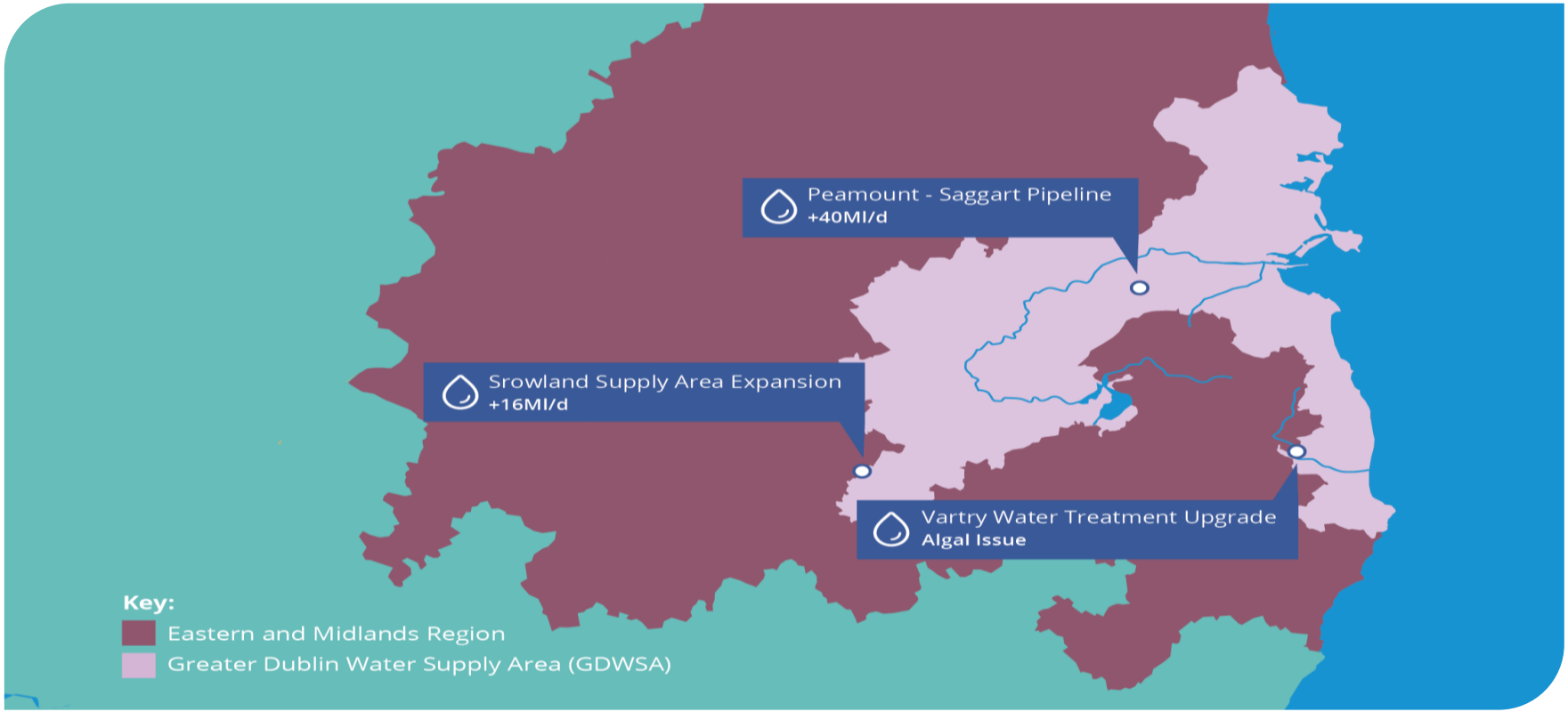
90% Kildare, 60% Wicklow and 10% Meath are also in Dublin Region WSA

Key:
- Eastern and Midlands Region
- Greater Dublin Water Supply Area (GDWSA)

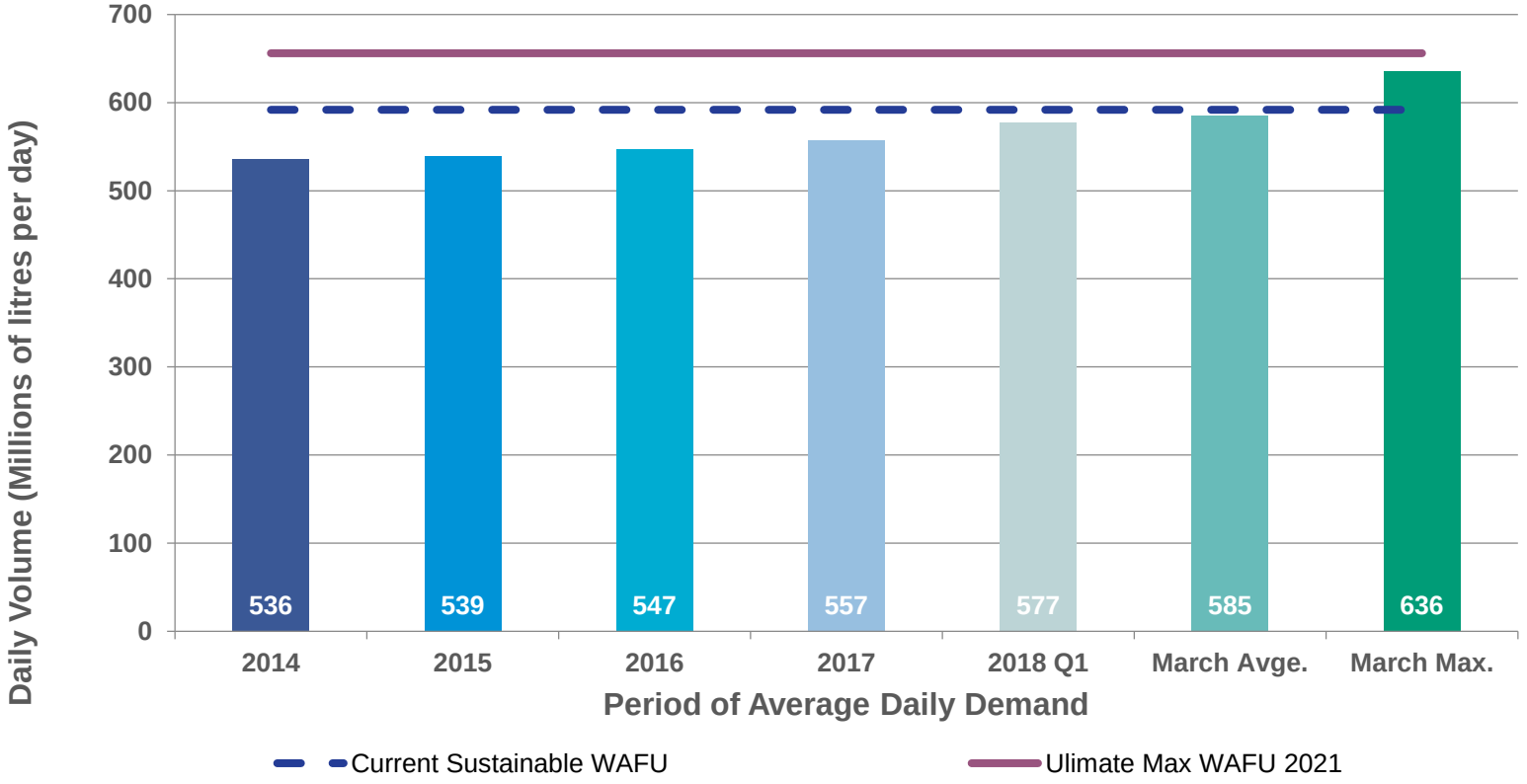
Today we can produce a maximum of 598 Ml/d from 7 sources – while on an average day we consume 579 Ml/d



We are delivering projects now to provide up to 656 Ml/d by 2021 – but that is the limit of existing sources



Demand is growing and has already outstripped supply

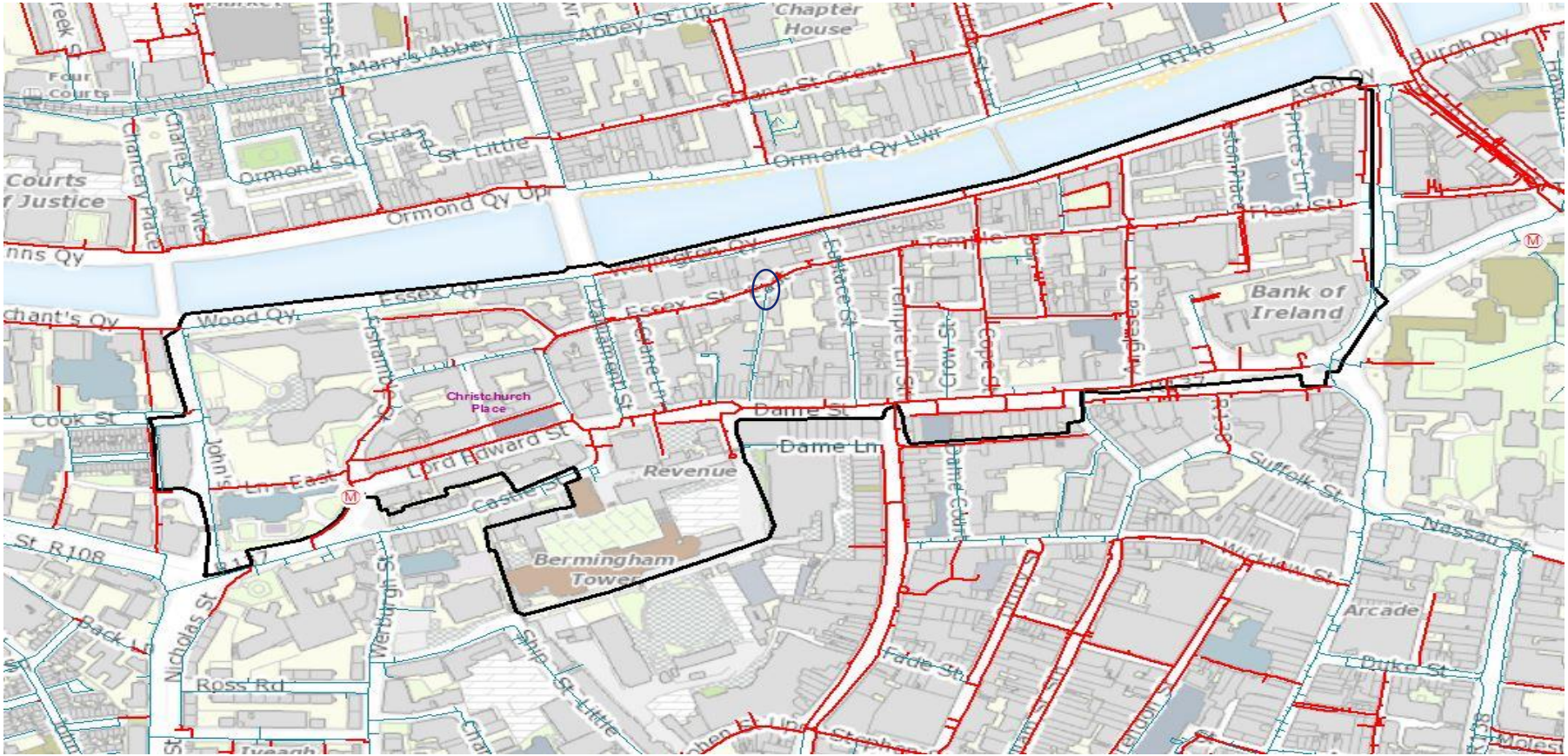


Reducing leakage alone is not sufficient

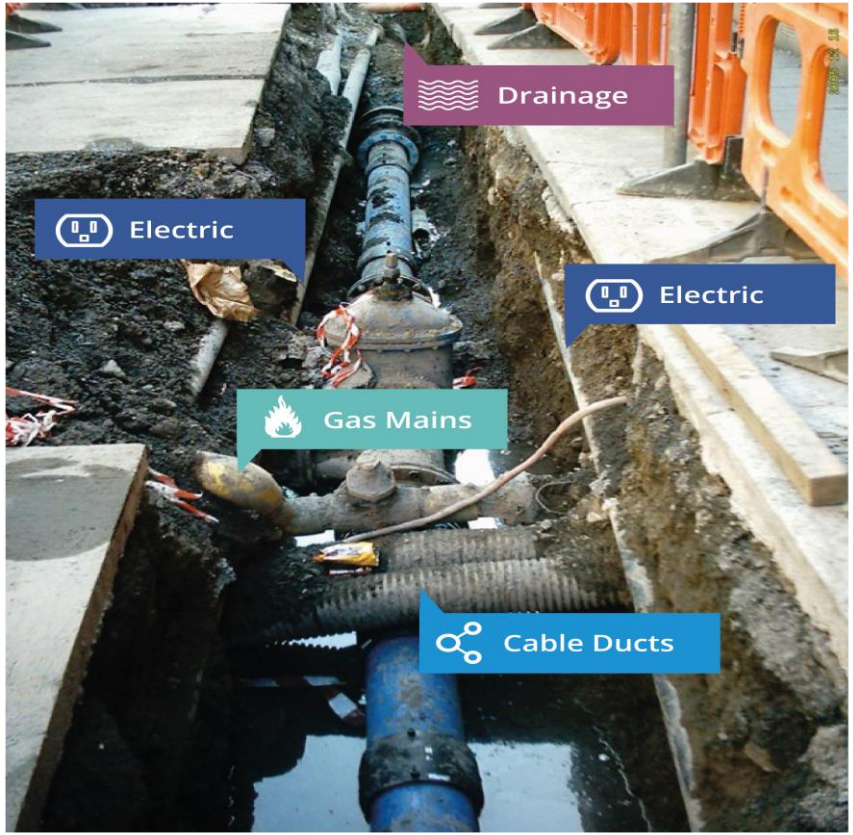
Current Network Leakage is

207 Ml/d

9,000 km of complex pipe network in Greater Dublin Area



Replacing 1 km of pipe means 1,000 customers will experience restrictions/outages for up to 6 weeks



Due to service congestion, **hand digging was required**

Irish Water have a strategic approach to tackling our serious leakage challenge

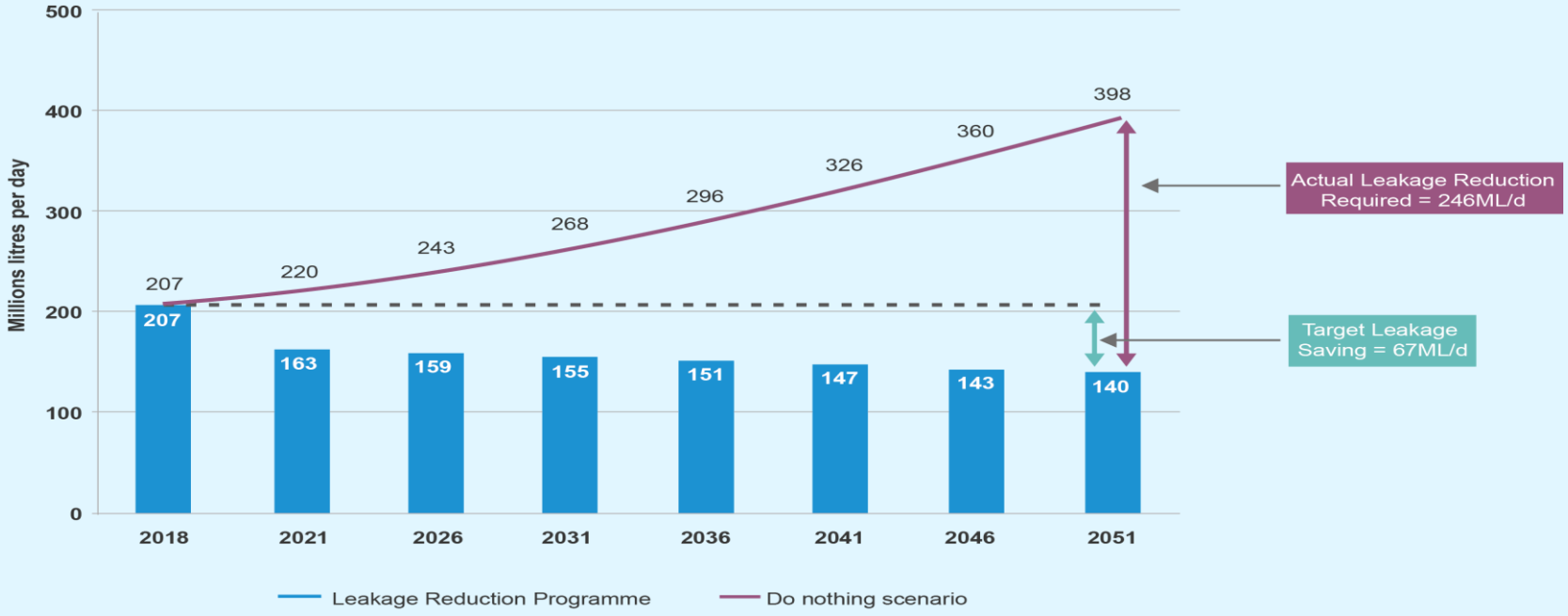
Metering Programme
60% meters in place nationally (about 45% in GDA)

District Metering Areas
(DMAs) - over 750 in GDA

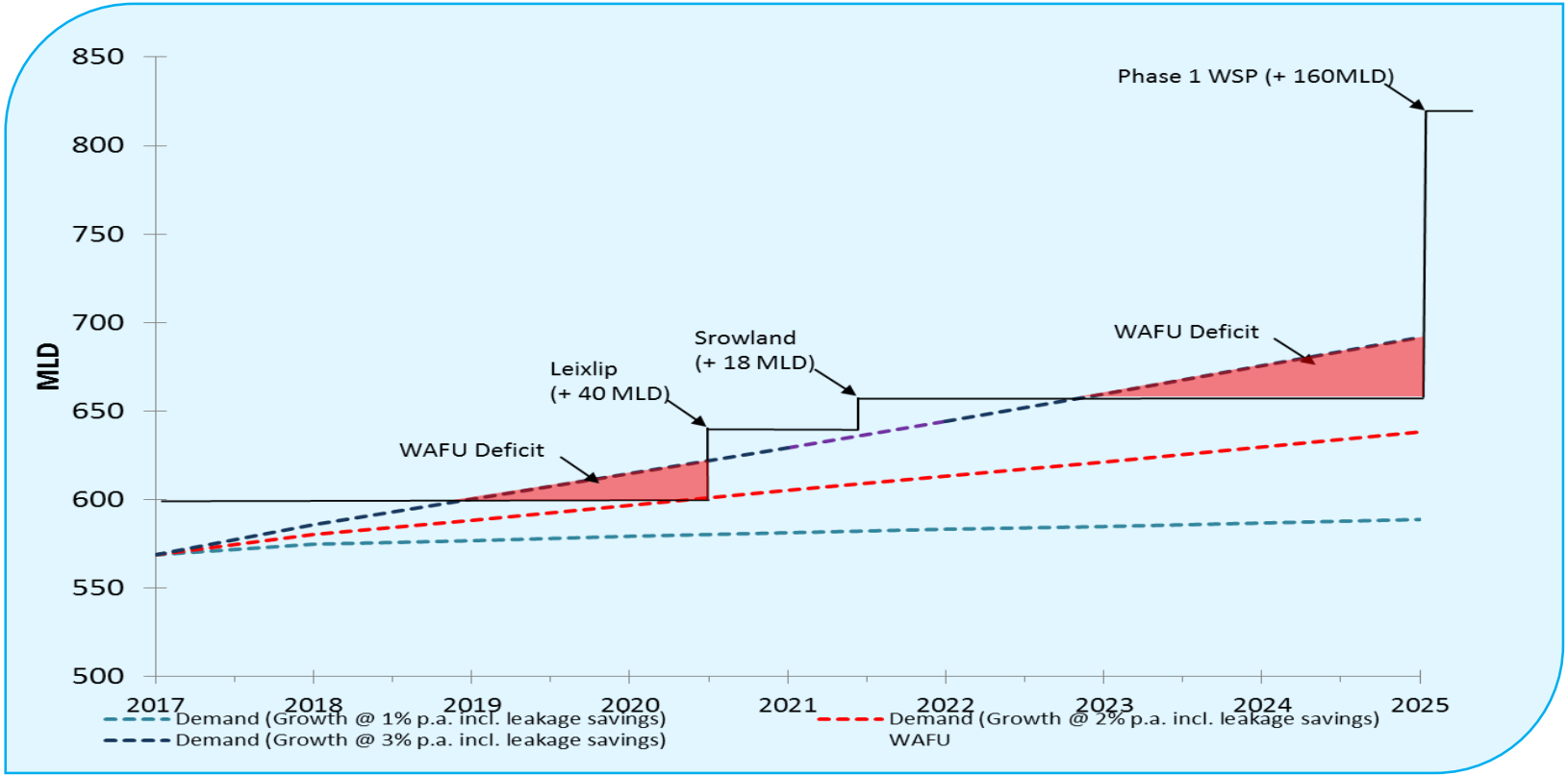
Leakage Management System - mid 2018

Find & Fix
Contractors now mobilised in support of in-house crews for capital programmes

By 2050 leakage will be reduced to 140 Ml/d despite major network expansion



We have an urgent need for a new water supply



We also have real supply challenges across the Eastern and Midlands Region

Solution: A New Water Supply Source for the region

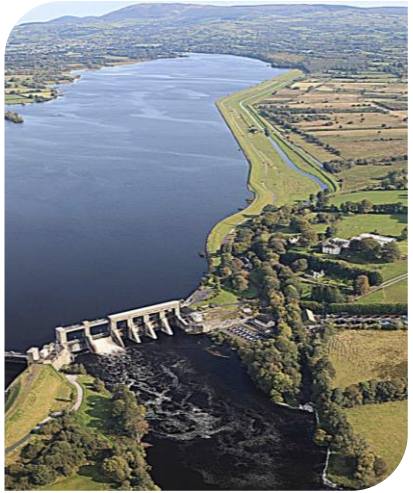
Benefits for the region

This new water source will address the serious water supply deficit across the region

It will deliver social, economic and environmental benefits across the entire region

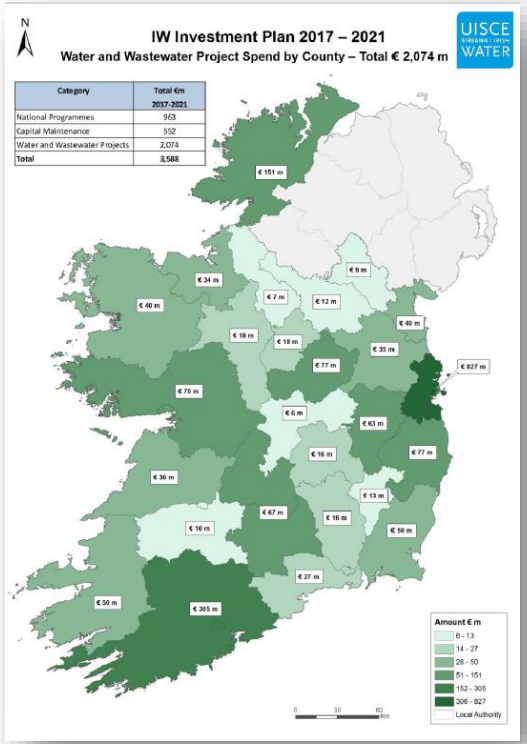
It will augment and diversify water supply sources and strengthen their connectivity to provide a secure and reliable water supply

It will have no impact to current levels and flows on the River Shannon, Lough Derg and Parteen Basin.



Irish Water in the Dublin & Midlands Region

Water and Wastewater Project Spend



Category	Total €m 2017-2021
National programmes	963
Capital Maintenance	552
Water and Wastewater Projects - Estimated total spend 2017-2021 • ***Of which estimated spend in East and Midlands is €1,141m***	2,074
Total	3,588

Water Activities in the East & Midlands Region

Water Quality

72 Schemes on Qtr1, 2018 RAL nationwide
17 Schemes in East & Midlands serving 290,450 population
Irish Water target is for 13 schemes on RAL end 2018, 8 Schemes on RAL end 2019 and 0 schemes on RAL end 2020

Leakage Reduction

National Leakage Reduction Programme (launched 2017)

Water mains replacement underway in counties Kildare, Laois, Longford, Offaly, Westmeath, and in Dublin, we are replacing aging water mains in Cabra, Chapelizod, Crumlin, Drumcondra, Glasnevin, Howth, Rathgar & Stoneybatter. We are replacing public lead connections in Louth.

First Fix Scheme: (30/06/2017)

43,174 customer notifications issued in East & Midlands
47.73 million litres of water saved every day in region

National Programmes

National Disinfection
Reservoir cleaning
Dam inspections
Process Optimisation at treatment plants

Waste Water Activities in the East & Midlands Region

Waste Water Quality

Irish Water is progressing priority projects to address the agglomerations in your region that are currently discharging wastewater without treatment. These include:

- ***Dublin:*** Rush
- ***Louth:*** Omeath
- ***Wicklow:*** Arklow

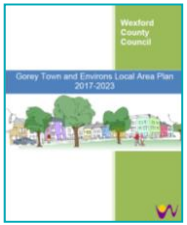
National Programmes

Process Optimisation at Wastewater Treatment Plant
Critical Sewer Survey Programme
National Wastewater Sludge Management Plan

Sample Projects

Ringsend WWTP, Greater Dublin Drainage, DLR SS network upgrade, Ballyboughil WWTP, Balbriggan/Skerries SS, Upper Liffey Valley SS, Ballymahon WWTP, Ardee SS, Carlingford WWTP, Stamullen WWTP, Enfield WWTP, Edenderry WWTP, Athlone SS, Monksland WWTP, Arklow SS, Blessington WWTP, Baltinglass WWTP.

Other Activities in the East & Midlands Region

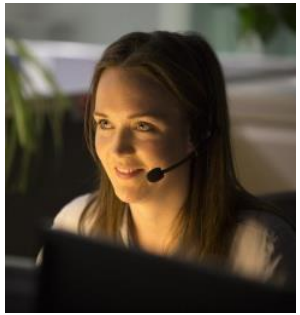


Supporting Regional and County Development

Supporting Regional Spatial and Economic Strategies (to be finalised in 2018) as well as ongoing reviews of County Development Plans and Local Area Plans

Supporting Customers

Contact centre available 24/7 365 days – 76% first contact resolution
Customer Charters – set service levels
Vulnerable Customer register and services
Non-domestic customers transferred
New connections policy
New Connections and Developer Services with regional support
Non-Domestic Tariff Framework Review underway by CRU



Supporting Incidents and Outages

Executing National Emergency Plans with the LAs during Storm Ophelia and Storm Emma
Average week – 140 reported outages by LAs, with approx. 45,000 premises affected. Burst mains highest driver of outages
Staleen incidents

Staleen: Expediting the solution

The issues

- Fragility of rising main serving Staleen WTP with frequent bursts
- Ageing distribution network with high leakage level
- Water treatment plant at risk of failure to comply with all requirements of the drinking water regulations.

The solution

Integrated programme of works to tackle the problems within the entire supply area:

- Replacement of Rising Main serving Staleen WTP
- Upgrading the WTP
- Upgrading the Roughgrange Pumping Station
- Network improvements to water main in Ratoath
- Replacement of existing water main from Duleek to Windmill Hill Reservoir
- Upgrade to Cushinstown pump station

The Supply

- Serves population of c.90,000 in Drogheda, South Louth and East Meath area.
- Comprises an abstraction from the River Boyne, a raw water pump station at Roughgrange, a treatment plant at Staleen and storage reservoirs at Donore.
- 3 Water Supply Zones (South Louth & East Meath, Kiltrough / Bettystown and Ashbourne / Ratoath) supplied via 4 supply routes

Example projects in East & Midlands Region

Thank you for your time

Questions?