

Water Services Training Group

19th Annual Conference

Optimising Services Delivery in the Water Industry

Radisson Blu Hotel Sligo, 3rd September 2015



Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

Optimising Services Delivery in the Water Industry

Asset Management Approach to Interim
Revenue Control (IRC2)
2017-2018/2021

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Environment, Community and Local Government

Irish Water Asset Management Context

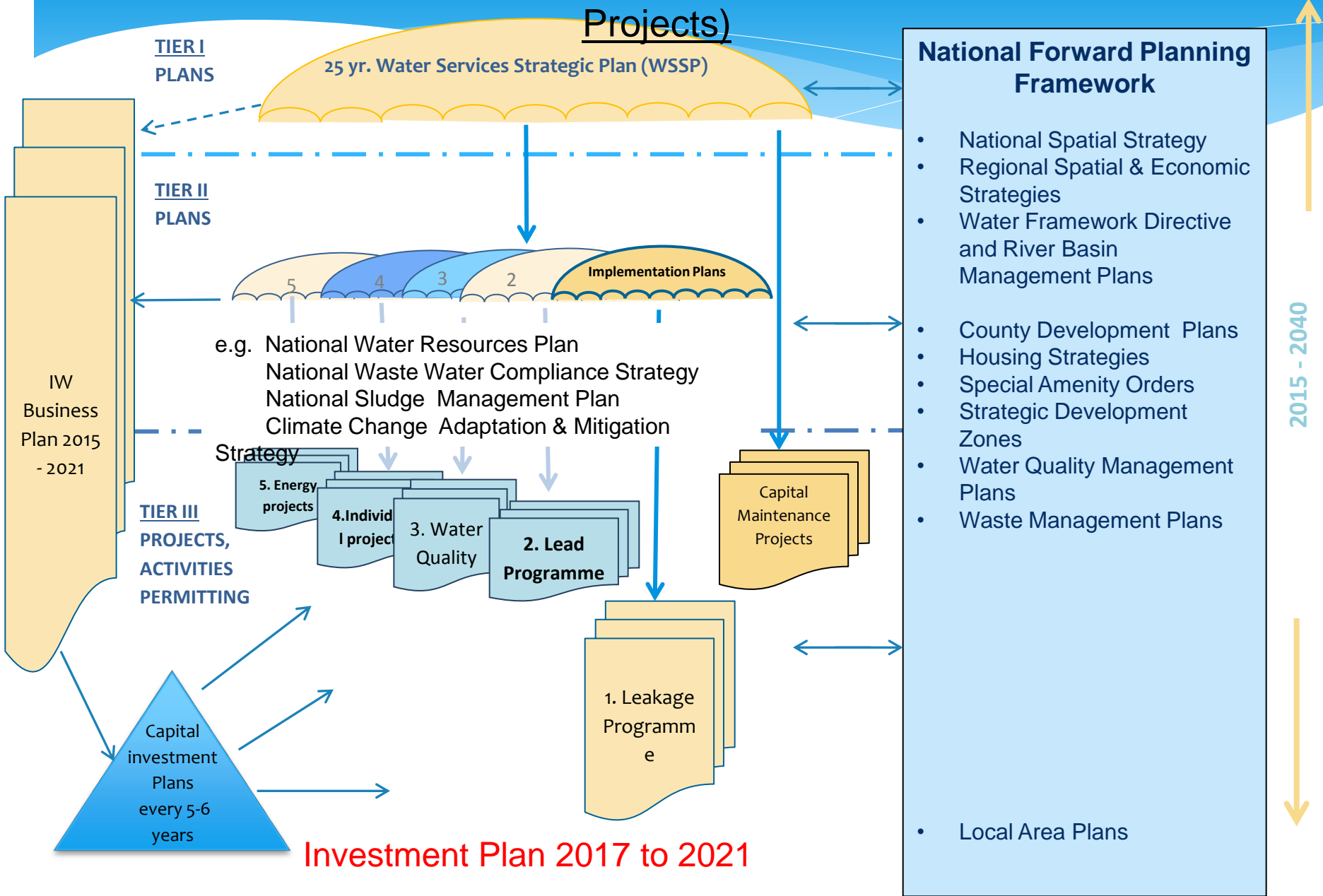
Key Objectives

- * Align Investment Plans with Strategic Plan goals
- * Evidence based decision making using best data available
- * Focus on value delivered (outputs per €) – utilising best ‘totex’ options
- * Recognise maintenance needs and capital dependency for O/M savings
- * Plan Balancing for priority projects & programmes
- * Focus on Programme Delivery for efficiency & consistency
- * Common standards & integrated operations processes and procedures

High Level Numbers

- * Serving 3.3 Million people
- * Water Supply output 1.6 B litres per day
 - * 856 treatment plants
 - * 60,000 km of mains & growing !!
- * Wastewater – over 1,000 plants
 - * 21,000 km of public sewers
 - * Not counting ‘taking in charge’ assets

WSSP – Sets Overarching Framework for IW Tier 2 Plans (& Tier 3



Delivery of Tier 2 Strategies

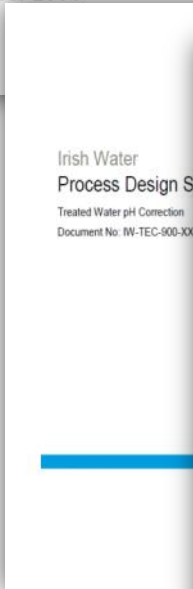
| Title of Plan/Strategy | Estimated Date Available | Link to 25 Year Plan |
|---|--------------------------|----------------------|
| National Water Resources Plan | Q3 2017 | WS1a |
| Drinking Water Safety Plans Plans for 135 water supply zones (WSZ) Plans for the remaining WSZ | Q1 2016 Q1 2021 | WS1b |
| THM & Pesticides Strategies | Q3 2017 | WS1f |
| Water Treatment Sludge Management Strategy | Q3 2017 | EN3c |
| Lead in Drinking Water Mitigation Plan | Q1 2016 | WS1e |
| Wastewater Compliance Strategy | Q3 2017 | WW1a |
| National Wastewater Sludge Management Plan | Q4 2015 | EN3b |
| Climate Change Adaptation and Mitigation Strategy | Q2 2016 | EN1c |
| Corporate Waste management strategy/plan | Q4 2015 | EN3a |
| Sustainable Energy Strategy | Q3 2015 | EN1b |

Standardisation- Policies & Standards

Water Technical & Environmental Forum



- * Irish Water Works Specifications
- * Irish Water Standard Details
- * Asset Registers & Critical Assets Defined
- * GIS, Network Models, RAMS (Telemetry)

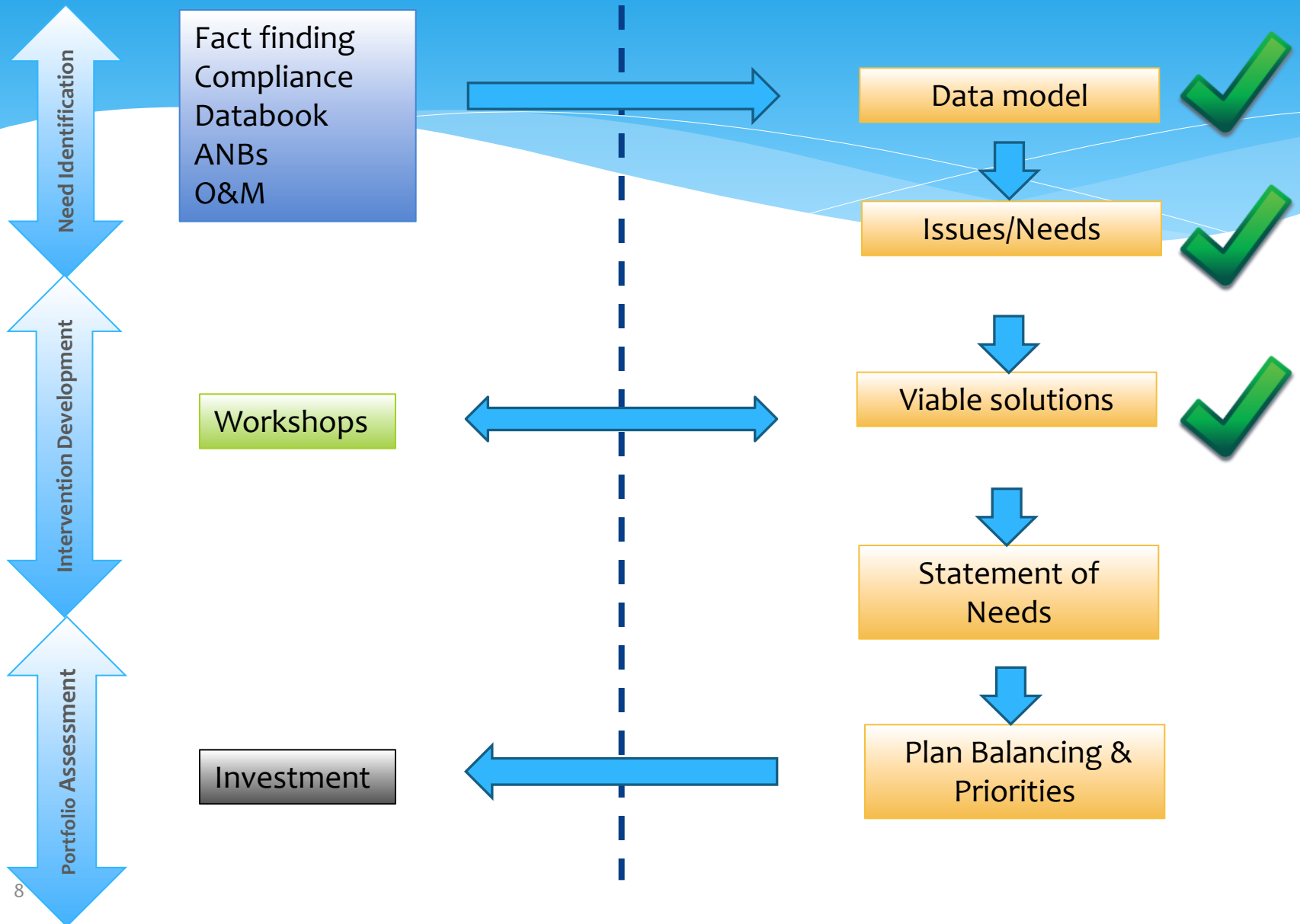


- *Single Way of Working*
- *Simplified training*
- *Simplified documentation*
- *Simplified maintenance*
- *Simplified workplans*
- *Faster & Cheaper Delivery*

IRC2 – Project Objectives

- * Development of the Investment Plan (2017 – 2021)
- * Interim Revenue Control 2 – IRC2 (2017 - 2018)
- * Targeting:
 - * Evidence based approach to support investment to meet customer and environmental objectives;
 - * Asset Condition and Performance assessment based on IW Asset Policies and Strategies;
 - * Managing known risks to service quality and reliability;
 - * Taking into account IW Strategic Objectives; and
 - * Ensuring Key Stakeholder and Customer Engagement;

Building case for investment



High Level Investment Drivers

- * **Quality (Q)** – National approach to meeting drinking water quality and environmental compliance e.g. Boil Water Notices, RAL List, UWWTD
- * **Base (B)** - investment on maintaining the current level of performance – Capital Maintenance to maintain service standards
- * **Enhancement (E)** – investment to provide an improvement in service performance e.g. resilience reducing interruptions to supply
- * **Growth (G)** - investment to maintain the current level of performance when growth and new development occur during the planning horizon

Quality Enhancement Challenges

* Water Supply

- * Microbiological risk (crypto, E Coli barriers & Source protection)
- * THM challenge & EU Infringement Pilot (Treatment & Information)
- * Lead in Drinking Water Mitigation Plan
- * Network issues (discoloration, lining or replacement)
- * Waterworks sludge management (Waste compliance)

* Wastewater

- * Basic UWWTD (44 plants including Arklow, Youghal, Cobh)
- * Higher Standards – Sensitive receptors
- * License compliance (phased upgrades & WFD RBD alignment)
- * CSO & Collection Upgrade – major programme of DAP studies
 - * Need to agree assessment & design methodology (balance benefit & cost)
- * ‘Taking –in – charge’ agenda & remediation (scope under review)
- * Storm water & infiltration – requires reliable network models
- * Sludge treatment, re-use and disposal (Energy optimisation)

Capacity & Customer Service

* **Water Supply**

- * Provision for growth (Headroom targets at 15-20%)
- * New Connections (Extensions & Upgrades)
- * Leakage targets Nationally & GDA region
- * Pressure deficits require full network modelling
- * Taking in Charge – Group Schemes

* **Wastewater**

- * Significant network bottlenecks
- * Treatment headroom challenge (address all parameters)
- * Property Register at risk of flooding (Models & Attenuation Plans)
- * Role re TIC & Group Sewerage Schemes – rural development

Asset Maintenance & Minor Programmes

Irish Water estimates €200-250M annually required:

Current Programmes:

Water Networks

- * Supporting Water Conservation Objectives

Water Quality & Efficiency (Plant Maintenance) examples:

- * National disinfection programme
- * Coagulation control
- * pH control & optimisation
- * Energy reductions

Wastewater & Sludge Treatment (Plant Maintenance) examples:

- * Flow control
- * Load monitoring
- * Effective operation of screens
- * DO control and energy monitoring

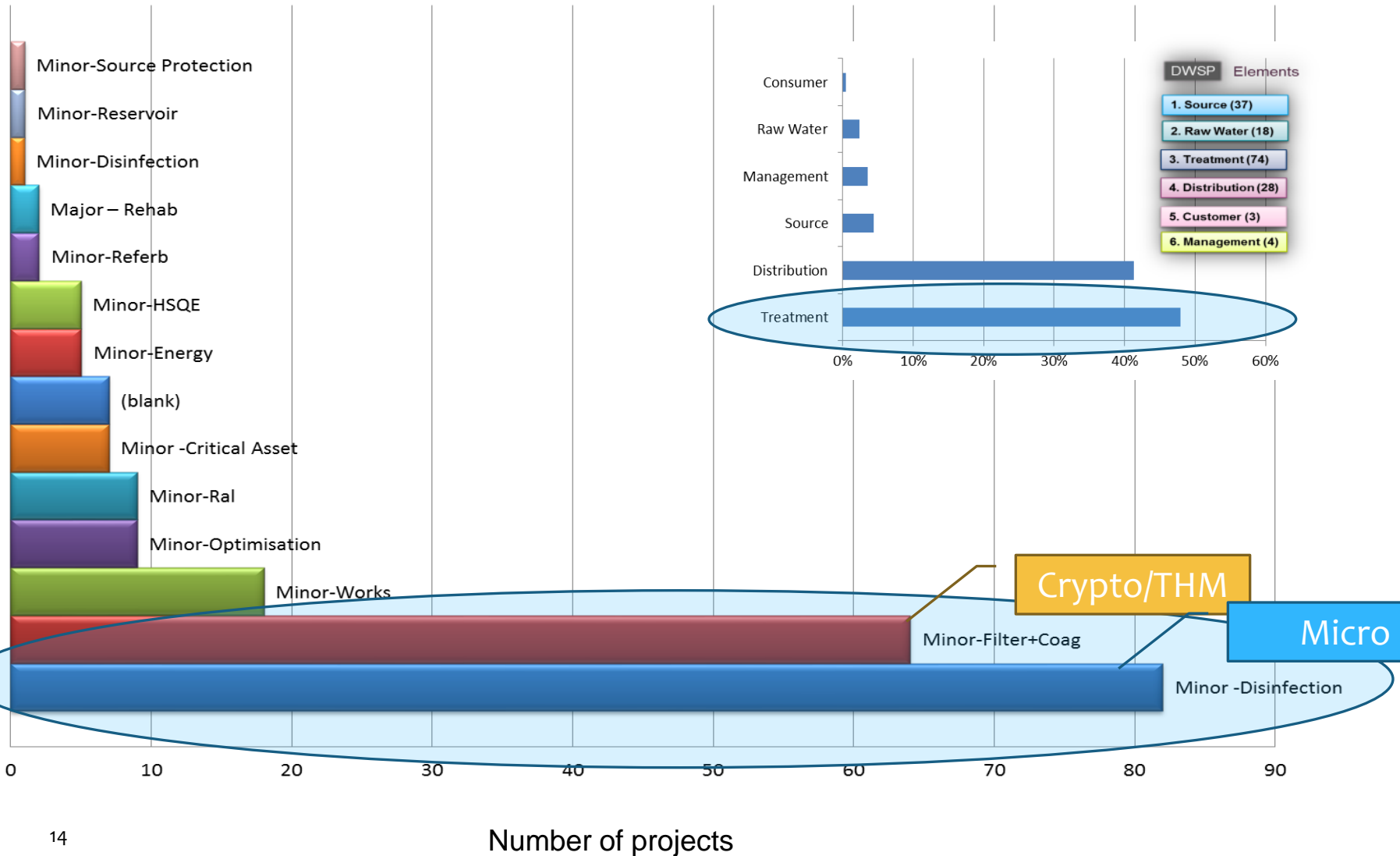
EU Comparisons – Asset Maintenance in Water Services –Where do we stand ?

Roberto Zocchi, EurEau, 19th March, 2015;

- * EU Tariff Range - €120 (Italy) - €800(Denmark) with varying tax input
- * Varying compliance with financing towards EU WFD Principle (Article 9)
- * EU Countries mostly do not recover environmental & resource costs
- * High variation in compliance with UWWTD across EU
- * **Key Question – Are we properly maintaining water services assets for future generations – or building a deficit to be funded in future??**
 - * England & Wales – asset spend is about €96 per head per annum
 - * France spends €88 per head; Germany about €80 but all from different base case
 - * Scandinavian countries invest €120-130, but Italy has only been spending €29.
- * **Key lessons from review of Italian experience in 2011**
 - * Lack of strategic approach – problems in system left unresolved
 - * Lack of customer communication or understanding of issues
 - * Lack of authority of Regulators – Leads to short term planning

“Maintenance Holiday is an expensive short term approach to Water Services”

Minor Programmes: Early Focus (Water)



Water Conservation Approach

DMA Infrastructure – Rebuilding the Foundations

Re-Establishing DMA Operability

Standardising Water Auditing & develop LMS

Develop Water Conservation Strategies

- Network Models – support Pressure Management & DMA's
- National and Regional Strategies (SELL)
- Network 'Find & Fix' & Customer Side Leakage

Mains Replacement – Burst History & Impact of Failures

Integrated approach to decision making

Customer Research & Stakeholder Input

Customer
Priorities
Research

Social &
Environmental
Valuation

Internal Costs
of Service

Risk Assessment

Deterioration
Modelling

Reliability /
Consequence
Modelling

Manual
Assessment
of Risk

Need Identification

Root Cause
Analysis

Intervention Generation

Intervention
Development

Cost
Modelling

Benefits
Valuation

Investment
Valuation

Priorities &
Targets

Scenario Planning

Business
Constraints

Plan
balancing

Risk Profiling

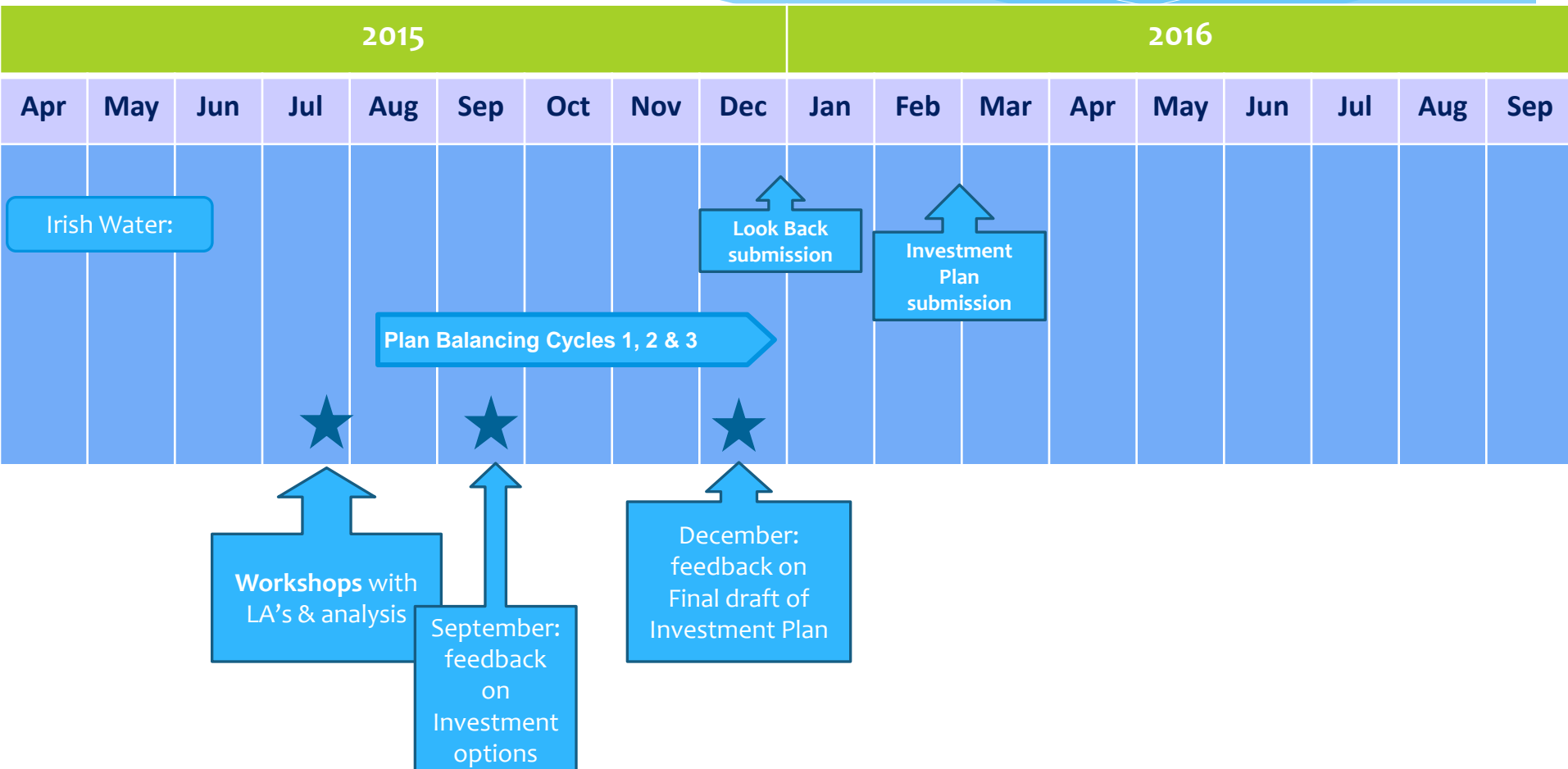
Optimisation

Investment
Plans

Financial
Targets

Service
Targets

Timeline for Investment Plan



Key Messages

- * Incremental improvement through **priority investment** targeted at driving best value outcomes
- * Investment must be coupled with **high quality operation of the assets** and **consistent maintenance** for service at least cost
- * Irish Water & LA's have a **common goal to improve services** and Asset Management process can support that most effectively
- * Investment Decision making must **balance needs within funding limits** – with focus on priority needs across the 6 categories
- * Ireland has a **major compliance deficit** which needs higher level of funding to protect other needs (service, economic growth)
- * **Particular issues with rural water & wastewater services** (Group, TIC, Septic Tank) need additional funding support
- * Efficient delivery needs **effective collaboration** between all sectors and this has to be a focus in 2016 & beyond

Industry Collaboration

- * Thank you to all those who have participated in the Workshops across local authorities feeding into the process of shaping the next Investment Plan
- * In late September, we will formally consult with statutory stakeholders (s34, WSA, 2013) on the Draft Plan