

# Sustainable Water

## A Long Term Water Strategy for Northern Ireland

### Part 5: Water & Sewerage Services



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# Setting the Scene

## Introduction

**01.** The supply of clean, healthy drinking water and the effective treatment of our wastewater are essential for public health, the economy and the environment. These services must meet the varied needs of all customers including agriculture, business, industry and households without impacting on the environment. It is still a common perception that water should be free because it falls from the sky. However, water and sewerage services currently cost around £380 million every year.

## Governance & Regulation

**02.** The current regulatory and financial framework for the water industry was established in 2007 by the Water and Sewerage Services (Northern Ireland) Order 2006<sup>1</sup>. This included the creation of NI Water as a government owned water and sewerage company to be run on a commercial basis and subject to independent environmental and economic regulation. The Department for Regional Development (DRD) is responsible for setting the policy and legislative framework for water and sewerage services.



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1 2006 No 3336 (N.I. 21)

03. NI Water receives around 25% of its income directly through non-domestic charges to customers such as agriculture, industry and business. DRD currently pays an annual subsidy of around £280 million to NI Water on behalf of domestic consumers to meet the Executive’s commitment not to introduce household charges during the current Programme for Government (2011-16). Because NI Water is majority publicly funded, it is classified as a Non-Departmental Public Body (NDPB) and is accountable for its expenditure to Ministers, the Executive and the Assembly just as if it was part of DRD. At the same time NI Water is a Government Owned Company (GoCo) and a ‘regulated utility’ which is subject to economic regulation by the Utility Regulator (the economic and customer service regulator). As a GoCo, NI Water is also subject to corporate code as a public limited company (PLC). The Drinking Water Inspectorate (DWI) and the Northern Ireland Environment Agency

(NIEA) regulate compliance with EU quality standards for drinking water and wastewater discharges. The Consumer Council protects and represents consumer interests.

### Water Industry Price Control Process

04. NI Water’s revenue requirements and performance targets are established through a price control (PC) process. Each PC process begins with customer consultation to obtain customers’ views. This informs Ministerial Social and Environmental Guidance which sets out strategic water and sewerage priorities for the period. NI Water sets out how it will deliver these priorities in a business plan. This plan is assessed by the Regulator to determine NI Water’s revenue requirement and performance targets for the period. This forms the basis for NI Water’s annual scheme of water and sewerage charges. The PC process is summarised in Figure 5.1 below.

Figure 5.1: The Price Control Process



- 05.** The first two price controls (PC10 and PC13) covered the 5 year 2010-15 period. The next price control PC15 will cover a 6 year period (2015-21) to facilitate longer investment planning. Social and Environmental Guidance for PC15 can be viewed at [http://www.drdni.gov.uk/index/water\\_policy.htm](http://www.drdni.gov.uk/index/water_policy.htm).

### **Challenges to Service Delivery**

- 06.** We often take our water and sewerage services for granted. We turn on the tap and expect water to flow or flush the toilet and expect wastewater to disappear. It is often only when we experience interruptions to these services that we take any notice of what goes into providing them. It is still a common misconception that water should be free because it falls from the sky and that there is no need to conserve water because we have so much rain. This ignores the fact that it takes significant amounts of electricity and chemicals to produce high quality drinking water. Only 4% of treated water is consumed. The majority is used for other purposes (toilets and showers). If we reduce the amount of water we use, our carbon footprint will be smaller, less damage will be caused to the environment through the use of chemicals and treatment and electricity costs will be reduced.
- 07.** Delivering clean safe drinking water to approximately 818,000 households and businesses currently requires around 559 million litres/day of water to be abstracted, treated and distributed through a supply chain of 23 impounding reservoirs, 24 water treatment works, 340 service reservoirs, 372 water pumping stations and over 26,700 km of water mains. This must then be returned to the environment through 15,250 km of sewer

mains using 1,270 sewerage pumping stations to 1,034 wastewater treatment works and 57 sludge management centres. This is why NI Water is one of our largest companies, employing around 1,300 staff and is our second largest land owner. NI Water's operating area is also mostly rural with the average length of water main and sewer per household twice that of an average UK company. The coastline offers further operational challenges in terms of treating wastewater to protect and improve the quality of bathing and shellfish waters. Pumping and treating water and sewage is extremely energy intensive. It is therefore no surprise that NI Water is our largest single electricity consumer. There are therefore many challenges to continuing to provide safe, sufficient supplies of drinking water. These include:

<b>Funding &amp; Affordability</b>	Our water and sewerage services currently cost around £380m/yr. These costs are likely to increase with population growth, development and energy price rises. Customers' bills <sup>2</sup> will have to cover these costs but they will need to be affordable.
<b>Governance &amp; Regulation</b>	Operating within the confines of current and future systems of governance and regulation.
<b>Maintenance</b>	Maintaining a growing and ageing water and sewerage asset and infrastructure base.
<b>Environmental Compliance</b>	We continue to enjoy clean safe drinking water which achieves high levels of compliance with the regulatory standards. Similarly, compliance with wastewater treatment standards continues to improve. However sustaining these high compliance levels will continue to require significant investment to maintain and improve existing water and sewerage infrastructure and assets.
<b>Regional Development &amp; Growth</b>	While the quantity of water available for human use is largely sufficient to meet our needs now, this may not be the case in future. Water and sewerage infrastructure and assets need to accommodate future development, population growth and changing demographics.
<b>Carbon &amp; Green House Gas Emissions</b>	Maintaining a pressurised water system and providing appropriate wastewater collection and treatment requires large amounts of energy. NI Water is our largest single electricity user (over £30m/yr). This energy use is likely to continue rising with future development and growth. This will impact on future customers' bills.
<b>Protecting the Environment</b>	Abstracting large amounts of water can lead to low river flows and place natural ecosystems at risk. It is therefore important that future water demand is managed effectively to protect water resources. It is also essential that effective wastewater collection and treatment systems are in place to protect our inland and coastal waters.
<b>Climate Change &amp; Resilience</b>	Maintaining and operating extensive water distribution and sewerage systems is a difficult task during normal climatic conditions but becomes extremely challenging during extreme weather. This was illustrated during the major water supply issues that resulted from the freeze-thaw event in December 2010. Climate change predictions indicate that the frequency of extreme weather events is likely to increase. It is therefore important that measures are put in place to preserve service delivery during extreme weather events.

2 Domestic water and sewerage bills are currently subsidised by the NI Executive.

## Service Delivery Strategy

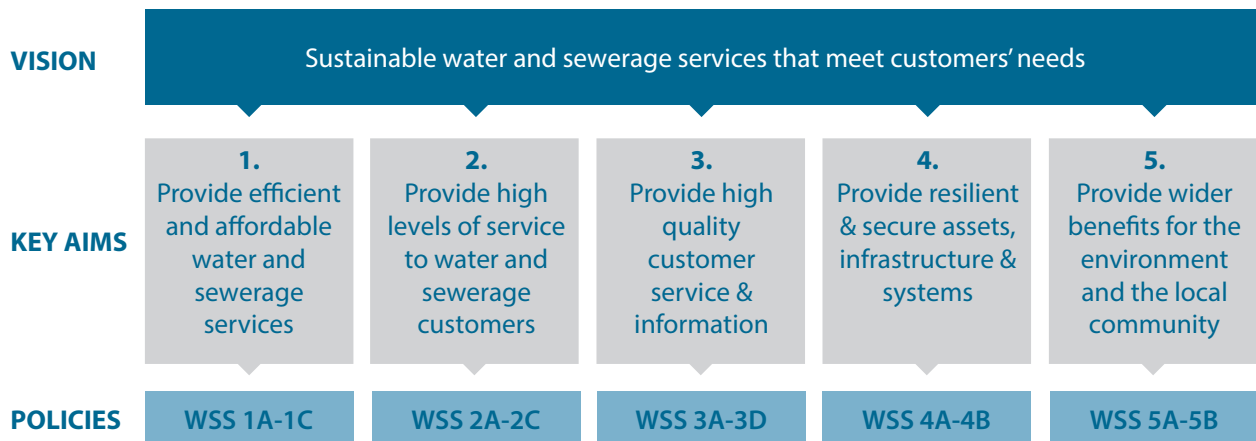
### Need for Change

08. Meeting these challenges and providing the highest possible levels of service for customers requires a more sustainable approach to water and sewerage service provision. For drinking water this means examining how service improvements can be made throughout the entire supply chain from the water source right through to consumers' taps. For sewerage services, this means managing the system from the toilet/plughole through to the wastewater discharge, back into the environment. We cannot continue to rely on expensive high energy drinking water and wastewater treatment solutions. We must actively manage water demand and introduce more sustainable treatment solutions to meet the aims of the Water Framework Directive on the protection and improvement of water resources. In addition to adopting more sustainable solutions, it will be important to manage existing water and sewerage assets and infrastructure in an efficient

and effective manner to manage future costs. As Northern Ireland's second largest land owner NI Water also has a role to protect and promote biodiversity and, where appropriate, provide public access to its estate for recreational and leisure purposes. These additional benefits are known as ecosystem services and range from maintaining the Mourne Wall and adjacent peat bogs to operating the Visitor and Education centre at Silent Valley.

09. The proposed long term vision is to provide **sustainable water and sewerage services that meet customers' needs**. The vision ensures that the three pillars of sustainability (economic development, social development and environmental protection) are considered as well as affordability. The proposed strategy for achieving this Vision is set out in the remaining sections of this chapter and is structured around 5 key aims and a number of proposed policies as shown in Figure 5.2 below.

Figure 5.2: Strategy for water and sewerage services



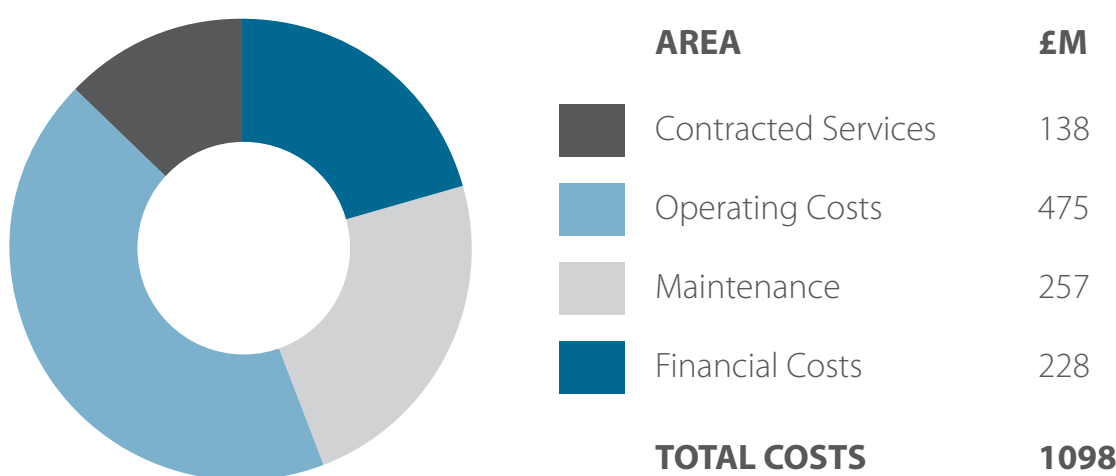


# WSS AIM 1:

## Provide Efficient and Affordable Water and Sewerage Services

- 10.** Since being established in 2007, NI Water has embarked upon a major business improvement programme to transform its operations from those of a Government organisation (DRD Water Service) to become an efficient, high quality utility service provider. This programme together with the introduction of full economic regulation has seen NI Water's operating costs (and average customer bills) significantly reduce.
- 11.** While NI Water has successfully reduced its costs since 2007, annual operational costs in 2013 were 17.8% higher than an average English water and sewerage company. If separate household charges were in place, an average water and sewerage bill here for 2012/13 would have been £424/yr<sup>3</sup> compared to an average bill of £376<sup>4</sup> in England and Wales. Various local factors including NI Water's large operating area, length of network, smaller customer base and complex governance and funding arrangements might contribute to this difference in bills. However, there is no doubt that NI Water's service delivery costs can be reduced further to close the gap with similar companies in the UK. Figure 5.3 provides a breakdown of NI Water's running costs<sup>5</sup> for the three year PC10 period (2010-13).
- 12.** The pie-chart below splits these costs by percentage and provides a breakdown of an average notional water and sewerage bill (£424/yr). This aim is about targeting efficiencies and savings in these costs to ensure customers receive high quality services at the lowest possible price. This is to be implemented through the following proposed policies (WSS 1A – 1D).

**Figure 5.3:** NI Water Costs (2010 - 13)



<sup>3</sup> This is based on NI Water's current cost base. If domestic charges are introduced the additional costs of billing and domestic bad debt (unpaid bills) could increase this figure.

<sup>4</sup> Figure sourced from the BBC Business News website.

<sup>5</sup> Figures from Utility Regulator's PC10 final determination.

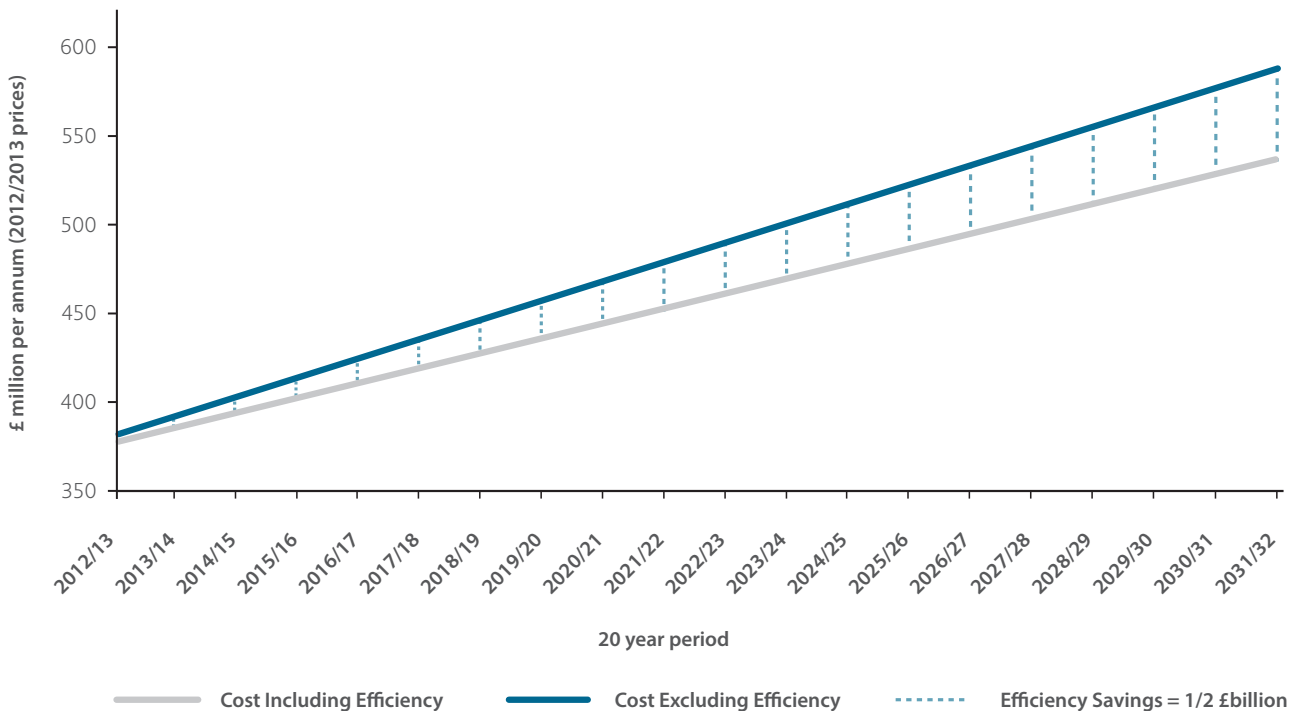
**WSS Policy 1A:**  
Effective and efficient system of economic regulation

**13.** A key measure of NI Water’s performance is its relative efficiency compared to the wider industry in England and Wales. Increased efficiency will contribute to keeping water and sewerage services costs down, but is unlikely to outweigh the upward pressure on costs over time. In England and Wales it is estimated<sup>6</sup> that average household water and sewerage bills rose by around 45% between 1990 and 2010. It has been suggested that bills would be 30% higher again but for the efforts of water companies to be more efficient. Figure 5.4 below shows that if the same figures were applied in NI over the next twenty years, water and sewerage services would cost over half

a £billion more (in this period) without efficiencies. This demonstrates the importance of having an effective system of economic regulation to drive down costs (and customers’ bills) in the absence of competition.

**14.** During the first price control period (PC10) covering the three year 2010-13 period, NI Water achieved £91m of efficiency savings. Table 5.5 is taken from the Utility Regulator’s Cost and Performance Report for PC10 and provides an estimate of how much NI Water would need to reduce costs by in order to be the ‘average’ company or the ‘frontier’ company (best). The frontier company is a combination of the best performing company in water and best performing company in sewerage for benchmarking purposes.

**Figure 5.4:** Rising costs of delivering services with and without efficiencies (the gap between the lines shows the difference)



6 Changing Course – Delivering a Sustainable Future for the water industry in England and Wales - [http://www.stwater.co.uk/upload/pdf/STW\\_Changing\\_Course\\_Exec\\_summary.pdf](http://www.stwater.co.uk/upload/pdf/STW_Changing_Course_Exec_summary.pdf)

**Table 5.5: NI Water's Relative Efficiency Gap Closure**

Category	Efficiency Gap (%)					
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
<b>NI Water to England and Wales 'average'</b>	42.6	39.5	33.3	31.2	23.6	17.8
<b>NI Water to England and Wales 'frontier'</b>	48.7	43.2	39.7	38.1	31.3	24.5

- 15.** While NI Water has reduced its costs since 2007, annual operational costs in 2012/13 were nearly 17.8% higher than an average English company. This means that for every £1 spent by an average English company NI Water spent £1.21. When benchmarking NI Water against other UK companies, the Utility Regulator takes account of local factors such as its large operating area, length of network (twice that per capita of any other UK company) and smaller customer base. Nonetheless, for the last twenty years English and Welsh companies have had their own income stream, stable governance and over £100 billion of investment. There is also much less involvement and oversight by central government. It is therefore unrealistic to expect NI Water to match the efficiency levels of UK companies in the short term. However, there is no doubt that NI Water's costs can be reduced further to close the gap with similar companies in the UK whilst improving service levels.
- 16.** Most water and sewerage customers in Northern Ireland will have no experience of the performance and levels of service offered by other UK water and sewerage companies. They will however be able to compare NI Water's performance to other utilities such as gas, electricity and telecoms. Emphasis should therefore be given to not only benchmarking NI Water's performance against other UK companies but also against other regulated utilities.
- 17.** Economic regulation is needed to drive efficiency but it is important that the regulatory system does not overly burden NI Water and divert funding and resources from service delivery. The Utility Regulator currently costs customers around £1.5m per year to regulate NI Water. These costs are small in comparison to NI Water's overall efficiency savings (i.e. £91m in PC10). However customers also have to fund a further £1m/year to cover the costs of NI Water complying with the regulatory model and preparing all the deliverables

required under its licence. Priority should therefore be given to reducing regulatory costs for customers by ensuring economic regulation is carried out in line with the principles of better regulation and is transparent, consistent, proportional, accountable and targeted.

### Consultation Question WSS 1

Do you agree with the identified principles of regulation currently applied? Should further consideration be given to best practice in other regulatory sectors?

### WSS 1A Proposed Measures:

- Continue to regulate NI Water to improve operational efficiency and close efficiency gap with water and sewerage companies in the UK.
- Reduce future regulatory costs for customers by ensuring economic regulation is proportional, targeting those areas where improvements are most needed (and avoid placing unnecessary red tape and regulatory burden on the water industry).
- Put in place an effective system of benchmarking NI Water's performance against other utilities.

## WSS Policy 1B:

Manage future costs through innovative management of assets and infrastructure

### Maintenance Costs

18. Over £80 million per year, or around one quarter of water bills, pays for maintenance of the water and sewerage system. Maintenance costs increase as infrastructure and assets age. Maintenance also increases as the size of NI Water's asset base increases. The current investment policy is to prioritise funding on maintenance first before

investing on service improvements. Without effective maintenance, water and sewerage assets and infrastructure will deteriorate and break down. This not only impacts on services for customers but can also impact on the environment.

### Consultation Question WSS 2

Do you agree with the current policy of prioritising funding for maintaining existing water and sewerage assets first before investing in service improvements?

19. NI Water does not currently have the information or systems to allow it to prepare a robust assessment of future asset maintenance needs based on risk to service. In the absence of this information the Utility Regulator has determined a level of asset maintenance using econometric analysis of asset maintenance investment by other water and sewerage service providers. Priority should therefore be given to putting in place the systems necessary to collect and analyse asset information to determine future maintenance and investment needs. This will ensure that future levels of water and sewerage maintenance funding will be based on need and prioritised accordingly.

### Power Costs

20. Pumping and treating water and sewage is extremely energy intensive. It is therefore no surprise that NI Water is the largest single electricity consumer in Northern Ireland. Annual power costs already account for over 1/5 (over £30M) of NI Water's operating costs. Predicted increases in energy prices could see annual power costs rise to around £50M by 2020. This does not factor in growth or future improvements in infrastructure needed for European compliance, both

of which will see energy costs rise even further. To manage future power costs and carbon emissions NI Water will need to deliver 'greener' services. This means continuing to maintain and upgrade assets and infrastructure to improve services and protect the environment. However, this must be done without creating a legacy of costly high energy assets and plant to be paid for by future customers.

### Whole-life Investment Decisions

21. To help manage maintenance and power costs both now and in the future, it is important that future investment is cost effective over the life of the proposed new infrastructure and assets. Solutions that offer the greatest value for money in terms of whole life costs versus whole life benefits should be progressed. This means taking account of long-term maintenance costs, carbon emissions, energy costs, traffic disruption, etc. This approach should not only be applied to proposals to invest in new assets/infrastructure but also to maintenance proposals. For example, when replacing machinery or equipment, it might be more cost effective to purchase a more expensive product at the outset because it will last longer or will require less servicing in the future. The project appraisal process should therefore be revised to ensure that investment decisions are based on 'whole-life' net present cost (NPC), the calculation of which should include the projected future cost of electricity as issued by the UK Department of Energy and Climate Change (DECC) and the cost of NI Water's inclusion with the UK Carbon Reduction Commitment (CRC) Energy Efficiency Scheme. Non monetary benefits such as wider environmental and social sustainability should also be considered in appraisals.

### Research, Development, Innovation & Invest to Save

22. It is recognised that Research, Development and Innovation (RDI) has a role to play in improving the future delivery of services. However, it is also recognised that investing in RDI can be expensive and carries risks. The policy is for NI Water to continue to maintain and implement a RDI strategy with the aim that this will assist improved performance and the delivery of further efficiencies through the timely provision of focused applied research and development support to all areas of business need. Where possible this should be through collaborative projects, such as those progressed by UK Water Industry Research (UKWIR), to make full use of opportunities for sharing RDI costs with other organisations. Opportunity should also be taken to encourage innovation across the supply chain through the procurement process. Where it can be demonstrated that new technology will improve operational efficiency and performance, investment should be made to reduce future operational or maintenance costs. This could include installing new IT systems and remote monitoring.

#### WSS 1B Proposed Measures:

- Continue the current water and sewerage investment policy of prioritising maintenance needs over enhancement.
- Revise the appraisal process for enhancement and maintenance projects to ensure solutions that provide the greatest value for money in terms of whole life costs versus whole life benefits are progressed.
- Put effective systems and processes in place to collect and analyse asset

information to determine future maintenance and investment needs.

- Continue to maintain and implement a Research, Development and Innovation strategy with the aim that this will assist improved performance and the delivery of further efficiencies. Where possible full use should be made of opportunities for sharing RDI costs with other organisations.
- Investment should be made in new technology/systems where it can be demonstrated that these will improve operational efficiency and performance and reduce future operational or maintenance costs.

**WSS Policy 1C:**

Transform water and sewerage assets and infrastructure through sustainable solutions

**Sustainable Service Delivery**

23. To manage future maintenance and power costs future investment (on maintenance, quality, service levels or growth) must be sustainable. This means moving away from traditional high energy water, wastewater and drainage solutions and adopting innovative, natural approaches where issues are addressed at source. It is unlikely that sustainable solutions can be provided by NI Water alone. For example better drinking water quality might best be achieved by land management and pollution control to improve raw water quality, rather than extending treatment processes. Figure 5.6 outlines the proposed approach to sustainable service delivery and the five key policies that are needed.

**Figure 5.6:** Sustainable Service Delivery



### **Sustainable Catchment Area Management Planning (SCAMPNI)**

24. SCAMPNI is technique for achieving improvements in raw water quality (and drinking water quality) by managing diffuse pollution within an integrated catchment plan, rather than through energy-intensive treatment processes to deliver progressively marginal reductions in pollution from point discharges of wastewater. This is covered in DW Policy 1C in Part 2 of this strategy.

### **Sustainable Storm Water Management**

25. This is about managing storm water locally through land management, urban design, the use of sustainable drainage systems (SuDS), stormwater separation and sewer infiltration reduction rather than providing progressively larger sewerage systems. This is covered in FRMD Policies 1C, 1D, 2C, 2D & 3B in Part 3 of the Strategy.

### **Sustainable Wastewater Treatment Solutions**

26. This is about gradually transforming the wastewater infrastructure and asset base so that it costs significantly less to operate and maintain, whilst simultaneously enhancing compliance and providing for growth. This is covered in EP Policy 3B in Part 4 of the Strategy.

### **Water Demand Management**

27. This is about reducing leakage and introducing demand management measures that reduce waste, rather than by increasing water abstraction, treatment and transfer – all with an associated energy demand. This covered in DW Aim 2 in Part 2 of the Strategy.

### **Energy Efficiency & Reduced Greenhouse Gas Emissions**

28. This is about managing and maintaining existing water and sewerage assets to improve energy efficiency and minimise emissions. With energy costs set to soar in the future, NI Water needs to review its current processes and systems to identify how energy efficiency savings might be achieved through innovative management and procurement of its assets and infrastructure.
29. The gradual introduction of more sustainable approaches to water and sewerage provision will help manage future increases in energy consumption. However, due to our local demographics, population spread and the need to comply with EU quality standards, it is recognised that NI Water will continue consuming large amounts of energy pumping and treating water and sewage large distances, no matter how efficient its operations and assets. To minimise carbon emissions, it will therefore be important that NI Water continues to increase the amount of energy it secures from renewable sources such as wind, solar, hydro and anaerobic digestion. Where viable, this should include investing in projects to produce more renewable energy in-house to help manage power costs. This applies to the operation of both existing and new assets and infrastructure.

### **Progressing Sustainable Solutions**

30. It is recognised that the development and implementation of sustainable water and sewerage solutions presents NI Water with investment planning and delivery challenges compared to 'conventional solutions.' They often require more planning at the appraisal

and scope development stages due to increased stakeholder engagement and land purchase. There are also different types of risks to be managed. NI Water resources for appraisal, planning, and project delivery should therefore be aligned to deliver solutions that provide the optimum long term benefits. NI Water should carefully plan the early stages of project development and consider risks to project delivery. This include progressing trial projects and working with other stakeholders to identify solutions and secure support for these risks to be accepted and managed.

**31.** Appropriate effort should also be made to identify and secure sufficient land early in the project phase to give the option of larger footprint process solutions that typically result in lower operating costs. NI Water should also consider the advance purchase of land to accommodate future expansion of works using more sustainable solutions.

**32.** The key challenges to implementing sustainable solutions is the time it takes to: undertake the strategic studies and pilot trials; address any legislative and regulatory barriers; allocate actions across different stakeholders; secure funding to ensure co-ordinated delivery and; allow the benefits of each stage of development to be assessed before the next stage of implementation begins. The development of integrated sustainable solutions therefore needs:

- careful planning of strategic investigations, trial projects and solution development leading up to project delivery;
- a more flexible and responsive approach to solutions allowing a phased approach where this is appropriate;

- funding for innovative development with uncertain outcomes; and
- the willingness to accept that some solutions will not perform as expected and further investment may be required to secure the desired outcome.

#### WSS 1C Proposed Measures:

- Put in place a long-term strategy to transform the water and sewerage infrastructure/assets base to be less energy intensive through sustainable solutions.
- Explore opportunities to invest in renewable energy generation to reduce running costs.
- Explore opportunities to generate renewable electricity through innovative management of existing water and sewerage assets such as: generating hydro-power from excess water mains pressure; and installing solar panels at facilities.
- NI Water should carefully plan the early stages of project development and consider risks to project delivery. This may include progressing trial projects and working with stakeholders to identify solutions and secure support that these risks be accepted and managed.
- Identify and secure sufficient land early in the project phase to give the option of the selection of larger footprint process solutions that typically result in lower operating costs. This includes purchasing land to accommodate future expansion of works using more sustainable solutions.



## WSS AIM 2:

### Provide High Quality Services to Water & Sewerage Customers

- 33.** Since the Northern Ireland Assembly was restored in 2007 around £1.6 billion has been invested on improving water and sewerage services. This has raised the quality of drinking water and improved environmental compliance. Table 5.7 shows how compliance levels have improved since 2004.
- 34.** These high levels of compliance show that drinking water is wholesome and safe, and that the environment is protected from wastewater discharges. However compliance is only one aspect of service performance. It is also important that water and sewerage services meet customer needs in other areas such as supply interruptions, low pressure and out of sewer flooding. It is therefore
- important that the finite investment available is used to improve performance in all customer service level areas.
- 35.** The Utility Regulator assesses NI Water's overall service performance using the Operational Performance Assessment (OPA). This is a system of assessment that takes data on water services, sewerage services, customer service and environmental compliance and scores water and sewerage companies based on their performance. This score is then weighted using information on consumers' views to give a final OPA score. NI Water's OPA score is published annually in the Utility Regulator's Cost and Performance Report<sup>8</sup> where it is compared with relative scores from other UK companies and historic achievement.

**Table 5.7:** Improvements in Compliance

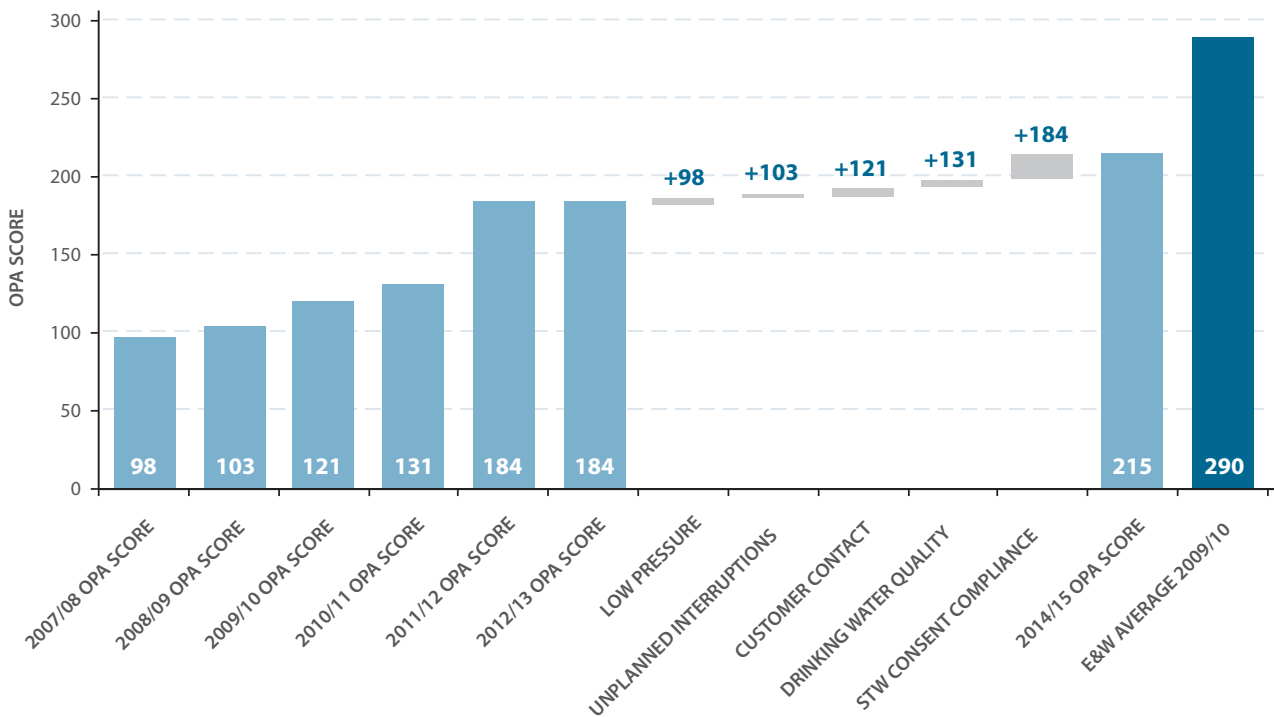
	Compliance Levels (%)									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	
<b>Drinking Water Quality</b>	99.22	99.48	99.55	99.6	99.69	99.79	99.86	99.83	99.78	
<b>Urban Wastewater Treatment</b>	43	62	77	86	92	93	94	96	98	

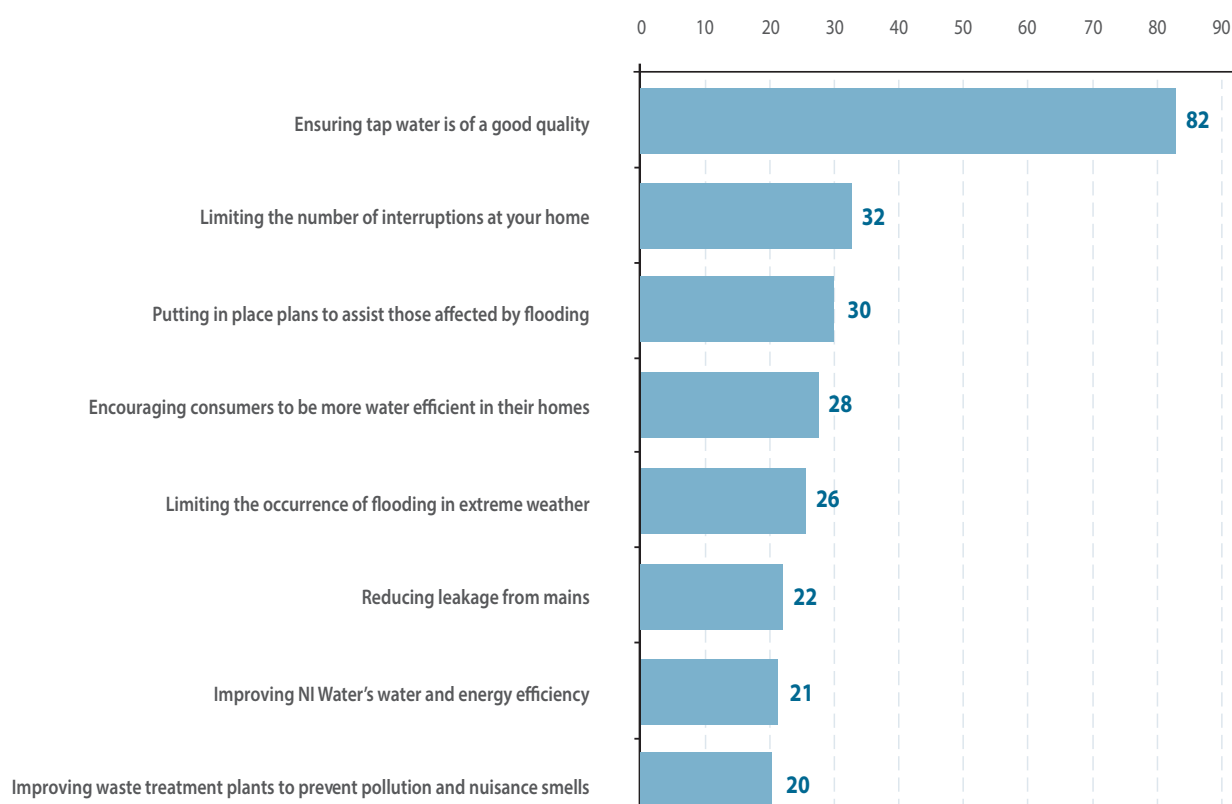
<sup>8</sup> The 2012/13 figures are provisional and still subject to change.

**36.** Figure 5.8 below is taken from the Utility Regulator’s Final PC13 Determination and shows how NI Water’s OPA score has continued to improve since 2007. Despite significant improvement in NI Water’s OPA score, the company is still some way behind the average scores achieved by companies in England and Wales. This illustrates the challenge and opportunity for further improvement as assessed by the Utility Regulator.

**37.** The OPA score provides a quantitative means of assessing service performance. However, not all service level issues will be identified through the OPA score. It is therefore imperative that customers’ views and complaints are also used to inform future investment decisions. Through consumer research completed in 2012 to inform the draft strategy, domestic customers were asked for their three most important service level areas. The results of this are shown below in Figure 5.9 which ranks the service areas in order of their importance to customers.

**Fig 5.8:** Projected improvements to NI Water’s OPA score



**Figure 5.9: Domestic Customers' Three Most Important Service Level Areas**

38. Ensuring good quality tap water is by far customers' highest priority. Reducing the number of water supply interruptions is ranked second. Encouraging water efficiency in homes and assisting those affected by flooding were identified as priorities for over a quarter of domestic customers. Reducing leakage and ensuring sufficient water pressure were identified as priority by over 22% of non-domestic customers. This aim is about targeting future investment to ensure all water and sewerage customers in Northern Ireland receive the highest possible service levels for the funding available and make NI Water one of the best performing companies in the UK. This is to be implemented through the following proposed policies (WSS 2A – 2D).

### WSS Policy 2A:

Provide high service levels to all water and sewerage customers

#### Drinking Water Quality

39. Figure 5.9 shows that drinking water quality is by far consumers' top service level priority. Drinking water must meet strict legal standards regulated by the Drinking Water Inspectorate (DWI). The DWI ensures that action is taken if these standards are not met. In 2012 more than 98,000 tests were carried out with a pass rate of over 99.78 % per cent. These high levels of drinking water quality have been achieved through sustained investment in water treatment facilities and water mains rehabilitation. To make further marginal improvements in drinking water quality compliance hundreds of millions of pounds of additional investment is likely to be needed. This seems excessive

and is unlikely to represent good value for money. The cost effectiveness of increasingly exacting drinking water compliance targets was questioned by the Executive's Independent Water Review Panel in its Strand 1 Report in 2007<sup>9</sup>. The priority is to sustain overall compliance levels and address localised drinking water quality issues so all customers receive high quality drinking water. In 2012 NI Water received over 6,000 customer contacts about drinking water. The majority of these related to the colour, taste and odour of tap water. Information from customer contacts and monitoring should therefore be used to inform investment decisions.

40. The long-term policy is to adopt a risk management approach to sustain current levels of overall drinking water quality compliance by addressing ongoing maintenance, local water quality issues and any new/emerging regulatory requirements or identified risks. This is covered in more detail in DW Aim 1 in Part 2 of the draft strategy.

### Consultation Question WSS3

Do you agree with the current investment policy of targeting localised quality issues to ensure all customers receive wholesome, safe drinking water rather than investing £millions to achieve small improvements in overall compliance?

### Water Supply Interruptions

41. Limiting the number of supply interruptions is consumers' second most important service level priority. In 2012/13 more than 53,000 properties were affected by unplanned interruptions to supply lasting more than three hours; over 10,000 by unplanned interruptions lasting over

six hours; with a further 50,000 affected by planned interruptions. Yet the priority given to reducing supply interruptions was relatively low in comparison to drinking water quality. This can be attributed to customers' perceptions that supply interruptions are generally infrequent and short-term.



42. No matter how much money is invested in maintenance, there will always be bursts within a pressurised distribution system of over 26,700km of water mains. The important issue is how quickly bursts are fixed and water supplies restored. Similarly, in managing and maintaining so many kilometres of water mains, planned supply interruptions will be necessary to carry out essential work. In both scenarios, it is essential that those customers affected are kept well informed with up-to-date information on when their supplies will be interrupted and restored. NI Water should review and determine the target time, with stakeholder consultation, for restoring

<sup>9</sup> [http://www.drdni.gov.uk/iwrp\\_strand\\_1\\_report.pdf](http://www.drdni.gov.uk/iwrp_strand_1_report.pdf)

supply after an unplanned interruption. The long-term priority is to reduce the number of properties that experience unplanned supply interruptions, identify and resolve problems quickly and ensure customers are effectively informed of planned supply restrictions.

### Internal & External Sewer Flooding

43. Putting plans in place to help those affected by flooding and reducing flooding during extreme weather were consumers' third and fifth most important priorities. This is understandable given the damage and distress caused by such flooding. Internal sewer flooding affects on average 120 properties per year<sup>10</sup>. The long-term proposals for managing flood risk are set out in Part 3 of the strategy. Under proposed FRMD Policy 4C, NI Water will continue to maintain a register of properties at risk of internal and external sewer flooding (due to sewer overloading) and continue with a prioritised investment programme to gradually remove all properties at risk of out of sewer flooding on this register. NI Water will also continue to educate consumers on the importance of not flushing inappropriate items/substances into sewerage systems to prevent the flooding and pollution incidents caused by blockages.

### Water leakage

44. To provide sufficient supplies at our taps and showers water has to be pumped at pressure through the distribution system. This causes water to leak from any defects in the system. This water has been abstracted, treated and pumped through the system and has financial and environmental costs. It is therefore

important that leakage is kept to a minimum. However, with a pressurised system of over 26,700 km of pipe with thousands of joints vulnerable to ground conditions and traffic pressure, it will never be possible to reduce water leakage to zero. Reducing leakage from water mains was consumers' sixth most important service area. Its relatively low weighting suggests consumers recognise that leakage is inevitable in a pressurised system of water mains. The long term policy is to achieve and maintain the sustainable economic level of leakage (SELL) which is currently 162 MI/day. The SELL is the level of leakage where it becomes economically and environmentally (in carbon terms) unviable to invest in further leakage reductions. The proposals for leakage reduction are set out in more detail in Key Aim 3 in Part 1 of this strategy.

### Energy & Water Efficiency

45. Improving NI Water's water and energy efficiency was consumers' seventh most important area. This recognises that it takes lots of energy to pump and treat drinking water and wastewater. The proposals for energy and water efficiency are set out in WSS Policy 1C and in DW Aim 3 in Part 2.

### Wastewater Treatment

46. Improving wastewater treatment to prevent pollution and nuisance was consumers' eighth most important service area. The 2012 high level of wastewater treatment compliance (98.6%) has been achieved through sustained investment in wastewater treatment facilities. This investment at treatment facilities should continue to improve compliance further. However, more emphasis now also needs to be given to sewerage networks to

<sup>10</sup> Figure taken from the Consumer Council's Connecting with Consumers Report (March 2014)

reduce pollution incidents, out of sewer flooding and development pressures. The long-term proposals for wastewater treatment and sewerage are covered in Part 4 (EP3) of this strategy.



### Water Pressure

47. In 2012, around 4000 households complained about low pressure. Yet, ensuring there is sufficient water pressure was consumers’ ninth most important service area. Similarly to findings in relation to supply interruptions, consumers appear relatively satisfied with current pressure levels. Drops in pressure are relatively infrequent, and thus, improvements are moderately prioritised. The long-term policy is to continue to maintain a register of properties at risk of receiving low pressure and invest to gradually remove all properties from this register.

### New Development

48. Building developments to avoid flooding and pollution issues was consumers’ least important service area. Water and sewerage infrastructure are essential for future economic development and growth. Priority needs to be given to ensuring water and sewerage infrastructure investment plans are integrated into development plans. This is covered by DW Policy 2E (Part 2), FRMD Aim 1 (Part 3) and EP Policy 3B (Part 4).

### Strategic Infrastructure Planning

49. Future wastewater treatment and sewerage upgrades should be aligned and coordinated with development plans and improvements in other drainage infrastructure including roads, rivers and culverts. To achieve this, priority should be given to developing and delivering an integrated strategic drainage and wastewater infrastructure plan to facilitate future development needs, reduce flooding and protect/improve the quality of water in the environment. This is covered in proposed FRMD Policy 3A in Part 3 of the draft Strategy.

### WSS 2A Proposed Measures:

- Adopt a risk management approach to sustain current levels of overall drinking water quality compliance by addressing ongoing maintenance, local water quality issues and any new/emerging regulatory requirements or identified risks (see DW Aim 1 in Part 1).
- Reduce the number of properties that experience unplanned supply interruptions, identify and resolve problems quickly and ensure customers’ are effectively informed of planned supply restrictions.
- Continue to maintain a register of properties at risk of internal and external sewer flooding (due to sewer overloading) and invest to gradually remove all properties from this register (see FRMD Policy 4C).
- Continue to educate consumers on the importance of not flushing inappropriate items or substances into sewers to prevent the flooding and pollution incidents caused by blockages (see Policies EP 3A & FRMD 4C).

- Achieve and maintain the sustainable economic level of leakage (SELL) (see DW Aim 3 in Part 2).
- Continue to maintain a register of properties at risk of receiving low pressure and invest to gradually remove all properties from this register.
- Develop and deliver an integrated strategic drainage and wastewater infrastructure plan to facilitate future development needs, reduce flooding and protect/improve the quality of water in the environment.

## WSS Policy 2B:

Maintain accurate information on water & sewerage assets, infrastructure and consumers' views

### Information on Customer Complaints and Priorities

50. Customers are the most important part of any business. It is therefore essential that accurate and reliable information is collected on customer complaints. This information is invaluable for addressing problems in water distribution systems and sewerage networks which are below the ground and are often hard to detect. For example, complaints in relation to the colour, taste and odour of drinking water are used to inform the water mains rehabilitation programme.
51. As part of the water industry regulatory price control process, NI Water and the Consumer Council already undertake detailed research to identify their consumer priorities for service level improvements. The results of the most recent research completed in 2014 are set out in the Consumer Council's Connecting with Consumers Report<sup>11</sup>. This

will inform NI Water's 6 year investment programme for the 2015-21 period. Consumer research should continue to be completed as part of the price control process to inform water and sewerage investment plans. This should include appropriate follow-up work to ensure consumer priorities have been met.



### Annual Reporting

52. NI Water's performance is reported annually through its Annual Reports and the Utility Regulator's cost and performance reports. Annual Reports on drinking water and wastewater compliance are also published by the environmental regulators.

### Consultation Question WSS4

Do you feel that adequate information on NI Water's performance is available to customers through the annual reports produced by NI Water and its regulators? If not, what other information do you feel should be made available?

11 This Report can be viewed at <http://www.consumercouncil.org.uk/>.

### Information on Assets, Infrastructure & Processes

**53.** Robust and reliable information on water and sewerage infrastructure and assets is needed to inform future investment plans and target improvements where they are most needed. This includes:

- Maintaining registers of the number of properties at risk of internal/external sewer flooding and properties at risk of receiving low water pressure;
- Monitoring information such as drinking water quality, meter readings, wastewater flow monitoring and sewerage spill monitoring;
- Keeping accurate records on incidents such as water mains bursts, sewer blockages and pollution incidents (and spills); and
- Collecting accurate information on wastewater assets and infrastructure to inform the development of robust and holistic drainage area plans (DAPs).

**54.** Priority should be given to improving the accuracy, reliability and consistency of all this information to help improve water and sewerage operations and inform future investment plans. This information includes customer, financial, management, process control and asset data.

#### WSS 2B Proposed Measures:

- Collect accurate and reliable information on customer complaints to inform future investment plans.
- Consumer research should continue to be completed to inform water and sewerage investment plans. This should include appropriate follow-up work to ensure consumer priorities have been met.

- Continue to improve the accuracy, reliability, security, and consistency of information - customer, financial, management, and asset information.

### WSS Policy 2C:

#### Effective customer education and public awareness

- 55.** NI Water will continue to manage its assets efficiently to reduce both wastewater and pollution incidents. A major part of this will involve working to influence consumer behaviour through education and public awareness, which will encourage a wider acknowledgement of water conservation and more environmentally friendly lifestyle choices. While infrastructural investment is important, the customer has a major role to play in how vital services provided by NI Water are used.
- 56.** Research<sup>12</sup> has indicated that customers place high priority on education to promote greater water efficiency. Over 30% of respondents said they would like to see an enhanced education programme to promote water efficiency in their day-to-day lives.

#### Water Efficiency

- 57.** NI Water provides a wide-ranging educational service, primarily but not exclusively designed with schools in mind. The company is at the forefront of efforts to promote water efficiency within Northern Ireland, and has distributed approximately 4,500 water audit packs to properties, in addition to 3,000 cistern devices. While it is encouraging that 50% of those surveyed say they feel quite or well informed about water

<sup>12</sup> Connecting with Consumers Report which can be viewed at <http://www.consumerCouncil.org.uk/>



efficiency, there is still work to do in enhancing this depth of knowledge. NI Water is encouraged, as part of PC15 commitments, to further promote some of the 'everyday' practical steps that can be taken to use water in a more efficient manner. Furthermore, NI Water is also encouraged to work with partner organisations to promote a 'water wise' strategy in homes and businesses, as well as the uptake and installation of water efficiency devices.

### What can be disposed of in the sewer

58. NI Water's public awareness campaigns -'Bag It and Bin It', 'The Dirty Dozen' and Fats Oils and Greases, inform customers about the importance of not putting inappropriate items down sewers. Information leaflets about the campaigns are available on NI Water's website. Customers surveyed as part of PC15 recognised that investment in education could reduce sewer blockages and thus reduce flooding incidents. An awareness of the campaigns, amongst those surveyed, could be improved by an appropriately funded education campaign.

### Education and Public Awareness Campaigns

59. Consumer education on water efficiency and flushing inappropriate items are covered in DW Policy 2D (Part2) & EP Policy 3A (Part4) of this strategy. The long-term policy is to continue investing in education and public awareness campaigns to promote prioritised key messages, through the continued work of the water bus, school visits, events and other educational activities. Consideration of new opportunities to enhance customer education in the future may facilitate reaching a wider audience.

Assessing the outputs of previous campaigns may facilitate NI Water in their delivery of future key messages. Further development of partnerships with existing and new organisations could also deliver shared benefits.

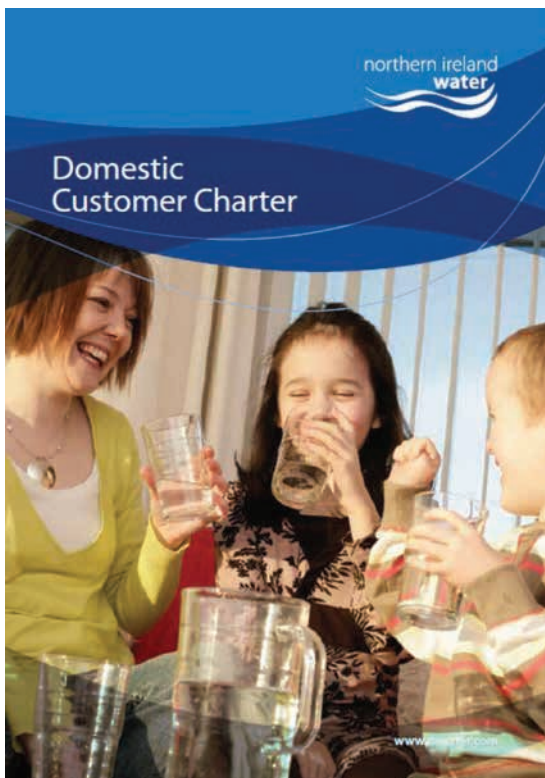
### WSS 2C Proposed Measures:

- Continue investing in education and public awareness campaigns (including the Water Bus, school visits and events) to promote prioritised key messages such as the importance of insulating pipes, using water wisely, not flushing inappropriate items/substances into sewers and measures to prevent flooding.
- Assess the outputs of previous education and public awareness campaigns to enhance future proposals that will reach a wider audience.
- NI Water should further develop effective partnerships with other organisations where there are shared benefits of the campaign.

## WSS AIM 3:

### Provide High Quality Customer Service and Information

60. Customers are the most important part of any business and NI Water's goal is to provide a range of essential services and associated contact channels which meet the rising expectations of customers. Findings from the latest customer research show that most customers are satisfied with the service provided most of the time. Customers simply expect the service to work.



61. Significant progress has been made in relation to customer measures since NI Water was formed in 2007 and the company fully appreciates that there is a great deal more that can be done to deliver the standards of service their customers will expect in the future. NI

Water is committed to providing high quality services to all our customers. Its Domestic Customer Charter sets out the standard of service customers can expect to receive. This Aim is about building on these improvements to provide the best possible standards of customer experience.

### WSS Policy 3A:

#### Consistent, accessible and timely customer information

62. NI Water recognises the importance of customers being able to make contact using whichever media channel is convenient to them. The company provides a range of options to facilitate customer contact and has, redeveloped their website, developed a Smartphone application and have Facebook, Twitter and YouTube accounts to make it easier for customers to keep in contact.
63. Digital media provides additional opportunities to communicate with customers and should help NI Water keep the costs of customer contacts down. Digital and social media will also allow NI Water to keep customers better informed regarding operational issues. NI Water should maximise the use of these media to inform customers about unexpected operational issues, such as bursts, planned works and mains refurbishment.

### WSS 3A Proposed Measures:

- Continue to keep customers informed with up to date information through a range of communication channels including the website and social media.
- Launch a customer self service facility and seek to develop it to their needs and to improve their experience.

### WSS Policy 3B:

Improving and measuring the customer experience

#### Customer Contacts & Complaints

64. Substantial efforts have been made to drive down call volumes from previous levels of over 350,000 per annum through the analysis of customer contacts and business improvement initiatives. This includes the implementation of a High Volume Call Answering (HVCA) system to deal with increased customer contacts and the provision of information to customers during incidents. In 2013/14, NI Water met its target of no more than 250,000 calls, receiving around 226,881 calls.
65. Having achieved the 10 day target response time for written complaints (DG7) with a provisional performance of 99.72%<sup>13</sup> in 2013/14 against the target of 98.5%, NI Water is aiming to further reduce the number of complaints and the time taken to respond to complaints or enquiries by improving the standard of service delivery and the accuracy of customer data. NI Water is developing measures to record how often customer issues are solved on first point of contact and, if unable to do so, how to keep customers informed about progress. The Company is also developing ways to record repeat issues and introduce



process and system changes that will seek to continue to improve customer experience.

#### Measuring Customer Satisfaction

66. There are many water and sewerage service performance measures such as water leakage, water pressure and out of sewer flooding. However, the two headline performance measures tend to be drinking water quality and wastewater compliance. Although overall compliance should provide a strong indication of service quality, it does not reflect customer satisfaction.
67. Customer satisfaction is a crucial part of informing how services should be improved. Quarterly independent market research is carried out through telephone surveys of 400 customers who have called NI Water for any reason. These surveys are invaluable and will continue to be used to identify opportunities to improve customer experience. NI Water

13 Figure subject to audit.

recently introduced the key customer satisfaction elements from the industry based Service Incentive Mechanism (SIM) that will double the number of customers currently being surveyed and cover the 'end to end' customer delivery process.

68. Work should continue with stakeholders to review levels of customer satisfaction and seek to improve processes and deliver value for money services in line with customer expectations. This should include working with stakeholders to develop an overall single measure for customer satisfaction / experience which should then be used as a strategic driver for future investment alongside drinking water and wastewater compliance.

### WSS 3B Proposed Measures:

- NI Water will continue to seek to reduce the number of complaints received year on year.
- NI Water will develop its ability to resolve issues at the first time of contact, to lessen the need for repeat contacts by defining, measuring and using root cause analysis to improve customer experience.
- NI Water should develop in conjunction with its stakeholders, an agreed customer experience measure with a view to bench marking itself against other service providers.

### WSS Policy 3C:

#### Helping vulnerable customers in the community

69. NI Water offers a range of free additional services for those customers who require extra support, e.g. those with a disability, older customers or those with a serious medical condition. Customers need to join NI Water's Customer Care Register



to get the extra free services that they or anyone in their household would like to receive. These services include:

**Doorstep Service:** If you have a hearing difficulty NI Water officials will knock the door louder and speak clearly when they call with you. If you have a mobility problem they will allow more time for you to answer the door.

**Password scheme:** NI Water can provide you with a password to help you identify their staff. If someone claims to work for NI Water but does not know your password, do not let them in.

**Carers Contact Service:** You can name a carer or relative who can contact NI Water on your behalf or that NI Water can contact if the Company needs to reach you at anytime; or to whom NI Water can post information.

**Special Advice:** NI Water will try to resolve any concerns you may have by phone. If they can't they will arrange an appointment to visit you at your home.

**Information leaflets:** All of NI Water's information leaflets and letters are available in Braille, large print and on CD and audio tape.

- 70.** The number of individual customers on the Customer Care Register increased by 9% to 2,903 in 2013/14 and there are plans for further increases to ensure that this reflects all of our customers who rely upon the additional free services we provide.

#### WSS 3C Proposed Measures:

- Continue to promote the Customer Care Register to ensure those who need to avail of these services are aware of them

#### WSS Policy 3D:

##### Efficient and effective processing of customers' bills

- 71.** Further planned service improvements, especially the introduction of a new self-service solution, will continue to reduce call volumes and improve the level of service being provided to customers. These enhancements to the online facilities will include the ability to access and update billing account details, make payments, request septic tank emptying and view up to date operational information via an interactive map.
- 72.** Metering is a key part of the service provided by NI Water. Through the PC15 customer research, NI Water recognises customers wish to see improvement of the customer service experience including accuracy of billing and invoicing processes. For billed customers they aim to provide easy to understand, transparent, accurate billing and consumption data and will continue to work with the Consumer Council to

further improve the billing format with a view to making bills easier to understand and more transparent for customers.

- 73.** NI Water also wants to provide more accurate billing and consumption data and aims to achieve greater accuracy in its measured bills, with 99% based on actual meter reads (at least once per annum), to give confidence to customers and better assist them in managing the efficiency of water use. The target for DG8 in 2013/14 was 98.5% with a provisional out-turn of 99.11%<sup>14</sup> target was increased to 99% for 2014/15. NI water proposes to retain this level through PC15 (2015-21).

#### WSS 3D Proposed Measures:

- NI Water will consider how it may best avail of new technologies to seek to improve the efficiency and accuracy of the meter to bill process

14 Figure subject to audit.

## WSS AIM 4:

### Provide Resilient & Secure Water and Sewerage Services

- 74.** It is important that our water treatment and distribution systems are resilient to extreme weather events. This is demonstrated by the major water supply incident that occurred in December 2010. A prolonged period of very heavy snowfall with continuous, unprecedented freezing conditions across Northern Ireland followed by a rapid thaw resulted in thousands of burst pipes and around 450,000 customers in 215,000 properties having their water supplies interrupted. The situation was exacerbated by a number of non-domestic and domestic properties being unattended for an extended period over the Christmas / New Year holidays with the result that leaks within properties went undetected for a number of days.
- 75.** Following the incident, the Northern Ireland Executive commissioned the Utility Regulator to carry out an investigation into the incident. In its Report<sup>15</sup>, the Utility Regulator concluded that the weather had been of an exceptional nature (1 in 100 year event in established records) and that around 80% of the additional water demand caused by the freeze / thaw leaked from domestic and business water pipes. The Report also acknowledged the dedicated work done by NI Water staff and others in restoring services to customers in extreme weather and difficult operating conditions. However, a number of failures were identified. Key among these were failures in communication with customers,

Burst Water Main following rapid thaw in December 2010



15 [http://www.uregni.gov.uk/water/projects/freeze\\_thaw\\_investigation\\_2011/](http://www.uregni.gov.uk/water/projects/freeze_thaw_investigation_2011/)

leadership and preparation for a crisis of this magnitude.

**76.** NI Water has implemented many of the recommendations in the Utility Regulator’s report. This has included improving customer communication, information and better planning. Some of the key improvements made are summarised in Table 5.10. These systems need to be continually maintained and reviewed to make any further improvements necessary to effectively manage a major incident.

**77.** This aim is about improving the resilience of water and sewerage assets, infrastructure and systems to preserve services during extreme weather events (e.g. freeze-thaw, flooding, etc.) and ensuring assets are safe and secure. This is to be implemented through the following proposed policies (WSS 4A – 4B).

**Table 5.10: Key Improvements for Handling Major Incidents**

<b>Customer Call Centre</b>	<ul style="list-style-type: none"> <li>Increasing the number of telephone lines in the Call Centre including dedicated lines for Elected Representatives.</li> <li>A new pre-recorded response system - High Volume Call Answering (HVCA) Service - capable of handling 10,000 calls per hour.</li> </ul>
<b>Major Incident Planning</b>	<ul style="list-style-type: none"> <li>Maintaining a well-developed Major Incident Plan to provide a fully planned, reactive response to operational incidents.</li> <li>The Plan is regularly activated and exercised in response to real-life emergency situations and through mock incident exercises.</li> </ul>
<b>Customer Communications and Information</b>	<ul style="list-style-type: none"> <li>Improving the flow of information from the field to the key customer contact points such as the call centre and the website.</li> <li>This has been complimented by significantly improving the ability of customers to access this information in a major incident.</li> <li>An improved website with a post code search facility and new social media channels (Twitter, Facebook, and YouTube) amongst others.</li> <li>NI Water now runs annual customer-awareness advertising campaigns on the need to prepare for the winter.</li> </ul>

**WSS Policy 4A:**

**Improve the resilience of water and sewerage assets, infrastructure and systems**

**78.** It is important that our water and sewerage assets and infrastructure are resilient to extreme water events. Figure 5.11 illustrates some of the different climatic extremes that NI Water has had to contend with over the last few years. Regular flooding after intense rainfall in the summer months. Prolonged periods of dry weather causing water scarcity/ supply issues. Freeze-thaw events following sustained periods of sub-zero temperatures causing thousands of bursts and major supply interruptions. Wild gorse fires in the peat lands in the catchment during periods of hot dry weather causing ash/residue to enter the raw water source.

**79.** Each of these climatic extremes brings its own set of challenges for NI Water. NI Water is therefore expected to consider the vulnerability of its services to these hazards and other risks and assess the resilience of its water and sewerage assets and systems to inform future investment requirements.

**80.** With the size of NI Water’s infrastructure and asset base it is necessary to prioritise future investment to improve resilience. The first priority is to improve the resilience of the water supply. The second priority is to prevent internal sewer flooding (e.g. due to a pumping station being flooded) and the third priority is to prevent pollution (e.g. due to treatment works or pumping stations being flooded).

**Figure 5.11: Recent Climatic Extremes**



7 mths



5 mths





**WSS 4A proposed measures:**

- Assess the resilience of water and sewerage services, assets and systems to extreme weather events and other risks to inform future investment requirements.
- Commence a programme of investment to improve and maintain the resilience of the wider water and sewerage asset base and systems prioritised as follows: (i) Water supply; (ii) Prevention of internal flooding; (iii) Prevention of pollution.

**WSS Policy 4B:**

Effective incident planning and preservation of services

**Major Incident Planning**

- 81.** Investing in resilience (WSS Policy 3A) will help improve infrastructure/asset performance during climatic extremes. However even if all the water infrastructure were to be replaced immediately, operations would still continue to be affected during extreme weather events. It is therefore important that NI Water can effectively handle major incidents in order to preserve service delivery.
- 82.** In 2010 the Department issued a Direction<sup>16</sup> to NI Water setting out requirements for preserving service delivery. This includes guidance for the water industry to make plans and provisions for mitigating the effects of a civil emergency and to preserve services. It is important that NI Water complies with guidance issued under this Direction. It

<sup>16</sup> The Preservation of Services and Civil Emergency Measures (Relevant Undertaker) (Northern Ireland) Direction 2010 [http://www.drdni.gov.uk/the\\_preservation\\_of\\_services\\_and\\_civil\\_emergency\\_direction\\_2010\\_final.pdf](http://www.drdni.gov.uk/the_preservation_of_services_and_civil_emergency_direction_2010_final.pdf)

is equally important that all consumers (householders, businesses and industry) play their part. For example, the public needs to be aware of the importance of insulating pipes in preparation for winter to prevent and mitigate leakage and bursts in a freeze thaw.

**Bottled water supplies being distributed in December 2010**

- 83.** To ensure their ability to provide a customer-focussed response in the event of a major incident, NI Water continually reviews its Major Incident Plan (MIP). Regular exercises are undertaken to validate the Company's major incident management arrangements, the most recent being October 2013, to test its effectiveness in responding to a major wastewater incident.

**Safe and Secure Assets**

- 84.** The Department provides guidance to NI Water on the procedures and measures it expects to be put in place in respect of security of water assets and supply. The guidance sets out the priorities for NI Water in respect of security procedures and plans to minimise the risk of contamination and to preserve the provision of water to the population of Northern Ireland. It is expected that these measures will be implemented over the course of the 2015-21 period and beyond.

**85.** Recently NI Water has experienced increased instances of metal theft including copper wiring from telemetry sites and iron covers from manholes. This not only impacts on service delivery but also has health and safety implications. It is therefore important that NI Water ensures its assets and infrastructure are safe and secure and it complies with any Guidance issued by the Department.

**WSS 4B proposed measures:**

- Maintain and review effectiveness of emergency plans, systems and processes to preserve service delivery during a major incident.
- Continue to educate and increase public awareness about the importance of insulating supply pipes to prevent bursts and leakage during freezing conditions.
- Ensure water and sewerage assets and infrastructure are safe and secure and comply with any Guidance issued by the Department.

## WSS AIM 5:

### Utilise NI Water Assets to Provide Wider Benefits for the Environment and the Community

- 86.** To provide water and sewerage services to approximately 818,000 households and businesses across Northern Ireland (NI), NI Water owns large areas of land associated with its assets and infrastructure. With over 8,600 hectares, NI Water is the second largest land owner in NI and has a key role in protecting and improving the environment and promoting biodiversity. Much of its land is located around water resources in protected<sup>17</sup> areas such as the Mourne Mountains and offers recreational opportunities for the community in terms of walking and hiking.
- 87.** In managing its estate, it is therefore important that NI Water takes account of the need to enhance biodiversity and also explores opportunities for greater provision of amenities for the community where appropriate. This includes ensuring that any future upgrades to assets in protected areas are in sympathy with the local landscape and biodiversity requirements. The photo below is of Fofanny Water Treatment works in the Mournes. This underground facility treats and supplies water to over 100,000 people and is fed from the Fofanny Dam Reservoir. The award winning design has ensured that the treatment works has been integrated into the local landscape with minimal visual impact.

Fofanny Water Treatment Works in the Mournes



<sup>17</sup> This includes: Areas of Special Scientific Interest (ASSIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Nature Reserves, Marine Nature Reserves (MNRs), Ramsar Sites, Natura 2000 Sites, Areas of Outstanding Natural Beauty (AONBs) & World Heritage Sites.

88. This aim is about utilising water and sewerage assets (including land) to provide wider benefits for the environment and the community without compromising service delivery. This is to be implemented through the following proposed policies (WSS 5B – 5D).

### WSS Policy 5A:

Manage the NI water estate to promote recreation, biodiversity and cultural heritage

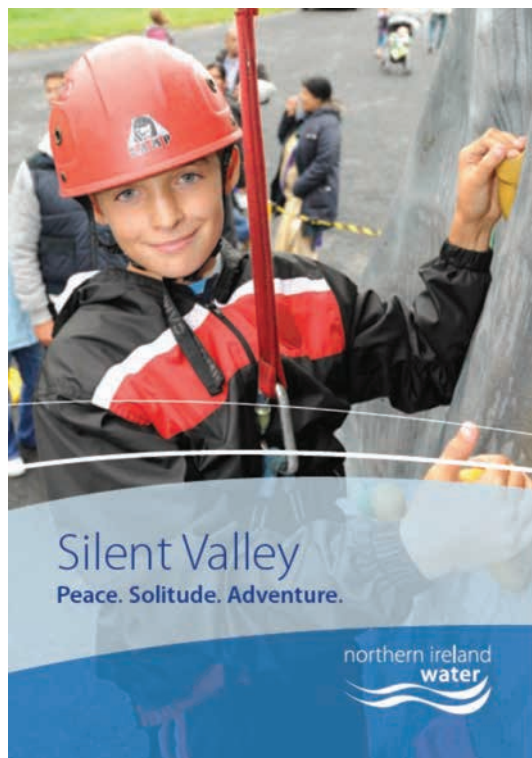
#### Estate Management Strategy

89. It is important that NI Water recognises the wider public value of its land for recreation, biodiversity and cultural heritage. Whilst delivering core services is paramount, land and assets can be managed to deliver these wider benefits which are often referred to as ecosystem services. Ecosystem services are covered in more detail in proposed EP Policy 5E in Part 4 of the strategy. NI Water should develop and implement a long-term estate management strategy in partnership with key stakeholders to enhance the recreational, biodiversity and cultural/social benefits of its land and assets.

#### Recreation and Access

90. Given the area, location and dispersed nature of land and assets owned by NI Water, members of the general public have, and will continue to seek access to its lands and waters for recreational activities. The long term policy is for NI Water to permit members of the public, organisations and groups access to its land to facilitate recreational activities. However, access should only be provided where it is safe to do so and where financial resources permit, taking into account the need for safeguarding the quality of drinking water supplied to its

customers and the need to protect the environment. NI Water’s Recreation and Access Policy<sup>18</sup> sets out the way public access arrangements are communicated and controlled, and provides the public with clear guidance that governs recreational activities and access on the Company’s lands and waters. The policy also provides a formal application mechanism for the public to use any NI Water owned land or body of water for recreational purposes.



91. Members of the public already enjoy access to NI Water’s estate whether it be walking in the Mourne or fishing at reservoirs. One of the biggest successes is Silent Valley Reservoir. Located within the Mourne Area of Outstanding Natural Beauty, this has become a major attraction with around 50,000 visitors each year. NI Water provides a number of visitor facilities at the location including a restaurant, information centre, conference centre and education centre.

18 <http://www.niwater.com/great-days-out/>

### Protect and Maintain Biodiversity

92. As with all public bodies, NI Water is required to protect and maintain biodiversity on its landholdings and its influence on biodiversity outside these. As one of Northern Ireland's largest land owners, the way in which NI Water manages its landholdings and operations can have direct and indirect impacts on the environment. A large proportion of NI Water landholdings have an inherent biodiversity value, containing a wide range of habitats and species. A significant area of blanket bog and upland heathland is found in the catchments of reservoirs, much of which is within designated nature conservation sites. Some priority species are found only in NI Water land. Examples include Yellow Marsh Saxifrage (*Saxifrage hirculus*) on the Garron Plateau and several mosses such as Prickly Earth-moss (*Ephemerum spinulosum*), which are found around the margins of reservoirs. Land adjacent to treatments works, buildings and other infrastructure also has the potential to provide important habitats for wildlife.
93. NI Water should therefore look for opportunities to enhance or restore biodiversity. There is much that can be achieved without incurring significant additional costs that can minimise damage, conserve existing features and enhance other features. This includes developing partnerships with relevant environmental organisations to achieve conservation aims and priorities. NI Water has developed a Biodiversity Action Plan that sets out its biodiversity objectives. This plan should regularly be reviewed to meet new or existing biodiversity requirements in line with the Wildlife and Natural Environment Act (Northern Ireland) 2011.

### Sustainable Catchment Area Management Planning

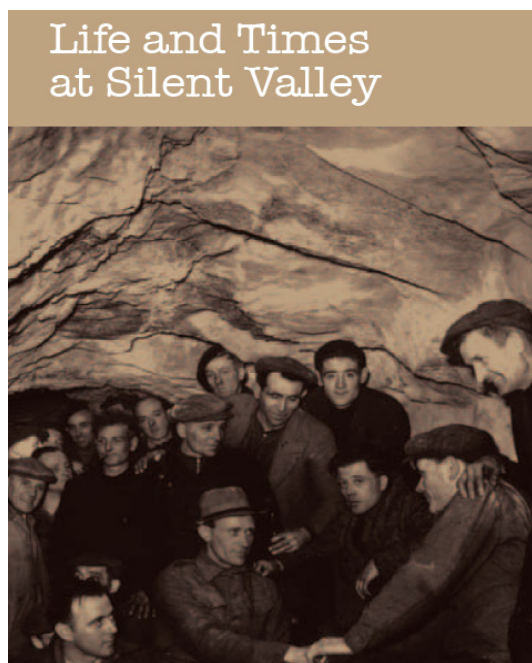
94. Sustainable Catchment Area Management Planning (SCAMP NI) is a project based methodology by which potential drinking water quality issues are resolved at source through land management based solutions rather than traditional high cost, high energy treatment options. This is often a more cost-effective and energy efficient way of tackling water quality issues. It also offers additional benefits in terms of enhancing and restoring biodiversity. Through its SCAMP NI project, NI Water is working in partnership with a number of organisations, including the Royal Society for the Protection of Birds (RSPB), the Mourne Heritage Trust, the Woodlands Trust, and Ulster Wildlife Trust, on a number of projects. This includes the Garron Plateau where blanket bog is being restored to reduce organic matter being washed into the water source. This not only helps to protect and improve water quality but also protects the peat bogs which are essential habitats for plant and animal life. NI Water is also working in partnership with other organisations to manage the risk of wild fires within its catchments. The long term policy is to extend the SCAMP NI project to all drinking water catchments sources. These proposals are set out in more detail in DW Policy 1C in Part 2 of the Strategy.

### Cultural Heritage

95. NI Water is the guardian of over of 100 recognised historic sites within its estate. These include historic buildings, historic monuments and industrial heritage sites and assets. The Northern Ireland Executive is committed to setting a good example in the care of the 'heritage assets' it owns. In June 2012, updated guidance for Government Departments and agencies

on how to fulfil this commitment was published, the 'Protocol for Care of the Government Historic Estate'. NI Water should plan to implement the protocol and celebrate its heritage as the current provider of Northern Ireland's water and sewerage services and how these services have developed over the last century.

96. Through site visits to its treatment facilities and the education centres at Silent Valley and the Heritage Centre at Duncrue Street NI Water already promotes the heritage of the water industry. The Local's Room within the Silent Valley visitors centre is dedicated to the workers who built the reservoirs. It tells the local history of the building of the reservoirs and what life would have been like for the workers and their families.



### WSS 5A Proposed Measures:

- NI Water should develop and implement a long-term estate management strategy in partnership with key stakeholders to enhance the recreational, biodiversity and cultural/social benefits of its land and assets.
- Permit access to NI Water land/assets to facilitate recreational activities where it is safe to do so and financial resources permit taking into account the need to safeguard water quality and protect the environment.
- NI Water should look for opportunities to enhance or restore biodiversity within its estate including developing partnerships with relevant environmental organisations to achieve conservation aims and priorities.
- Continue to develop partnerships with other public, community and voluntary sector organisations to deliver sustainable catchment initiatives including extending the SCAMP NI project to all drinking water catchments (see DW Policy 1C in Part 2).
- NI Water should continue to implement its Biodiversity Action Plan which should be reviewed regularly to meet new or existing requirements in line with the Wildlife and Natural Environment Act (Northern Ireland) 2011.
- Adopt and implement the *Protocol for the Care of the Government Historic Estate* and develop a long term plan to bring assets covered by this, where necessary, up to a suitable standard and maintain them going forward.
- Explore opportunities to celebrate the local water industry's influence on the social, cultural, industrial and natural heritage of Northern Ireland.

## WSS Policy 5B:

Using surplus water and sewerage assets to provide recreational benefits for the community

**97.** As a result of operational improvements including putting new assets and infrastructure in place, NI Water can be left with various redundant assets including surplus land and reservoirs. Although these assets may be no longer needed for the provision of water and sewerage services, they may have wider recreational and amenity value to the community. This policy is about ensuring that where possible, relatively low value redundant assets that have recreational value are retained by the public sector for use by the community.

**98.** NI Water owns 49 impoundment reservoirs some of which are now out of service and listed for sale in its Estate Management Plan (EMP). Even though these assets are out of service, they continue to require funding each year for routine maintenance work. These costs are likely to increase with the new inspection and maintenance requirements in the Executive's proposed Reservoirs Bill<sup>19</sup>. This takes much needed funding away from NI Water's core services. The current policy is to sell these assets to generate much needed income and remove their annual maintenance costs. However assets such as reservoirs can have important amenity or recreational value to the local community which may be lost if they are sold.

**99.** As a regulated utility, NI Water is currently expected to secure the highest possible price for surplus assets by selling them on the open market. The proposal is to



amend the current water and sewerage assets disposal policy to enable relatively low value assets that have high public amenity and recreational value to be transferred within the public sector at a reduced cost and retained for use by the community. This policy would be in line with the Executive's new Community Asset Transfer policy<sup>20</sup> which was published in May 2014. However, it will be important that any decision to transfer an asset within the public estate (and not sell on the open market) will be considered on an individual basis and take into consideration a number of factors that require NI Water's EMP to be revised, including:

- Recent economic issues impacting upon land values;
- The introduction of the NI Reservoirs Bill which will regulate the

19 <http://www.dardni.gov.uk/riversagency/index/reservoirs-bill-ni.htm>

20 <http://www.dsdni.gov.uk/print/community-asset-transfer-policy-framework.pdf>

maintenance of all reservoirs;

- The public amenity value of a number of 'out of service' reservoirs; and
- The liability costs and risks associated with 'out of service' reservoirs.

**100.** To inform future decisions over asset disposal, assessments should be completed for all surplus assets with potential recreational/amenity value (such as reservoirs) taking account of the above factors.

### **Consultation Question WSS5**

Do you agree that surplus water and sewerage assets (such as reservoirs) should, where possible, be transferred within the public sector and retained for recreational use by the local community?

### **WSS 5B proposed measures:**

- Progress the assessment of 'unused' reservoirs to determine the approach to disposal.
- Develop policy to ensure surplus water and sewerage assets with recreational value are transferred within the public sector where appropriate.
- Ensure future NI Water Estate Management Plan (EMP) is aligned to Executive policy on disposal of assets including Community Asset Transfer.



# Glossary

<b>Biodiversity</b>	Is the variety of all living things.
<b>Catchment</b>	The area drained, either naturally or with artificial assistance, by a watercourse, including all drainage channels, tributaries, floodplains, estuaries and areas of water storage.
<b>DRD</b>	Department for Regional Development.
<b>Ecosystem</b>	This is a community of living organisms (plants, animals and microbes) in conjunction with the nonliving components of their environment (things like air, water and mineral soil), interacting as a system.
<b>Ecosystem Services</b>	An interdependent system of living things including people, animals and plants in their physical environment.
<b>European Directive</b>	European Directives are laws which apply in European Union countries. Examples include: the Drinking Water Directive; the Urban Waste water Treatment Directive; the Water Framework Directive and others.
<b>Impoundment Reservoir</b>	A reservoir with outlets controlled by gates that release stored surface water as needed.
<b>NIEA</b>	The Northern Ireland Environment Agency.
<b>NI Water</b>	Northern Ireland Water.
<b>Raw Water</b>	Water abstracted for drinking water purpose before treatment.
<b>Service Reservoirs</b>	A service reservoir is a water storage container for water that's been treated in a water plant but not yet sent to the customer.
<b>Water Resource Management Plan</b>	A water resources plan shows how a water company intends to maintain the balance between supply and demand for water over the next 25 years.
<b>Water Framework Directive</b>	The European Water Framework Directive is a wide-ranging piece of legislation covering all water bodies including rivers, lakes, estuaries, coastal waters and ground waters. It was established in law in Northern Ireland in 2003 through the Water Environment (WFD) Regulations (Northern Ireland) (SR 2003 No. 544).
<b>Waste Water Treatment Works (WWTWs)</b>	The treatment plant or site where wastewater is treated.
<b>Water Treatment Works (WTWs)</b>	The treatment plant or site where raw water is treated to provide safe and wholesome drinking water for public supply.

## **Water Policy and Shareholder Division**

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