

# SCOTTISH WATER JOURNEY

*Ed Ptolomey, Mott MacDonald*

---

## ABSTRACT

With a population of over 6 million, Scotland's water customers are spread over 78,789 square kilometers of land including islands, rural countryside and dense populated cities. Measured and benchmarked against the UK Private water companies within the regulated marketplace this single water authority continues to perform well utilizing best practice from the private and public sectors. This paper will explore how consolidation, best practice and a drive to succeed can yield significant savings in a highly regulated market.

This paper sets out the journey of how Scottish Water transformed from multi council ownership to a single water authority owned by the Scottish Government whilst yielding in excess of 25% savings during the first 4 years of existence. It will identify the challenges and opportunities faced during the transformation whilst delivering a higher level of compliance to its customers.

## KEYWORDS

**Scottish Water, Formation, compliance, Supply Chain, Capex, Opex, Rationalization, Working Practices, Program, Regulation, Asset Ownership, Savings, line management, consolidation,**

## 1 INTRODUCTION

With a population of in excess of 6 million Scotland's water customers are spread over 78,789 square kilometers of land including islands, rural countryside and dense populated cities. The challenges of providing quality water and treatment of wastewater are similar to that faced in New Zealand, however, Scottish Water committed to provide the same level of service to all of its customers regardless of where they were located.

The Local Government (Scotland) Act 1994 was an Act of the Parliament of the United Kingdom which created a local government structure of 32 unitary authorities covering the whole of Scotland. Within the same act 3 water authorities were created from the district councils North, East and West of Scotland water. This was the start of a journey which saw the three water authorities merged in 2002 to form Scottish Water which owned by the Scottish Government delivered in excess of 25% savings within the first 4 years of existence whilst achieving a higher level of compliance.

Scottish Water operates within a regulatory framework established by the Scottish Parliament in which Scottish Ministers, acting on behalf of the people of Scotland, set the objectives for the industry to be delivered at least cost to customers. Key players in this regulatory framework are Scottish Water's economic regulator, the Water Industry Commission for Scotland; the Drinking Water Quality Regulator; the Scottish Environment Protection Agency; the customer representative body, Citizens Advice Scotland; and for investigation of complaints, the Scottish Public Services Ombudsman.

In Scotland, public drinking water and sewerage services are provided by a public sector corporation, Scottish Water, which is accountable to Scottish Ministers and through Ministers to the Scottish Parliament. In England and Wales these services are delivered by private companies.

## **2 SCOTTISH WATER FORMATION**

The main driver for the formation of Scottish Water came after an assessment of the quantitative investment required to upgrade and replace the existing assets to meet the new quality regulations being introduced. There were also projections that further enhancements were scheduled through future legislation. On the basis that the water charges are proportionally distributed per capita head, this would have seen water charges increase out of proportion and beyond an acceptable level based within the existing boundaries of the North, East and West of Scotland water companies. In particular the North charges were not sustainable for the level of investment required. The options on the table were either to form two water companies by incorporating the North into East and West or by forming one water company in order to accommodate the necessary investment required over a greater number of customers. The result was the formation of one water Authority “Scottish Water”. At the time of its formation Scottish Water employed 5,648 people and served 5 million customers in homes and businesses.

In order to meet the funding restrictions and limit a future increase in water charges (benchmarked against Private Water companies in England and Wales) Scottish Water formation set out the challenge of an overall 40% saving within the first 4 years of existence. This applied to both Opex and Capex savings. The investment program set out investments of £2.3B over 4 years from 2002 to 2006. The efficiency challenge was set to deliver the Capital program for £1.8B or less identifying over 22% savings. The Opex budget for Scottish Water was £380.5m with a net operating cost target of £265m. In order to deliver these saving a paradigm shift would have to take place.

### **2.1 HIGHER LEVELS OF COMPLIANCE**

The higher compliance levels were being set by European Standards which dictated the required level of which all of the United Kingdom water authorities were required to meet. During the time of Scottish Waters formation there were several key pieces of legislation namely ‘The Water Supply (Scotland) Regulations 2001’ and ‘The Urban Wastewater Treatment Scotland Amended Regulations 2003 Act and The Bathing Waters (Scotland) Regulations, this accounted for the majority of the investment required to meet the new legislation. These acts set out the standard and the associated timescales which would see Scotland’s water customers receiving a high quality product through more stringent compliance. It would also set out the investment program, which would see unprecedented levels of capital investment to achieve compliance within the timescales.

### **2.2 SUPPLY CHAIN JOURNEY**

In order to transform the Scottish Water Industry and deliver unprecedented capital annual investment you require a paradigm shift. It was recognized that such a shift would not be achieved through traditional procurement relationships. The outcome of this was to enter into a joint venture partnership ‘Scottish Water Solutions’ where Scottish Water was the main shareholder. The main objective of this joint venture was to deliver the Capital investment program for £500m less than the £2.3B whilst still delivering the agreed outputs of the program. One of the unique features of this joint venture was that Scottish Water employees would be seconded into Scottish Water Solutions.

Scottish Water awarded the joint venture to Stirling Water Consortium (Thames Water, M J Gleeson, McAlpine and KBR) and the UUGM consortium (United Utilities, Galliford and Morgan Est). Thus building on the experience of delivering within a regulated environment based on the English and Welsh regulated markets.

Within the first two years of operating Scottish Water had saved £71m in operating costs, equivalent to 20% less than that the equivalent costs of the 3 former water companies. In 2006 Scottish Water had delivered £494m of capital efficiency savings during the period of April 2002 to March 2006 equivalent to 21.5% and net operating costs had been reduced by £99.3m £15m short of the target of £115.5m.

### **3 CAPEX SAVINGS**

In order to achieve the capital saving required a review of the 3 previous water authorities Capital Programs and their assumptions and status took place alongside their asset management plans. Obtaining a common platform to examine opportunities based on assumptions and a common level of service outcomes was the first major task. The following areas were the main ones which yielded the most savings:

- Rationalization of the assets
- Rationalization of working practices
- Strategic review of investment beyond the current 4 years
- Engagement of the Supply chain partnerships to deliver programs of work (Scottish Water Solutions)
- Regulatory challenge- Level of quality and approach.
- Organizational change- Asset ownership operating model
- Innovation through spend to save

#### **3.1 RATIONALIZATION OF THE ASSETS**

A review of the information held within the previous 3 water authorities in terms of level of compliance, growth projections and the asset management plan took place. There were many areas identified in which ‘quick wins’ could be achieved through minor or no investment most on outer common borders of each of the companies. Several assets could be decommissioned or disposed of with very little investment to obtain a much more effective solution. These included extension to existing mains to dispose of water treatment works, cross connections and pumping stations to accommodate existing flows and growth to wastewater plants. There was also an estate disposal income through redundant assets.

#### **3.2 RATIONALIZATION OF WORKING PRACTICES**

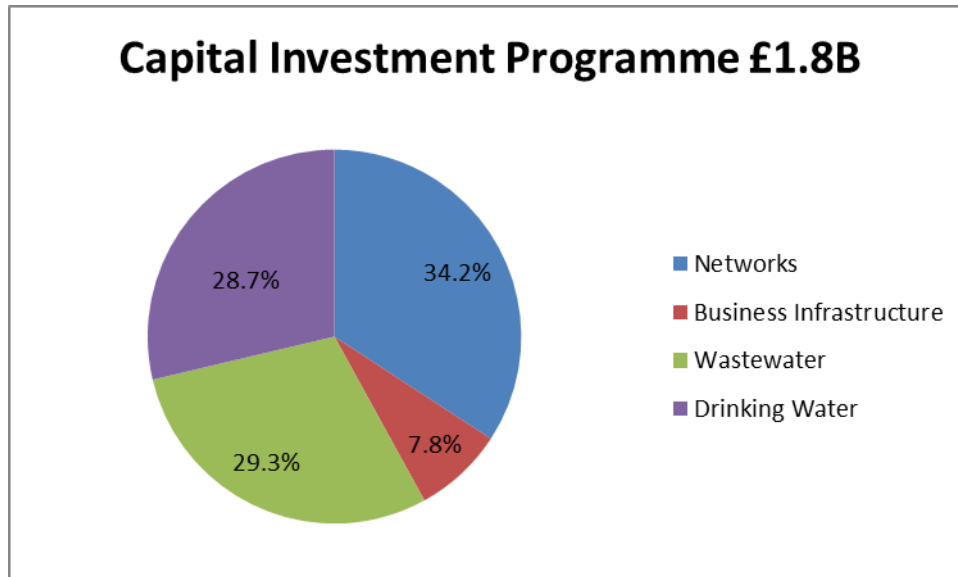
A review of working practices saw rationalization of IT systems with circa of 300 applications being reduced down to 80. The preferred software being adopted for ‘Scottish Water’ model delivering some savings in license monies and service user maintenance. Working practices were reviewed and consolidated including asset life standards, specification standards, work in progress, capital allowances and a major review through the development of common governance framework (new Capex gateway process) to ensure savings were realized through a controlled supply chain.

#### **3.3 STRATEGIC REVIEW OF INVESTMENT BEYOND CURRENT 4 YEARS**

Deferment on future investment where more integrated solutions were possible was a key area of savings. In order to achieve this you need to know the unit cost of the production or disposal of water and wastewater respectively which was not fully developed for all previous water companies. Even more basic than unit cost was a common asset inventory quantities, naming conventions, and current condition. These are the basic building blocks for lead indicators in driving compliance and will enable decisions to be made on serviceability and ‘cost of failures’. Large sections of routine work were not seen as contributing to compliance it was undertaken through habit or local arrangements.

#### **3.4 ENGAGEMENT OF THE SUPPLY CHAIN PARTNERSHIPS TO DELIVER PROGRAMS OF WORK**

One of the biggest areas to yield economies of savings and compliance was through the supply chain. Engaging delivery partners to deliver programs of work, rather than on a project by project basis, delivered synergies, achieved reductions on site set ups, provided smoother resource profiles and more buying power. A key aspect of this was the engagement of Scottish Water Solutions joint venture which consisted of clients/contractors/consultants/companies with regulatory water experience of delivering in the English & Wales PLC water market. The main aim of this was to gain 10 years’ experience using asset management best practice aligned with regulatory knowledge by delivering a £2.3B Capital program for £1.8B.( *Figure 1*).



*Figure 1: Capital Investment Program*

### **3.5 REGULATORY CHALLENGE LEVEL OF QUALITY AND APPROACH**

In some areas historical stringent designation consents had been put in place by Scottish Environmental Protection Agency (SEPA) and the Drinking Water Quality Regulator (DWQR) for wastewater and water respectively. Successful challenges on delivery of scope and timing were made which saved and deferred unnecessary investment until later years for areas such as shellfish directive and some habitat directive designations, and therefore the main savings were on the wastewater side. Experiences through delivery partners help make Scottish Water an ‘intelligent client’ in terms of regulatory reporting and history of previous areas of opportunities within the first 4 years window.

### **3.6 ORGANIZATIONAL CHANGE – ASSET OWNERSHIP MODEL**

The most significant organizational change and operational shift was the change from capital and opex model driven business to that of asset ownership and operating model. This shifted the balance of power to planning and tried to move reactive cost investment to more planned and long term. This model defined the need to obtain critical information on assets to enable more informed decision to be made on capital interventions. This shift required organizational change by putting key people in asset management positions; this area was not fully implemented during the initial formation. It became more successful during the second asset management plan in 2006 to 2010.

### **3.7 INNOVATION THROUGH SPEND TO SAVE**

Innovation was promoted throughout with ‘spend to save’ initiative where individual business cases were promoted based on pay back criteria. £16.9m of projects were promoted in the first year. As well as saving monies Scottish Water examined their revenue sources. Diversification through using the sewer network to host broadband cables and the consideration of using Scottish Water land for wind farms were promoted as new revenue schemes.

## **4 OPEX SAVINGS**

This area saw quite a significant change in working practices, where people worked and how people worked. The establishment of the Scottish Water Council involving managers, union and employees was a key enabler in the transformation program. The Scottish Water Council comprised of the Chief Executive, Human Resource Director together with trade union representatives and employees established its remit based on the principles of partnership and bearing in mind the effects upon Scottish Water employees. The following areas contributed to Opex savings

- Refinement of operational areas
- Re-organization of line management
- Rationalizations and reprioritization of routine tasks
- Reduction in staff through redeployment and natural waste
- Asset management of inventory
- Consolidation of common services

### **4.1 REFINEMENT OF OPERATIONAL AREAS**

Rationalization of the defined operational areas saw boundaries redefined. The new water and wastewater areas were not fully aligned as a 'source to tap' approach was used to define the boundaries along with the old council's constituent areas. This resulted in fewer working personnel throughout Scotland due to overlap. Consolidated response teams for networks and maintenance teams along with the rationalization of operators both in water and wastewater all contributed to a reduction in operating costs.

### **4.2 REORGANIZATION OF LINE MANAGEMENT**

Following on from the refinement of operational areas was the re alignment of line management. This saw a significant rationalization of supervisors, foreman, team leaders and managers and general managers. The top level of duplication was removed in the first few months of the formation (3 people shared similar roles). For example the Operational Director position at West of Scotland Water was considered for the general manager of the west region Scottish Water. More refinements were made as the company matured. In order to maintain customer relationships a key customer management team delivered a one to one service to large business customers through key account managers.

### **4.3 RATIONALIZATIONS AND REPRIORITIZATION OF TASKS SOLELY AIMED AT COMPLIANCE**

A review of working practices initially from a desk top study driven from the need to reduce operational overheads revealed that they were a considerable amount of routine tasks which in the short term and were seen as not contributing to compliance. These were viewed as not essential operational tasks. By removing the labour time and redistributing or in most cases deferring the tasks significant operational savings were made. For example historic routine flushing of mains where previous renewals had taken place.

#### **4.4 REDUCTION IN STAFF THROUGH REDEPLOYMENT AND NATURAL WASTE**

The introduction of a Voluntary Severance Scheme to enable the reduction in staff numbers was drafted, agreed and implemented. A no compulsory redundancy policy was in place and we believe at least in principle still remains in place. Within the first 2 years 20% overall reduction in staff was achieved whilst maintain a high level of service. Reduction in numbers was encouraged through early retirement packages offered to staff over the age of 55 which was refined to 50. Another package existed for under 50's where compensation in terms of a lump sum was available.

#### **4.5 ASSET MANAGEMENT OF INVENTORY – INFORMATION WAS SIGNIFICANT**

What became obvious from the early stages of the formation of Scottish Water was that the previous company although they collected similar data they did this through various different sources and variety of different ways. Rationalization of how and in particular why data was being collected was undertaken. However in the early stages it was not fully apparent that this data was the key to driven efficient and effective working. This soon became an issue and critical decisions on interventions were made more difficult as the key information in which decisions were made was only partially available or had gaps.

#### **4.6 CONSOLIDATION OF COMMON SERVICES**

One obvious area of savings was the duplication of the common services. Areas such as customer services, laboratories, legal services, human resources and finance were all potential areas where savings could be made. A review of the property strategy saw the closure of the Glasgow laboratory reducing the number to five. In order to ensure smooth transition and to save in additional overheads the council authorities retained billing and collection of water rates. This allowed minimum change to current bills. In order to realize other potential areas of savings and assess the level of savings possible the rationalization of systems and practices had to be made. This was a big risk area as the public although aware that this change was taking place, customer still required an acceptable level of service to their customer enquiries. This was one of the biggest challenges as internally the previous knowledge of where to obtain information was now turned upside down.

### **5 CONCLUSION**

It has been five years since the author left Scottish Water. As a company Scottish Water continues to perform well against privately owned water companies and provides a model template for high performance publically owned companies. Within the first two years of operating Scottish Water had saved £71m in operating costs, equivalent to 20% less than that the equivalent costs of the 3 former water companies. In 2006 Scottish Water had delivered £494m of capital efficiency savings during the period of April 2002 to March 2006 equivalent to 21.5% and net operating costs had been reduced by £99.3m £15m short of the target of £115.5m.

#### **REFERENCES**

The Local Government etc. (Scotland) Act 1994.

Local Government etc. (Scotland) Act 1994 Part 2 Water and Sewerage Reorganization.

Water Industry Commission for Scotland, a body corporate established under section 1 of the Water Services etc. (Scotland) Act 2005

European Communities Act 1972

The Water Supply (Water Quality) (Scotland) Regulations 2001

The Urban Waste Water Treatment (Scotland) Amendment Regulations 2003.

The Bathing Waters (Scotland) Regulations 2008

Scottish Water Annual Report and Accounts 2003/04.