Notice is hereby given that a meeting of Hamilton City Council will be held on:

Date:	**Thursday 30 July 2015**
Time:	**1.30pm**
Meeting Room:	**Council Chamber**
Venue:	**Municipal Building, Garden Place, Hamilton**

Council

OPEN ATTACHMENTS

ATTACHMENTS UNDER SEPARATE COVER

Note: The attachments contained within this document are for consideration and should not be construed as Council policy unless and until adopted. Should Councillors require further information relating to any reports, please contact the relevant manager, Chairperson or Deputy Chairperson.

CRANLEIGH
CORPORATE FINANCE & ADVISORY

Business Case For Water Services - Delivery Options

Mott MacDonald

Part A: Summary Report

MARTIN JENKINS

Issue date: 6 May 2015

Confidential

Table of Contents

Confidential

Confidential

1. ACKNOWLEDGEMENT

1.1 Introduction

Cranleigh, in partnership with Mott MacDonald and Martin Jenkins, was commissioned in November 2014 to undertake a study on behalf of Hamilton City Council, Waikato District Council and Waipa District Councils (Councils). The study was to determine how each Council should manage water, wastewater and stormwater services across the sub-region. Three options were to be investigated: retaining the status quo, boosting shared services and forming a council owned CCO.

In developing this business case we have had the benefit of extensive discussions with both officials and selected elected members from the three Councils and other external contributors. We would like to thank them for their substantial commitment of time and knowledge towards the project. This has been supported by the oversight and leadership of the project Governance Group.

1.2 Qualifications

- We have not been asked to consider water metering nor tariff structures which are outside of the scope of this business case. None of our recommendations require or are contingent upon the implementation of water metering.
- We have also not been asked to consider any form of privatisation of water services. We note that privatisation of water services is prohibited by the Local Government Act 2002.
- Consideration of water rights or the allocation of water are also outside the scope of the project.

1.3 The Team

Cranleigh

Cranleigh is a leading Australasian advisory firm which has strong company valuation and commercial structuring skills. The firm also includes a specialist infrastructure advisory team. Cranleigh advise both public and private sector organisations to develop large scale infrastructure projects across multiple sectors. Water infrastructure has formed a core part of Cranleigh's practice and the firm has successfully completed water, waste and stormwater asset projects in both New Zealand and Australia.

Mott MacDonald

Mott MacDonald is a global management, engineering and development consultancy business that has 16,000 staff in 180 principal offices that provide local experts to 140 countries. Mott MacDonald has a specialist asset management advisory team working across multiple sectors internationally. With substantial water industry experience across many jurisdictions globally, Mott MacDonald provide strategic advice enabling organisations to manage their assets efficiently and effectively.

Martin Jenkins

For more than two decades Martin Jenkins has specialised in providing high calibre evaluation, public policy and organisational strategy and design services to clients in New Zealand and beyond. The firm's team of 40 consultants has a wealth of in-depth knowledge and skills in evaluation, research, economics, public policy, financial and organisational management.

Confidential

DEFINITIONS

2 Waters:	Water and wastewater
3 Waters:	Water, wastewater and stormwater. Also refers to 3 Waters Strategy produced by Hamilton, Waikato and Waipa Councils in 2012.
Base Case:	The most likely financial forecasts CCO scenario which uses conservative assumptions for opex and opex savings.
BBC:	Better Business Case methodology developed by NZ Treasury NIU.
BLG:	Better Local Government. A Government programme initiated in 2012 aimed at improving the efficiency and effectiveness of local government. The first changes to the LGA were enacted in December 2012 and a further Amendment was enacted in August 2014.
Capex:	Capital expenditure
CCO:	Council Controlled Organisation. An entity in which one or more local authorities control 50% or more of the voting rights or has the right to appoint 50% (or more) of the organisation's directors.
Councils:	This refers to Waikato and Waipa District Councils and Hamilton City Council.
Discount Rate:	A percentage annual rate used to calculate the present value (PV) of cash flows which will occur in the future. For this business case a nominal (including inflation) rate of 8% per annum has been used.
EAG:	Expert Advisory Group. A group appointed by the Government in 2012 to investigate how local government infrastructure could be delivered in the most cost effective manner in a growing economy. It reported in March 2013.
ESS:	Enhanced Shared Services. An option where the Councils would pool most of their water teams in one unit to manage most water services for all three Councils.
Forum:	The Waikato Mayoral Forum represents 11 local authorities in the Waikato Region – Hamilton, Hauraki, Matamata-Piako, Otorohanga, South Waikato, Thames-Coromandel, Taupo, Waikato, Waipa, Waitomo, and Waikato Regional Council.
Gearing:	A measure of how indebted an organisation is, calculated here as debt divided by equity times 100. E.g. if you owned a house worth $500,000 and had a mortgage of $200,000 you would have a gearing ratio of 66.6% calculated as $200,000 ÷ ($500,000 - $200,000) X 100.
FTEs:	Full time equivalent staff members.
Future Proof:	The name given to the three councils working together on growth issues in and around Hamilton – Hamilton, Waikato, Waipa.
LASS:	Local Authority Shared Services
LGA:	Local Government Act 2002
LGC:	Local Government Commission. The Commission is an independent statutory body whose main role is to make decisions on the structure and representation requirements of local government in New Zealand.
LOS:	Level of Service. In its 2007 publication *Developing Levels of Service and Performance Measures*, the National Asset Management Steering (NAMS) Group defines Levels of Service as the descriptions of the service output for a particular activity or service area against which performance may be measured. In broad terms it can be thought of as standards for service quality, delivery, reliability and resilience.
LTP:	Long-Term Plan. 10 year plans that councils are required to prepare and update every 3 years. Current plans are being produced (in draft form) for the 2015-25 period.
MSA:	Management Services Agreement. This is an agreement where a service provider agrees to manage a range of services for another party for an agreed term for a fee.

	The range of services under a single agreement can be wide ranging and might include the provision of all necessary, staff and equipment. These may be used during the sale of a business where the vendor agrees to provide management services for a time until the purchaser can set up their own arrangements. Another common example is where a property investor owns a hotel building, but a hotel company operates and manages the facility under contract.
NIP	National Infrastructure Plan. A national, strategic infrastructure plan issued in 2011 covering five key areas –Transport, Telecommunications, Energy, Water and Social. A 2015 NIP has been released for consultation.
NIU:	National Infrastructure Unit. A department within Treasury reporting to an independent National Infrastructure Board, which in turn reports to the Minister of Infrastructure.
Nominal Dollars:	A value expressed in monetary terms for a specific year or years, without adjusting for inflation.
Not-for-Profit:	A not-for-profit organisation is one that does not earn profits for its owners. All of the money earned by or donated to a not-for-profit organisation is used in pursuing the organisation's objectives. Typically not-for-profit organisations are charities or other types of public service organisations. Note that a not-for-profit organisation may actually report a profit or income surplus in any given year so that it can raise funds for growth and investment to further benefit its objectives.
O&M:	Operations and maintenance.
ODRC	Optimised Depreciated Replacement Cost. A method of valuing fixed assets.
Opex:	Operational expenditure – the ongoing, routine costs incurred in managing an activity. It includes maintenance, loan servicing, depreciation and administration expenditure.
Options:	The three options which are the subject of this business case i.e. Status Quo, ESS and CCO.
Positive Case:	A more optimistic financial forecasts CCO scenario which uses more optimistic assumptions for opex and opex savings than the Base Case.
PV:	Present Value. Value today of a cash flow or series of cash flows that will occur at some future date or dates. It is calculated by applying a Discount Rate which takes into account of how risky or how likely it is that the cash flow will occur.
Real Dollars:	Dollar amounts which have been adjusted for inflation.
SOI:	Statement of Intent. A key public document agreed between a CCO and its council shareholder/s describing the activities and intentions of a CCO for the year. It will typically include key performance indicators (KPIs) that the CCO is expected to meet. It also provides the basis of accountability for the CCO's performance.
Sub- Region:	The sub-region refers to the three districts of Waikato, Waipa and Hamilton.
TLA:	Territorial Local Authorities
VFM:	Value for Money
Vested Assets:	Assets that are transferred to a public entity at nominal or zero cost. Typically, this might result from a situation where a developer has installed assets as part of developing a site and passes them to a public entity to manage, maintain, and deliver services through. (Source: Audit NZ)
WDC:	Waikato District Council
WOL:	Whole of Life
WPDC:	Waipa District Council

Confidential

2. EXECUTIVE SUMMARY

2.1 Introduction and Key Recommendations

Introduction

Water is critical resource in meeting our every day needs. Water availability is also a key enabler of economic growth. Increasing population growth, infrastructure costs, and competing water uses present substantial challenges for water management in New Zealand and internationally. In 2014, Hamilton City Council (HCC), Waikato District Council (WDC) and Waipa District Council (WPDC) co-funded this report, to assess three separate management options:

- Retaining the status quo with each council running its own operations (Status Quo);
- Boosting the councils' existing shared services into an enhanced shared services model (ESS); and
- Considering forming a council-owned Council Controlled Organisation to run water services on behalf of all three Councils (CCO).

This report considers if water, wastewater and urban stormwater (3 Waters) can be managed and governed in a different way that will generate demonstrable qualitative and financial benefits for everyone. It is not about changing the ownership of these long-term assets to a private company as privatisation of council-delivered water services is against the law in New Zealand. The water assets will remain under council ownership in either the ESS or under the CCO option which will be 100% owned by councils.

This report is laid out in two parts: Part A comprises an executive summary and report summary that outline the findings, which are presented in greater detail in Part B, using New Zealand Treasury's Better Business Case (BBC) format.

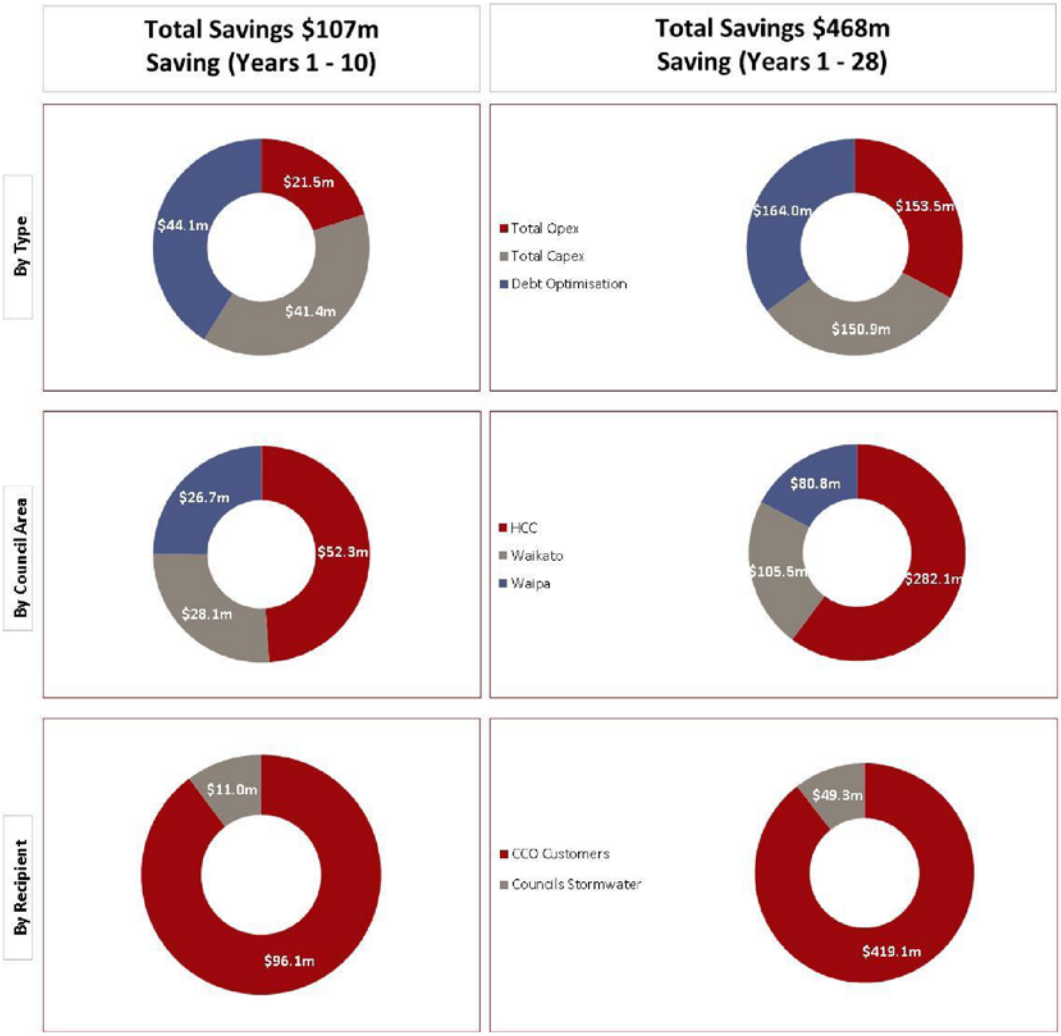
Key Recommendations

- Councils should transfer their water and wastewater assets into a jointly owned not-for-profit CCO; and
- Councils should retain ownership of their urban stormwater assets, but outsource management of those assets to the CCO on a cost recovery basis.

Key Benefits of a Rate-Payer Owned CCO over Other Options

- **Lower 3 Waters charges produce savings for Councils and water customers** – as set out in the charts overleaf. The charts show the potential savings that a CCO offers over the Status Quo. This is made up of operational and capital expenditure savings for the 3 waters and the use of debt optimisation within the CCO to further reduce charges to water customers. Stormwater savings are passed on to the respective councils through lower operating and capital expenditure costs.
- **A stronger water network across the whole sub-region** – improved resilience is one of the single most important benefits offered by the CCO model over the other two options. It enables key strategic decisions to be made to develop a more stable water supply and robust network by exploiting sub-regional network synergies using a single coordinated Asset Management Plan.
- **Cleaner water and wastewater benefits customers, ratepayers and the environment** – a CCO would address below standard drinking water and non-consented sewage discharges across the sub-region as a key priority. This is an advantage for communities over the Status Quo where water expenditure priorities have to be balanced across other council funding requirements. An ESS model will not automatically re-balance those priorities as funding decisions will remain with councils.

Confidential



- **Attract and retain talented staff** – the CCO will provide for better career opportunities, and create greater concentration of more specialised skills. This will overcome a current problem of the Status Quo. The ESS model would address this issue to a lesser extent than the CCO.
- **Economic development** – a single-focus organisation is better placed to support economic growth in the sub-region by offering an improved 3 Waters network and integrated planning, but only if the governance model ensures the CCO is fully 'mapped' into each council's economic priorities.
- **Centre of excellence available to share expertise with the region** – a CCO will create a centre of excellence, and when acting in a line with the three Councils' policies, will be able to share its expertise with other water authorities in the region on a cost recovery basis.

Confidential

2.2 Summary of Analysis

The Strategic Case for Change

There have been a number of reports commissioned by the Waikato Mayoral Form. All these reports recommended changes to improve the efficiency and effectiveness in water delivery. The latest report (April 2014) recommended that the three Councils investigate establishing a council owned CCO to jointly manage water, wastewater and urban stormwater infrastructure.

A number of factors have been instrumental in the commissioning of this report. These include:

- **Population and economic growth.** Continuing growth is forecast for the sub-region which will require expanded water services. Already Councils can not provide water for new water intensive industries in the sub-region. The ageing population will also have an effect on average incomes making affordability of services even more important.
- **Environmental and Regulatory Compliance.** All councils have faced challenges in this area with WDC and WPDC drinking water for most communities failing to meet NZ drinking water standards or being unrated. In addition, most wastewater treatment plants are only partially compliant with their resource consents.
- **Capital Investment**. Due to the above issues, plus the need to replace aged infrastructure, the three Councils forecast capital expenditure over the next 10 years to total $764 million in their draft 2015-2025 Long Term Plans (LTPs). This compares with a forecast of $495 million in the 2012 – 2022 LTPs.

Status Quo

The Status Quo is providing a basic level of water services. However, because of its limited scale, the Status Quo cannot as effectively meet the challenges listed above. A report to the Mayoral Forum in 2012 showed there was considerable scope to improve the effectiveness and efficiency of 3 Waters and generate significant operational and capital expenditure savings.

Enhanced Shared Services

Working alongside Council members and staff, a feasible ESS model was developed. Under this model most water staff would become employees of a 'host' council that would run the ESS unit on behalf of all three councils. Each council would continue to bill or rate its own customers. Each council would fund all costs of running its own network and associated capital expenditure. A key attribute of this model is that important and far reaching planning and investment decisions will remain with individual councils.

Analysis indicates that the ESS model, across the 3 Waters, can generate operating expenditure savings of $64m over 28 years and estimated capital expenditure savings of $40m over 28 years.

Summary: This option, if successfully implemented, is an improvement on the Status Quo but is not recommended. Coordination costs including reconciling different operating standards and priorities across the councils could easily exceed the savings. The success of an ESS model would be wholly dependent upon strong cooperation and goodwill between member councils over many years. Shared services models are rarely successful over a longer term because they rely on the goodwill and collegiately of all parties and a very strong process of joint decision making.

Water CCO

A model for the establishment of a CCO was based on discussions facilitated primarily at three workshops conducted with council members. Features of a water CCO are:

- The CCO should take the form of a 'Limited Liability' entity with no power under its constitution to declare and pay any dividends to its shareholders. The CCO will act as a non-profit organisation.

Confidential

- It will effectively be a co-operative in favour of water customers although customers will not be members or shareholders.
- The shareholders of the CCO will be each of the three councils. Careful governance will be required to address the delicate power – independence relationship between each council and the CCO. The CCO requires sufficient independence to deliver on its requirements whilst remaining accountable to each council. This can be managed through an annual Statement of Intent (SOI) process.
- The CCO will purchase the water assets and liabilities of the three councils. This will involve a transfer of those assets and related liabilities by each council to the CCO.
- The CCO will manage its own balance sheet and debt.
- The CCO will be overseen by an independent, professional board of six directors and a chair that are appointed by all three councils, and managed by a CEO reporting to the board.
- The CCO will aim to deliver services and operations at the lowest cost while still maintaining prudent management. Key decisions about the water and wastewater will become the responsibility of the board, based on an agreed SOI with the councils.

We considered the CCO being a non-asset owning entity, but did not recommended this, as experience shows that while some savings can be achieved, only full network, operational and financial integration will generate substantial benefits.

Risk Assessment

A risk evaluation workshop was conducted with council finance and engineering staff in February 2015. Based on the results of that workshop and further analysis the risk evaluations of the options are:

- **Status Quo**. Rated as more risky than the CCO option, but lower risk than ESS. While regarded as sub-optimal, the Status Quo option avoids the coordination and multiple agendas of the ESS model. Risk rating: Medium.
- **ESS.** Rated as more risky than the Status Quo. While not a substantial difference the lower scoring principally reflects the expectation that the coordination and multiple council agendas will make it more difficult to manage and mitigate the identified risks over the long term. Risk rating: High.
- **CCO**. Rated as the least risky option. The option scored best or equal best in most categories reflecting the stronger governance, independent structure, business focus and resourcing. Risk rating: Low.

Conclusion & Recommendation

The BBC methodology was used in the analysis, including the use of multi-criteria analysis to fairly score non-quantitative factors in the decision process. A decision support workshop was held with council personnel to agree and weight the relative importance of a range of criteria against which to assess the options. Based on the total analysis Cranleigh assessed a combined multi-criteria score for each option. The results are shown below with the risk assessment and financial results:

Confidential

Decision Factor	Status Quo	ESS	CCO
Multi – Criteria Score	58%	60%	82%
Combined Savings (10 years)	NA	$27m	$107m
Combined Savings (28 years)	NA	$104m	$468m
Present Value of Capex & Opex Savings	N/A	$35m	$91m
Risk Rating	Medium	High	Low
Overall Ranking	**2**	**3**	**1**

ESS has an overall ranking less that the Status Quo as possible financial benefits are offset by the risks. The risk/reward ratio does not justify a change from the Status Quo.

The CCO has the highest ranking and therefore is recommended by Cranleigh as the preferred option. It meets all the agreed investment objectives well, is lower risk and offers substantial financial benefits.

Key advantages include:

- Water services are an activity with substantial economies of scale. The CCO option is the only one which offers scale across all key areas including staffing, systems, operations, and network ownership and funding.
- A CCO structure is also the only option which brings a full Waikato sub-regional view and solution supported by a robust and responsive governance structure. ESS goes some way towards this, but lacks strong governance and a single unified network.
- Major cost savings for water customers and councils due to opex and capex savings and the optimisation of funding structures made possible by a specialist, asset owning entity. Cost savings are supported by evidence from similar amalgamations overseas and in New Zealand as identified in the Mott MacDonald's engineering report.
- Stormwater forms a very small part of the water team's activity and does not have its own revenue stream. We recommend that the management of urban stormwater activity other than planning should be moved to the CCO where procurement and management efficiencies can be generated.

Confidential

3. INTRODUCTION

3.1 Background to Business Case

In April 2014 an independent report to the Waikato Mayoral Forum recommended three Waikato councils – HCC, WDC and WPDC – investigate establishing a council-owned, CCO to jointly manage water, wastewater and stormwater infrastructure.

In 2014, the three Councils agreed to co-fund a study looking at a CCO, as well as two other options. The three options to be investigated were:

- Retaining the status quo with each council running its own operations;
- Boosting existing shared services into an enhanced shared services model (ESS) between the Councils; and
- Considering forming a council-owned CCO to run water services on behalf of all three Councils.

The study was not asked to consider establishing a private water company because the privatisation of council-delivered water services is against the law in New Zealand.

This report presents the results of that study. The findings and recommendations follow five months of investigation and analysis by a team of industry, commercial, financial and engineering practitioners supported by a peer review by Australian and UK experts.

Strategic Context

There is strong government interest in water. The 3 Waters are a key sector of the 2011 and draft 2015 National Infrastructure Plans, regionalisation recommendations by the Local Government Infrastructure Expert Advisory Group (2013) and detailed review of water by the Office of the Auditor General (OAG) (2014). New Local Government legislation was introduced in 2014 to encourage collaboration between councils and better asset management. The OAG estimates that by 2022 the gap between asset renewals expenditure and depreciation for the local government sector could be between $6 billion and $7 billion.

A number of factors have been instrumental in the commissioning of this report. These include:

- **Population and economic growth.** Continuing growth is forecast for the sub-region which will require expanded water services. Already Councils can not provide water for new water intensive industries which may wish to locate in the sub-region. The population is also ageing. This will have an effect on average incomes making affordability of services even more important.
- **Environmental and Regulatory Compliance.** WDC and WPDC face real challenges in this area with drinking water for most communities failing to meet NZ drinking water standards or being unrated. In addition, most wastewater treatment plants are only partially compliant with their resource consents although HCC is generally compliant.
- **Capital Investment.** Due to the above issues, plus the need to replace aged infrastructure, the three Councils are planning major capital investment over the next 10 years. In total, $764 million is forecast to be spent on water infrastructure by the three councils over the next 10 years.
- **Prior advice**. In April 2014, a report commissioned by the Waikato Mayoral Forum recommended that the three councils investigate establishing a council-owned, CCO to jointly manage water, wastewater and urban stormwater infrastructure.

Cranleigh was appointed in November 2014 to develop an independent, detailed and robust business case that builds on the findings of the previous analysis and provides a detailed evaluation and set of recommendations for the delivery of water services across the Hamilton, Waikato and Waipa districts.

Out of scope was any review of tariff structures including water metering or fixed rate options, community engagement including iwi engagement or consideration of water allocation within the catchment.

3.2 Business Case Scope and Approach

Three options have been evaluated:

- Status Quo – Current situation where each council manages its own water activities (Status Quo).
- Enhanced Shared Services (ESS) – Builds on the existing current very limited shared service arrangement by including most core water activities, but excludes: development engineering, compliance, customers services and statutory and resilience planning.
- Council Owned Water CCO – Councils transfer water assets to a jointly-owned entity (CCO).

Approach

The business case has be developed using the BBC methodology developed from UK and Australian best practice and mandated for all government departments by the NZ Treasury National Infrastructure Unit. BBC requires that five modules or "cases" be completed to ensure all points are covered.

The project scope (see Part B, Appendix 1) details the outcomes required from this report. Essentially the three councils required a detailed and robust business case that builds on the findings of the previous analysis and provides a detailed evaluation and set of recommendations for the delivery of water services across the Hamilton, Waikato and Waipa districts. A set of clear, actionable recommendations is required.

Cranleigh divided the activities into a number of work streams designed to best utilise and focus the skills of project team members and council staff.

- **Engineering.** The engineering assessment identified the asset-related and service issues and challenges associated with the water, wastewater and storm water services and assessed the implications for future long-term investment and operating costs for both the combined entity and the individual councils. This assessment was used to determine the capital and operating costs to be used in our financial modelling and to determine the economic case for change from the current water model.
- **Financial Model Development.** Comprehensive financial models were developed at both the sub regional and individual council levels. Financial models were essential tools in forecasting the financial impact of changes to the water and wastewater systems for each council (whether sub regional integration occurs or not). Ernst & Young conducted a peer review of the financial model for completeness, accuracy and logic.
- **Financial Structure.** A number of factors determine the optimum financial structure for an asset owning CCO. These include net revenues and their predictability, initial asset values, initial debt, future funding needs, acceptability to capital markets and equity between customer groups and between councils. Our financial model provided us with the ability to test different funding assumptions over the forecast period. We used a prudent financial management approach combined with water industry benchmarks to determine prudent maximum debt ratios.
- **Structures and Organisational Design.** Good governance arrangements will be essential to the success of both the ESS and CCO. Good governance requires professional oversight of management and the appropriate representation of the interests of the three councils and the water service customers that they represent. Pro forma organisational structures were developed for the CCO and ESS options with staff numbers being established by mapping existing staff positions for the Councils to the relevant CCO and ESS functions. Duplicate positions were then removed and benchmarks applied to estimate future staffing requirements.

Cranleigh conducted six focused workshops with the Councils to carefully consider all important aspects of the project. More detail on the workshops is provided in Part B Appendix 3 including the participant groups.

Confidential

4. CURRENT SUB-REGIONAL WATER SYSTEM

4.1 Description

Key measures for the combined water, wastewater and stormwater (3 Waters) activities are shown below.

Council	Total Staff FTEs	Water Connections	% of Ratepayers Connected	2015 Revenue $m	June 2015 Total Waters Debt $m	June 2015 3 Waters Fixed Assets $m	June 2014 Deprec. As % of Replacement Cost	June 2015 Waters Debt/ Equity
Hamilton	126.8	49,161	83%	51.2	110.7	1,002.1	37%	12.4%
Waikato	50.7	11,277	37%	22.0	42.6	220.1	37%	24.0%
Waipa	39.5	13,171	61%	19.8	(5.2)	195.5	49%	2.7%
Total	217.0	73,609		93.0	148.1	1,417.7		12.6%

Key points:

- Many ratepayers are not water customers.
- HCC also hosts the existing shared services unit which includes around 14 FTE staff.
- All councils have modest or low water debt.
- All have major capital expenditure programmes.
- Hamilton is around two thirds of the sub-regional water business.

4.2 Current Focus

All three councils are putting a lot of focus on improving compliance, Level of Service (LOS) and managing growth in their draft LTPs. This includes a substantial capex programme of $764m over the next 10 years. At the same time councils have been committed to exploring sub-regional solutions.

4.3 Key Challenges

The challenge is to make the necessary investments in a timely way; without severely affecting affordability either for customers or over taxing council debt capacities. At the same the time attraction and retention of qualified staff remains vital.

4.4 Pros and Cons

Councils have capable local teams who perform well, but lack sufficient scale to gain true efficiencies. A sense of local ownership exists, but there is not an exclusive focus on water given the needs of other council activities. The water teams can readily support other council activity such as roading and cover part of the councils' general overheads.

The Status Quo is a workable solution, but one which will always offer only basic service delivery and performance and at a higher cost to ratepayers and connected customers than other options.

Confidential

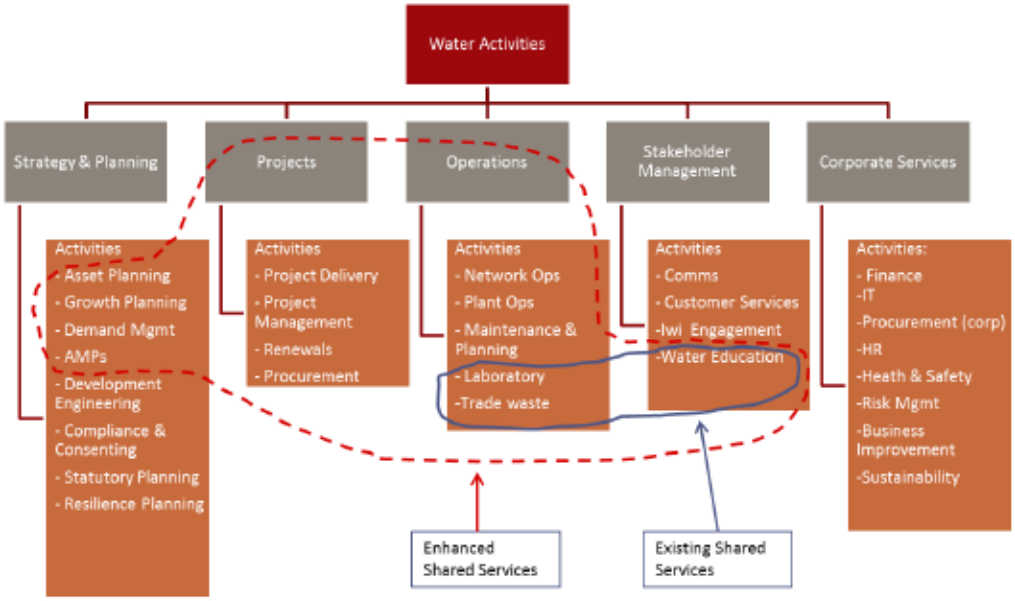
5. DELIVERY OPTIONS

5.1 Enhanced Shared Services

The three councils already operate a limited shared service arrangement providing joint resourcing for water education, laboratory analysis and trade waste. These activities are provided by HCC for all three councils and costs are shared on an agreed basis.

Aided by discussions with council staff, Cranleigh has scoped and developed a feasible ESS model. Services included in the model and other aspects of the model were developed from three workshops conducted with council members and staff.

The diagram below illustrates the range of activities required to successfully deliver water services. The solid blue line indicates services currently provided on a shared basis and the dashed red line indicates services that could be included in an ESS model. The remaining activities are either support services which could best be provided by one or more councils or considered inappropriate for shared services given councils' continuing ownership of the assets and revenues under this model.



Key features of the ESS model are as follows:

- The model will not involve the establishment of a separate legal entity (CCO or company) to deliver the shared services. Instead, a 'host' council would deliver the shared services for the benefit of all three councils;
- Relevant staff would be employed by the providing council with costs shared on a pro rata basis;
- Councils retain ownership of their own water assets, collect associated revenues and raise and repay any necessary debt;
- The General Manager ESS would formally report to a senior manager or CEO in the host council and he or she would be an employee of that council.

Confidential

5.2 CCO

Cranleigh developed a model for the establishment of a council owned CCO, following three workshops conducted with council personnel. Key features of a water CCO are:

- The CCO should take the form of a 'Limited Liability' entity with no power under its constitution to declare and pay any dividends to its shareholders. The CCO will act as a non-profit organisation.
- It will effectively be a co-operative in favour of water customers although customers will not be members or shareholders.
- The three councils will own 100% of the CCO shares.
- The shareholders of the CCO will be each of the three councils. Careful governance will be required to address the delicate power – independence relationship between each council and the CCO. The CCO requires sufficient independence to deliver on its requirements whilst remaining accountable to each council. This can be managed through an annual Statement of Intent (SOI) process.
- The CCO will purchase the water assets and liabilities of the three councils. This will involve a transfer of those assets and related liabilities by each council to the CCO.
- The CCO will manage its own balance sheet and debt.
- The CCO will be overseen by an independent, professional board of six directors that are appointed by all three councils, and managed by a CEO reporting to the board.
- The CCO will aim to deliver services and operations at the lowest cost while still maintaining prudent management. Key decisions about the water and wastewater will become the responsibility of the board, based on an agreed SOI with the councils.
- After a transition period the CCO will bill customers directly under tariff structures approved by an Establishment Committee or succeeding council monitoring arrangements. A proposal for water meters may only be introduced with the approval of individual councils.
- The CCO will make provision for other councils from the region to join later.

The option of the CCO being a non-asset owning entity was investigated, but not recommended as experience shows that while some savings can be achieved, only full operational and financial integration including network operational standards integration and rationalisation will generate substantial benefits. These are cost savings, network and procurement efficiencies and, the funding optimisation that can only come when the revenues are controlled and assets owned by one entity..

5.3 Stormwater

We have been asked to evaluate the options with or without urban stormwater. The Status Quo is a 3 Waters model where each council owns and operates its own water, waste water and stormwater assets.

Planning for stormwater services is closely aligned with urban and rural planning and roading network planning – these activities will remain with the three Councils. Much of the capital works programme for stormwater infrastructure is also aligned with, and often forms an intrinsic part of roading works across the sub region.

Renewals, O&M and capital investment could be ring-fenced as a service that could be provided by an ESS or a CCO option under a management services contract. The provision of the services would essentially be cost neutral through either of these two options.

While major assets are employed in stormwater, management of them forms a very small part of the water team's activity, and as such us unlikely to deliver professional development and economies of

scale. For these reasons, the management of stormwater activity should be moved to the ESS or CCO option where procurement and management efficiencies should apply.

Furthermore the delivery of stormwater services are essentially a public good service where the revenue to provide the service is collected via the land rates and cannot (in the most part) be directly associated with individual properties. This makes it problematic for a CCO to own the stormwater assets as it will always be dependent on councils to provide sufficient funding to operate, develop and maintain the assets.

Also both the CCO and its directors could be sued or prosecuted for health and safety or environmental breaches associated with these assets and it is very unlikely a professional director could be persuaded to accept full responsibility for the assets without control of the funding. Consequently we recommend that the CCO should not own stormwater assets. As the ESS business unit is not a legal entity, it cannot own other councils' stormwater assets.

Given the above we recommend:

- Councils retain ownership of their stormwater assets.
- The ESS or CCO manages urban stormwater operations and maintenance and other agreed stormwater capital works under Management Service Agreements with each council on a cost recovery basis.
- Each Council retains the planning for stormwater infrastructure in house where appropriate as part of their urban and roading network planning.

Confidential

6. ORGANISATION AND GOVERNANCE

6.1 Status Quo

All three councils currently operate their water activities as cost centre departments within council. They benefit from the support of corporate services such as HR, IT and accounting and they are ultimately responsible through the Chief Executive to the elected council.

The current Status Quo model provides for the three councils to collaborate on a sub-regional basis for water education, laboratory and trade waste services. This provides a limited basis for generating improved service outcomes and financial benefits.

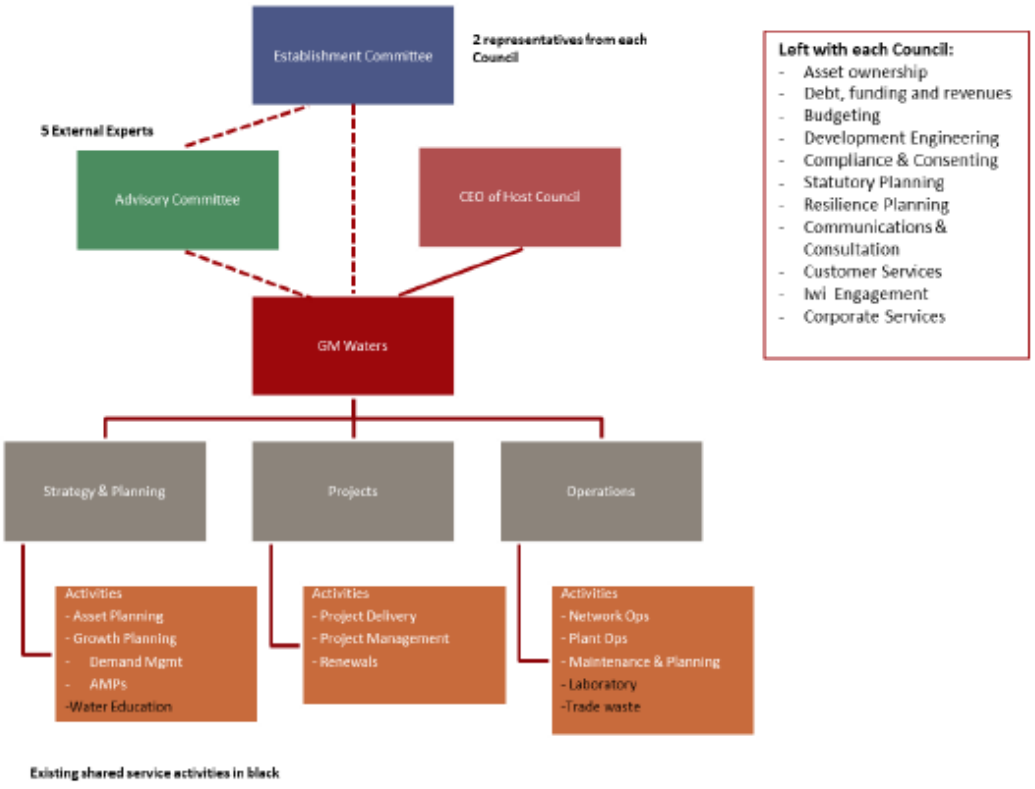
Because water activities form part of council operations there is a sense of local ownership in the community regarding the water activities. The water departments can also be supportive of other council activity and have the ability to liaise directly with other council departments such as planning, roading and to assist economic development.

However, while each of the Councils has capable teams they lack the scale to develop as real centres of excellence and gain true efficiencies.

6.2 ESS

Structure

A high level overview of the proposed ESS structure is set out below:



The peak co-ordinating mechanism would be the Establishment Committee consisting of two representatives from each council. This committee would review and approve a consolidated asset management plan for the sub-region together with LOS, budgets and capex priorities. This will be a crucial forum for resolving conflicting priorities between councils that will inevitably arise. The need for the committee should be reviewed once the ESS unit is well established and its functions could be absorbed into existing shared services arrangements.

There are likely to be some staff savings from establishing an ESS unit. It is expected that these will principally be at the senior team leader level as the combined teams will only need one leader. Savings of 10 FTE staff have been assumed to give cost savings of $850,000 per annum. This has been assessed on the basis that only five people will be required to fill each of the top five leadership positions in the ESS unit compared to fifteen across the three Councils. Further savings are unlikely due to the coordination efforts that will be required to serve the three different councils.

Governance

ESS offers the potential to create a larger, more specialised team that can become a centre of excellence across the sub-region but it will present some challenges from an organisation and governance point of view.

The ESS unit would be a council business unit operating within the host council, able to adopt a more comprehensive and commercial approach to delivery of management services through an expanded scope of services, noted above. However, the business unit does not have powers to contract beyond that of the Council of which it is a part. All major contracts for work undertaken for the other two councils would need to be approved by the relevant host council. Council staff are employees of the council and therefore act under the authority of their respective CEO.

Management Service Agreements (MSAs) would be required between the host council and the other two councils covering the work that the ESS unit will be undertaking and how each council will pay for these works and services. While the MSAs would have fixed terms, they would normally roll over under standard renewal provisions. Even so, the Councils would have the ability to withdraw from the ESS arrangement in the future if desired.

We recommend that the councils appoint a small advisory board of five external members to provide professional guidance on the operation of the business unit. The key issues to be addressed are network growth, operations and water pricing. The cost of this has been allowed for in our modelling. Although the advisory board has no legal standing with regard to directing the business unit they will be able to offer a range of outside industry and private sector expertise. We would expect them to meet with council staff no more than 3-4 times a year.

Under the ESS model, each council remains responsible for its water assets and related liabilities. This includes each council's power to contract, raise revenue, borrow and provide any security for borrowings. Particularly borrowings will depend on the financial standing each council.

The ESS option will require a very carefully developed set of contractual arrangements, strong governance and most of all goodwill and cooperation between the councils at both a staff and governance level, sustained over time.

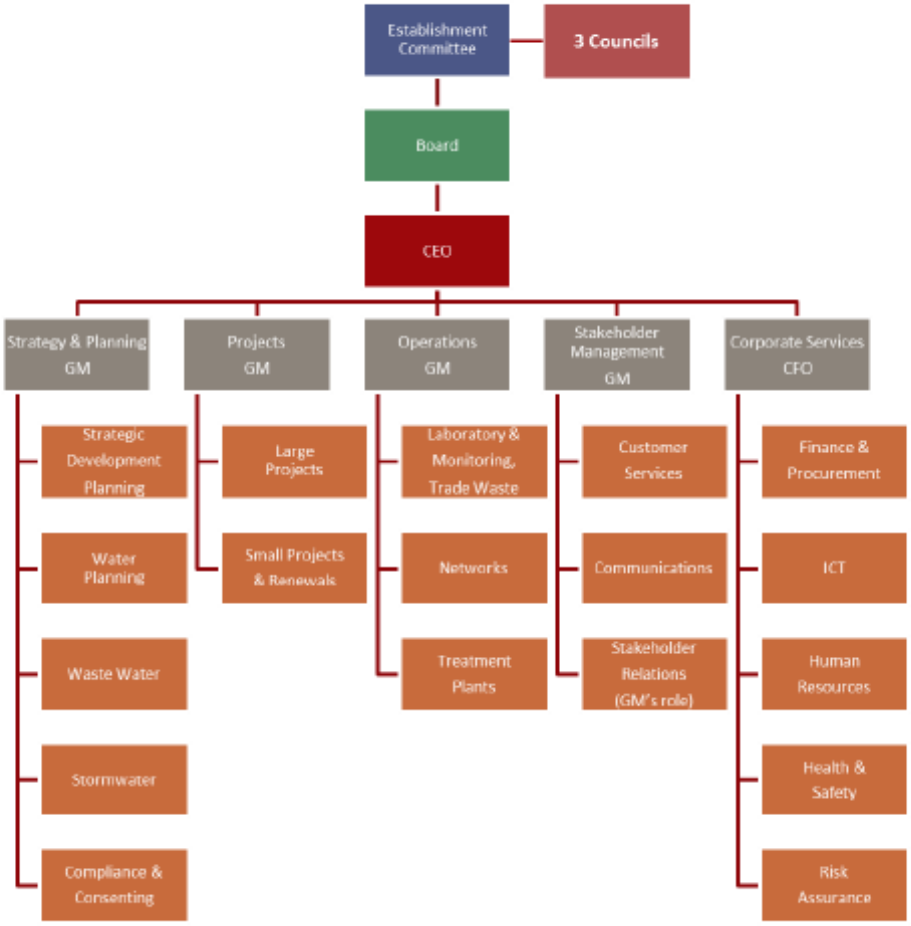
6.3 CCO

Structure

The councils currently employ 217 FTE staff in water activities. During a transition period of three years, staff numbers can be reduced to 181 by reducing duplication of roles. This will be an important cost saving that is simply not available in other options (ESS or Status Quo). It is not anticipated that significant redundancies will be required as this reduction over time is within the levels of normal annual staff turnover. To estimate required staff numbers a pro forma organisational structure was developed

Confidential

for the CCO with staff numbers being established by mapping existing staff positions in the Councils to the relevant CCO functions and teams. Duplicate positions were then removed and the required support and senior management staff numbers calculated. Finally benchmarks were applied to cross check staffing requirements. A high level overview of the proposed CCO structure is set out below.



Governance

Part 5 of the Local Government Act 2002 specifies certain governance, including monitoring, reporting and planning obligations of a CCO. Set out in Part B Appendix 4 of this report is further detail regarding the definition of a council organisation and the specific requirements of a SOI. Building on those requirements, the following organisational and governance features should be adopted under a CCO model:

- **Independent board**: The CCO must have a board of directors which operates independently of political pressures, and outside of election cycles, remaining accountable to its shareholders, as well as its community and environmental stakeholders. We recommend that six directors be appointed plus a chair.
- **Public Company Standard**: Even though the CCO is established as a non-profit operation, its governance model should emulate the high standards applicable to publicly listed companies (plc). Adopting high standards of governance including disclosure reflect the important role of the CCO as the stakeholder for public assets and delivery of essential services to rate payers. The CCO

constitution will provide for appointments and the key decisions that the board and the shareholding councils need to make. In the plc model, the prescribed procedures and timings relating to Annual General Meetings (AGM), Special Meetings and passing of resolutions to be voted on are laid down. This process should be adapted for the CCO. It is very important that the workings of a CCO are not frustrated by delay in decision making by shareholding councils (this may occur for the simple reason of trying to get items onto a council agenda). The constitution needs to bind both the CCO into providing full and frank disclosure on a timely basis to the councils while ensuring the councils make important decisions relating to the CCO on a similar timely basis. Councillors should be invited to a formal AGM where they can learn about the performance and plans of the CCO.

- **Council CCO Governance:** The current governance structure is used by the councils in governing an existing CCO; the Hamilton Airport (HA). A key feature is that the board of HA has access to the CEOs and Mayors of the councils and meet when required to inform and make decisions. The HA also can discuss day-to-day issues with the council's CCO sub-Committees. This process could be adapted to the proposed water CCO model, but given the complexity and political sensitivity of a water CCO, particularly around water pricing, Cranleigh recommends putting in place a Establishment Committee. This Committee will be important during the establishment phase to produce a series of agreed CCO outcomes, protocols and on-going management of the relationship with the CCO. We recommend that the Committee be comprised of two members appointed by each council (one of whom must be a councillor). Resolutions will be passed by a simple majority vote (two votes per council). It is recommended that members serve a fixed three-year term with a rolling rotation of tenure. Initially the committee's role will be to agree on the constitution, directors' and chair's appointment process and SOI for the CCO. Following the establishment phase, the committee will be involved on an on-going basis to discuss and monitor the CCO's performance against targets, at least annually, agree to any directors' appointments, submit Letters of Expectation, endorse proposed tariffs and updates to the SOI, as required. Establishing a Committee to take charge of this process will achieve a strong link between the Councils and the CCO that will help to manage the relationship over time. Once the CCO is well established it is possible that the Establishment Committee could be replaced by the three Councils' existing CCO and shared services monitoring structures.
- **Relationship with the shareholding councils:** while each council will devolve management of its water business (including water assets and related liabilities) to the CCO, and the CCO Board is to operate independently, the three councils should retain an important degree of influence and control. This will be achieved via annual Letters of Expectation from the Councils to the CCO board, the SOI process, the power to appoint directors and the ultimate power as voting shareholders. The SOI will reflect the CCO's direction, power and accountability, as negotiated with the three councils. This means that the CCO will be required to carry out policies and directions agreed by the Establishment Committee, using its powers under the constitution, and reporting on its activities to the councils and the public.
- **Stakeholder representation and management:** in addition to providing effective professional oversight of management, the CCO governing board must also provide for the appropriate representation of the interests of the three councils, the water customers that they service and other stakeholders such as iwi. It is also essential that appropriate co-ordinating mechanisms be put in place to ensure good co-ordination with council roading, town planning, transport and economic development activities. This is often an area of failure of poorly designed CCO structures that can take on a life of their own devoid of the wider community context.
- **Planning for Growth:** It will be important to develop strong coordinating mechanisms between the CCO and council planning functions to ensure alignment between water network development and council growth plans. These can be mandated in the CCO constitution and SOI.

Confidential

- **A not-for-profit CCO structure:** This type of CCO is essentially a cooperative in favour of water service customers. Customers will benefit from any surpluses generated from productivity improvements in the form of lower water charges. It is important to note that given the Councils' statutory obligations in water, the responsibility to provide new equity funding will remain with the councils should that need ever arise. No such need is evident in the current 30 year forecasts.
- **Significance of shareholding:** Under this arrangement the ownership of shares concerns the extent to which the funder of last resort risk should be borne by the different councils. The other aspect is the power to appoint Establishment Committee members and the level of influence in a limited number of major decisions. Initial shareholdings will be determined by the value of assets and debt contributed by each council on formation as set out in the Commercial Case. The final governance arrangements will need to allow for the possible inclusion of additional councils who may wish to join in the future.
- **Major decisions of the CCO:** Each Council will hold one third of the votes required for most day to day decisions which would be passed by simple majority i.e. any two councils will need to agree. Certain major decisions will require a super majority of not less than 75% of shareholding councils to pass. Councils' votes on these major decisions will be determined by their shareholding in the CCO. These decisions are:

  - Major transactions as defined by the Companies Act
  - Any change to the CCO constitution
  - Any issue of shares in the CCO
  - Increase in debt over a certain cap or ratio
  - Any change in the purpose of the CCO or scope of services
  - Acceptance of another council as a new shareholder
  - Any distribution of capital to shareholders
  - Taking steps to wind up the CCO

  Any implementation of residential water metering will require specific prior approval by the council concerned; it cannot be a decision of the CCO.

Confidential

7. FINANCIAL ANALYSIS

7.1 Overview

Each of the three councils operates a water business which essentially comprises of water delivery, wastewater and stormwater. By their nature they are comprised of large capital assets including water reservoirs, water pipes and water treatment plants. These typically have long lives which can extend to greater than 100 years. Given the size of these assets, careful planning and timing of major capital expenditure can have a significant influence on the effective operation of these types of businesses which benefit from strong economies of scale.

7.2 Methodology

The Financial analysis compares the financial differences between the Status Quo, the ESS and the CCO.

Financial forecasts for the Status Quo were developed for the water activities for each of the three councils using the current LTP's and 30 year infrastructure strategies. These were consolidated to provide the Status Quo view. The model has been built taking inflation into account and is expressed in nominal dollars.

ESS and CCO models were established using the Status Quo as a base and deducting estimated operational and capital expenditure savings that are potentially achievable under those structures. Operational savings were phased in gradually over three years and the costs of establishment, ongoing council monitoring costs and stranded overheads were included in the operational costs of the CCO and ESS.

Under the CCO two scenarios were developed, a conservative base case and a positive case. The positive case uses more optimistic assumptions regarding possible operating and capital expenditure savings.

In addition, under the CCO model, prudent debt optimisation was applied, to enable additional financial benefits to be passed on to customers.

The key outputs from the analysis measured the following:

- Opex and Capex savings compared to the Status Quo
- Reduction in water and wastewater charges to customers
- The present value of operational and capital expenditure savings compared to the Status Quo
- The impact on Council financial statements including key financial ratios of moving to a CCO.

The model developed is a 30 year model starting with the 2015/16 financial year. A realistic start for a ESS unit or CCO would be at the beginning of the 2017/18 financial year and the analysis undertaken compares the first ten years from 2017/18, two years beyond the current LTPs and over the total 28 year period of the Infrastructure Strategies after the CCO start date.

It should be noted that the projections for the first ten years, which are largely based on the LTPs, are more reliable than years 11-28, which are partially based on the councils 30 years infrastructure strategies which are long term estimates and have less moderation of capital expenditure.

The 28 year results should be seen as a possible outcome based on councils' current long term estimates driven by factors such as population growth rates and long term capital expenditure requirements. Changes in the years 11-28 forecasts will impact both the SQ, ESS and CCO models. For example if the capital expenditure forecasts change this will have the impact of under or overstating the potential savings in the ESS and CCO models. This is covered in the sensitivity analysis.

Confidential

7.3 Enhanced Shared Services

The Enhanced Shared Services model assumes the strategy, planning and co-ordination of water activities comes together under a single group within one council and a two year transition period is assumed.

Total Operating and Capital Savings – ESS

The following table represents the total operating and capital expenditure savings that an ESS unit is expected to generate compared to the SQ.

Total Cost Savings – ESS	First Ten Years 2017/18 – 2026/27			28 Years		
	Opex	Capex	Total	Opex	Capex	Total
	$m	$m	$m	$m	$m	$m
Base Case	14.9	12.3	27.2	64.5	39.5	104.0

The key saving assumptions include a reduction in staffing of 10 FTEs, general operating savings of 2% and general savings on capital expenditure of 1.5%. Implementation costs for the ESS are expected to be in the region of $1m.

These savings would be shared by councils on an agreed basis, perhaps as a % of water volumes or current operating and capital expenditure costs. It is assumed that savings are passed on to customers as rate reductions. Some of these saving would be reflected as lower development charges.

Savings are less than a quarter of those that could be achieved under a CCO and this is because the lack of common ownership of the network reduces operating and capex efficiencies.

7.4 CCO

The CCO model assumes that water and wastewater are owned and managed by the CCO and that urban stormwater is managed on behalf of the councils who continue to own the stormwater assets. A three year transition period is assumed. The key findings are set out below.

Total Savings

The following tables show the breakdown of savings by council area and by type of savings:

Potential Savings – First Ten Years From 1 July 2017 – Base Case	Hamilton $m	Waikato $m	Waipa $m	Total $m
Operating Costs	10.7	5.4	5.4	**21.5**
Capital Expenditure	24.9	6.5	10.1	**41.4**
Combined	**35.6**	**11.9**	**15.5**	**63.0**
Debt Optimisation	16.7	16.1	11.2	**44.1**
Total Savings	**52.3**	**28.1**	**26.7**	**107.1**
Total Savings for water customers of a CCO (inc. developers)	45.8	26.4	23.9	**96.1**
Stormwater Savings in Councils	6.5	1.7	2.8	**11.0**
Total Savings	**52.3**	**28.1**	**26.7**	**107.1**
% savings on SQ Forecast Council Revenue	6.6%	8.4%	7.7%	7.2%

Confidential

Potential Savings – 28 Years From 1 July 2017 – Base Case	Hamilton $m	Waikato $m	Waipa $m	Total $m
Operating Costs	75.6	39.3	38.5	**153.5**
Capital Expenditure	115.6	15.8	19.5	**150.9**
Combined	**191.3**	**55.1**	**58.1**	**304.4**
Debt Optimisation	90.8	50.4	22.7	**164.0**
Total Savings	**282.1**	**105.5**	**80.8**	**468.4**
Total Savings for water customers of a CCO (inc. developers)	252.5	98.0	68.6	**419.1**
Stormwater Savings in Councils	29.6	7.5	12.2	**49.3**
Total Savings	**282.1**	**105.5**	**80.8**	**468.4**
% savings on SQ Forecast Council Revenue	8.9%	9.7%	6.7%	8.6%

Total Operating and Capital Savings – CCO

The following table represents the total operating and capital expenditure savings that a CCO is expected to generate compared to the SQ.

Total Cost Savings - CCO	Ten Years – 2017/18 – 2026/27			28 Years		
	Opex	Capex	Total	Opex	Capex	Total
	$m	$m	$m	$m	$m	$m
Base Case	21.5	41.5	63.0	153.5	150.9	304.4
Positive Case	35.8	68.0	103.7	213.4	235.2	448.5

Under the base case CCO operating savings compared to the Status Quo amount to $5.3m p.a. or 11% p.a. which includes staffing efficiencies of 18% p.a., a general reduction in operating costs of 5% p.a. and reduction in overhead costs of 15% p.a. After taking into account stranded overheads and ongoing council monitoring costs the net savings amount to $4.0m per annum or 6.5% per annum. This increases to $5.5m or 9.0% under the positive case. These savings would build gradually over a three year transition period.

Capital expenditure savings average 5.7% per annum under the base case (8.9% in the positive case). This comprises general efficiency and procurement savings of 4.25% (7.5% positive) with the balance being expected synergy savings achieved by combining the networks. General savings have been based on experience gained in Australia, the UK and New Zealand with the creation of water utility companies predominately from council water departments demonstrating efficiencies and economies of scale.

Stormwater operational and capital expenditure savings, included in the above table, range between $11m and $16m over the first ten years and $49m and $68m over 28 years. These would occur in the council accounts based on their relative stormwater expenditure.

Debt Optimisation

A further benefit of a CCO verses the Status Quo will be its ability to optimise debt. This will have the impact of creating better inter-generational equity. This is done by borrowing somewhat more money today to fund capital investment to avoid such high revenue increases in the coming years. The debt can

then be prudently paid off over the long term as water assets have a very long life. We have run a debt optimised scenario in the CCO which maintains a minimum interest cover rate of 2.5 times[1] (this is the minimum interest cover ratio used by Watercare Services Ltd and is comparable to international benchmarks).

This will enable the CCO to further reduce charges to customers, over and above projected operational and capital expenditure savings[2]. It also helps to smooth increases in customer charges.

Savings to Customers

The combination of operating and capital expenditure savings in the CCO with funding optimisation will enable a significant reduction in the level of water charges to customers.

Cost to Customers $m From 1 July 2017	10 Years Base	10 Years Positive	28 Years Base	28 Years Positive
Status Quo	1,286.7	1,286.7	4,760.6	4,760.6
CCO - Base	1,190.5	1,162.3	4,341.5	4,217.9
Revenue Reduction $m	96.1	124.4	419.1	542.8
% Reduction	7.5%	9.7%	8.8%	11.4%

The potential impact on total customer charges in respect to water and wastewater collected by individual councils is estimated below. Please note that due to the complexity of water services tariffs and charges across the 3 Councils this should be taken as indicative only and subject to change.

Cost to Customers $m From 1 July 2017	10 Years Hamilton	10 Years Waikato	10 Years Waipa	Total
Status Quo	687.7	305.1	293.8	1,286.7
CCO - Base	642.0	278.7	269.8	1,190.5
Revenue Reduction $m	45.8	26.4	23.9	96.1
% Reduction	6.7%	8.7%	8.1%	7.5%

Based on current planned charges these indicative reductions would broadly see HCC customers pay around $38 less per annum for water and wastewater rates, WDC customers would see a reduction of around $106 per annum (based on water usage of 215m per annum) and WPDC customers a reduction of around $68 per annum (based on usage of 215m per annum).

A transition period will be required to harmonise tariffs across the sub-region.

Development Contributions

The capital expenditure savings achieved by a CCO would apply to growth capital and could also be passed on to developers as lower infrastructure growth charges. These form part of the savings to customers in the table above. This should be at least 4.25% per annum on current levels. As the CCO would not be a council itself it would charge infrastructure growth charges instead of development contributions.

[1] Interest Cover Calculated as (Profit Before Tax + Depreciation) divided by Net Interest. As Profit Before Tax is after paying interest an Interest Cover of 2.5x indicates that operating cash flows are three times higher that Net Interest payments.

[2] Further explanation is available in Part B, Section 4.4 Funding Optimisation.

Confidential

Implementation Costs

The establishment and transition costs of forming a CCO includes the costs of set up and transitioning staff and overheads from the councils to the new entity. This is estimated at $10.3m, spread over a 5 year period from the date a decision to proceed is made. The significant costs include the set up of a new office, establishment and migration of IT systems and records, potential recruitment and redundancy costs, legal, tax and project management costs.

In addition we have estimated that stranded overhead costs in the three councils will amount to a total of $1.6m at the end of the three year transition period and we have allowed a total of $600,000 per annum for ongoing council monitoring and planning coordination costs.

7.5 Other Financial Comparisons of Options

The following table lists other key financial comparisons between the options.

Other Key Financial Comparisons	Status Quo $m	CCO Base $m	CCO Positive $m	EES $m
Present Value of Savings against the SQ (Net Operating and Capital Expenditure)		91	142	35
Present Value of Revenue Savings against the SQ		142	183	35
Annual Revenue Growth Rate	3.1%	2.3%	2.2%	3.0%
Peak Debt	304	393	381	304
Max Gearing % (debt / equity) – First 10 years	22%	30%	29%	22%

The present value (PV) of net operating and capital expenditure savings generated by a CCO for three waters are in the range of $91m and $142m over the 28 year period. The PV of the ESS is $35m.

This represents the total net savings, in nominal dollars, discounted at a rate of 8% p.a. This takes into account the costs of establishing the CCO or ESS, the annual operating and capital expenditure savings over the next 28 years and any stranded costs left with councils.

The PV of revenue savings for customers' ranges between $142m (base) and $183m (positive) for the CCO compared to the Status Quo and $35m for the ESS. This represents the net reduction to customers, in nominal dollars, discounted at a rate of 8%. Average annual growth in revenues or charges over the 28 years under a CCO would range between 2.2% and 2.3% compared to 3.1% under the Status Quo.

Peak Debt under the CCO is estimated to reach $393m or a 30% debt/equity ratio over the first ten years compared to $304m or a 22% debt/equity ratio under the Status Quo. A ratio of 30% debt/equity is considered to be prudent for a water business based on water utility benchmarks.

7.6 Taxation

Under the current Status Quo, the councils are exempt from income tax. It is important to ensure that any new CCO structure has minimal taxation implications.

Based on specialist tax advice from the Tax Team, the overall conclusion is that, provided the establishment and ongoing operation of the CCO is managed appropriately, there are unlikely to be significant, if any, adverse tax consequences. The TaxTeam's detailed advice is in Part B Appendix 6.

Confidential

8. TRANSACTION STRUCTURE

This section outlines the broad approach that the councils would need to follow to merge their water services either in an ESS unit or into a jointly owned CCO.

8.1 ESS

One council acting as the "host" council would employ waters staff from the other two councils to create an ESS unit. Management Services Agreements would also be made with the other two councils where the ESS unit agreed to manage the water services of the councils for a fee. The agreements would set out service standards and processes to agree priorities, work programmes, budgets and performance monitoring arrangements. An agreement between the three Councils would also be required covering the establishment of the unit, how it would be monitored and priority conflicts resolved.

8.2 CCO

The CCO entity would acquire each of the Councils' water assets and businesses including normal working capital. Cash would be paid to councils equal to their existing water debt including external bank debt and any negative reserves, while councils would receive shareholder loans and equity shares in proportion to the net pre-CCO equity each council has in its water business. Shareholder loans provide the councils accounting and legal simplicity and flexibility in dealings with the CCO such as when transferring vested assets. The councils would appoint one valuer to value all of the Councils' water assets using an agreed common set of criteria similar to that used by councils now.

Based on current forecasts and the above principles will result in the following payments and shareholdings in any new waters CCO.

Forecast Estimates As at 30/06/2016	Waikato $m	Hamilton $m	Waipa $m	Total $m
Council Water Assets (2 Waters)				
Total Assets Contributed	201.8	676.8	170.7	1,049.3
% of Total Assets	19.2%	64.5%	16.3%	100.0%
Council Water Debt				
Total Existing Debt	47.3	109.6	0.0	156.8
Net Pre-CCO Equity	154.6	567.2	170.7	892.5
% Equity Pre-CCO	17.3%	63.6%	19.1%	100.0%
CCO Purchase Price Paid				
Cash	47.3	109.6	0.0	156.8
Shareholder Loans	45.4	166.7	50.2	262.3
Equity Shares	109.1	400.5	120.5	630.2
Total Purchase Price	201.8	676.8	170.7	1,049.3
% Shareholding	17.3%	63.6%	19.1%	100.0%
Opening CCO Debt				156.8

9. ENVIRONMENTAL, RESILIENCE AND ECONOMIC FACTORS

9.1 Environmental & Regulatory Compliance

All the councils have suffered from some compliance issues in terms of drinking water and waste water standards. HCC is in the best shape, being the only council delivering 'Aa' graded water and with only minor wastewater consent breaches. WPDC drinking water is either ungraded or of low grading with the exception of Kihikihi. WPDC's wastewater treatment plants are generally compliant. WDC's drinking water is of low grade in most locations and a number of its wastewater treatment plants have shown inadequate effluent quality in their last audit. Tables detailing water and wastewater results by community are contained in Part B – Appendix 9.

Aware of these problems, the Councils have put considerable focus in their draft LTPs on improving compliance and managing growth. The Councils' capex programmes are designed to address these issues over the forecast period, but the risk is that future councils may decide on a change in priorities.

As ESS will be dependent on council funding and debt policies, it is expected that inroads to the environmental and compliance challenges currently faced by the Councils will be more at risk. The unit must compete for resources with other council functions and while some capex and opex savings can be expected, there is no guarantee that these funds would be applied to waters investment. Also, as with the Status Quo, there are not strong legal consequences for non-compliance by individual councils or their staff.

A CCO would be better placed to deliver improved environmental and regulatory compliance. WDC and WPDC face challenges in this area with drinking water for most communities failing to meet NZ drinking water standards or being unrated. In addition most wastewater treatment plants are only partially compliant with their resource consents. The key reason for this is directors of a CCO will become personally liable for any significant environmental and regulatory compliance breaches.

9.2 Resilience

While the Councils have the ability to address resilience issues in their own areas, some of the gains would come from optimising the network on a sub regional basis. This has proved very difficult to achieve under the Status Quo model as the individual councils command less dedicated water services resources than either ESS or CCO option; they cannot exhibit the same specialised organisational and team capabilities that better support long-term resilience.

Under the ESS option, as each council will continue to own and fund its own network (and given the difficulties in aligning council priorities to create an integrated agenda), it is expected that it could offer only a marginal improvement over the Status Quo in improving resilience.

Resilience is one of the most important benefits offered by the CCO model. It enables key strategic decisions to be made with the objective of a more stable supply and reduces the probability of failure. This is supported by the ability to exploit network synergies and using a single coordinated asset management plan and greater financial flexibility. A larger pool of staff in one entity reduces problems due to the departure of key staff.

9.3 Economic Impact

The Councils are required to provide water infrastructure in a timely manner in order to provide water services to businesses, the economic drivers for the Waikato region, as well as residential and other properties. The ESS option would operate similarly to the Status Quo currently; where further development is governed by the individual Councils' funding constraints.

A CCO has better access to resources with a single focus on water. A CCO is also not governed by funding constraints which would allow it to optimise infrastructure development projects.

Confidential

Instead of development contributions, a CCO would institute a comparable system of infrastructure growth charges to cover growth. It would have the flexibility to negotiate with developers and facilitate new infrastructure development. This would assist a CCO to proactively meet industry requirements. A CCO would be guided by a set of principles agreed by the Councils in its Statement of Intent to act in accordance with Council plans and its constitution would require it to give effect to the Councils' LTPs.

10. RISK ANALYSIS

In order to assess the risks involved in each of the options, a risk evaluation workshop was undertaken with council engineering and finance officials on Friday 13 February 2015. The purpose was to identify key risks and evaluate the consequence and likelihood of each under each of the three options. This was subsequently moderated by the project team and a scoring matrix was applied. Weights were applied to the scores which were then summed to give a total score. The lower the score; the lower the risk.

Based on this analysis (with the detailed risk assessment available in Part B – Appendix 8):

- The Status Quo option has been rated as more risky than the CCO option, but lower risk than the ESS. While regarded as suboptimal, the Status Quo option avoids the coordination problems and multiple agendas of the ESS model. **Overall risk rating: Medium.**
- The ESS option has been rated as more risky than the Status Quo. While not substantially different the lower scoring principally reflects the expectation that the coordination and multiple agendas of the model will make it more difficult to manage and mitigate the identified risks. **Overall risk rating: High.**
- The CCO option has been rated as the least risky option. The option scored best or equal best in all categories except three: customer services, planning alignment and the relative likelihood of perceived low transparency. The likelihood of customer service problems is thought to be lower than other options, but the consequence higher. $200,000 per year per council has been allowed for any additional costs incurred coordinating planning activities. The CCO option's overall risk profile reflects the stronger governance, independent structure, business focus and resourcing of a specialist, high profile water services organisation. **Overall risk rating: Low.**

Confidential

11. IMPACT ON COUNCILS

Changing to an ESS or CCO structure will have a number of effects for all councils in addition to specific financial impacts for each.

- **Resource Consents**. Under ESS this will remain a council activity, but if a CCO is formed it will be responsible for obtaining and maintaining its own consents.
- **Planning.** Under ESS statutory and resilience planning will remain with councils, but asset and growth planning will move to the ESS unit. Under a CCO model all these activities will sit in the CCO. Strong coordinating mechanisms will be required between councils other planning activities and the ESS or CCO teams.
- **Staff Losses.** Under both models many staff will move from councils to the new organisation. Under ESS there is a risk for the two "non-hosting" councils as if the ESS arrangement was dissolved they would need to quickly move to re-establish their own water teams.

11.1 Hamilton City Council

The move to a CCO will improve the key financial ratios of debt/revenue, interest cover and gearing in the accounts of the parent company of HCC. However as a majority shareholder of the CCO the council will need to consolidate the CCO accounts into its group accounts. This will have the effect of increasing the debt / revenue ratio in the group above the council's current 200% threshold. It does however remain below general local government guidelines of 250%. Other key ratios remain within council guidelines. It should be remembered that although all the CCO debt must be consolidated for accounting purposes it is not a direct repayment obligation for HCC nor dependent on HCC rates income for a source of repayment.

Year to 30 June Debt / Revenue Ratio	Status Quo	Parent	Group
2017/18	196%	194%	222%
2018/19	194%	190%	231%
2019/20	190%	179%	224%
2020/21	186%	174%	223%
2021/22	183%	162%	215%
2022/23	183%	156%	203%
2023/24	178%	163%	210%
2024/25	167%	153%	205%

On an equity accounting basis HCC's debt / revenue ratio would be the same as parent ratios above.

11.2 Waikato District Council

WDC's debt/revenue, interest cover and gearing all improve under the CCO model after the first year and improve even more at the end of the LTP period. At 2024/25 under a CCO the debt / revenue ratio is 46% compared to the Status Quo of 79%, interest cover is 22.7 under the CCO compared to Status Quo of 9.6 and gearing is 3% compared to 5% under the Status Quo.

11.3 Waipa District Council

WPDC's key financial ratios of debt/ revenue and gearing improve under a CCO both at the end of the first year and at the end of the LTP period. Interest cover, whilst still very high, reduces after the first year from 17.0 under the Status Quo to 11.8 under the CCO.

In 2024/25 under a CCO the debt / revenue ratio is 31% compared to the Status Quo of 66%, interest cover is 15.4 under the CCO compared to Status Quo of 13.1 and gearing is 2% compared to 4% under the Status Quo.

Confidential

12. OPTIONS ASSESSMENT AND CONCLUSION

12.1 Options Criteria

The financial impacts associated with each option have been quantified as far as possible and this analysis is a key component of the options assessment. However, not all impacts can be readily quantified in monetary terms. It is appropriate to also take non-monetary considerations into account. To this end, a simple form of multi-criteria decision analysis has been used to complement the financial analysis. A decision support workshop discussed and agreed a range of criteria against which to assess the options taking in to account the factors driving change. The criteria were grouped under two headings; objectives and critical success factors (CSFs). Detail regarding the criteria is in section 2.6 of the Part B report.

A percentage weighting given to each objective and CSF was discussed and agreed at the workshop. The weighting is designed to give a sense of relative importance of each criteria in the decision making process.

12.2 Multi-Criteria Analysis

Based on the total business case analysis Cranleigh has independently scored each option against the criteria to give an overall score out of 10, but displayed as a percentage as shown in the table below. An explanation of the scoring is available in Appendix 5 of the Part B report.

Assessment Criteria	Weight %	Status Quo	ESS	CCO
Objectives:				
Effectiveness	25%	3/5	2/5	4/5
Efficiency	15%	3/5	3/5	4/5
Improved Financial Sustainability	20%	3/5	3.5/5	4/5
Alignment	10%	2/5	3/5	4/5
Reducing Risk	10%	3/5	2/5	4/5
Customer Voice/ Focus	20%	3.5/5	3.5/5	4/5
Critical Success Factors:				
Strategic fit	25%	3/5	3.5/5	4.5/5
Value for Money	17%	2/5	2.5/5	4/5
Affordable	20%	3/5	3.5/5	4.5/5
Achievable	23%	3/5	3/5	4/5
Regulatory Compliance	15%	2.5/5	3/5	4/5
Overall Weighted Score	Out of 100	**58%**	**60%**	**82%**

Given the level of accuracy of this form of analysis, the overall scores for the Status Quo and ESS can be considered the same.

12.3 Summary and Recommendation

The different assessments of each option are brought together in the following table:

Decision Factor	Status Quo	ESS	CCO
Multi – Criteria Score	58%	60%	82%
Combined $ Savings (10 years)	NA	$27m	$107m
Combined $ Savings (28 years)	NA	$104m	$468m
PV of Capex & Opex Savings	NA	$35m	$91m
Risk Rating	Medium	High	Low
Overall Ranking	**2**	**3**	**1**

ESS has an overall ranking less that the Status Quo as possible financial benefits are offset by the risks. The risk/reward ratio does not justify a change from the Status Quo.

The CCO is clearly the highest ranking option and therefore is recommended by Cranleigh as the preferred option. It meets all the agreed investment objectives well, is lower risk and offers substantial financial benefits. Key advantages include:

- Water services are an activity with substantial economies of scale. The CCO option is the only one which offers scale across all key areas including staffing, systems, operations, network ownership and funding.
- A CCO structure is also the only option which brings a full Waikato sub-regional view and solution supported by a robust and responsive governance structure. ESS goes some way towards this, but lacks strong governance and a single unified network.
- Major cost savings for water customers and councils due to opex and capex savings and the optimisation of funding structures made possible by a specialist, asset owning entity. Cost savings are supported by evidence from similar amalgamations overseas and in New Zealand as identified in the Mott MacDonald's engineering report.

Confidential

13. IMPLEMENTATION

A comprehensive implementation plan will be critical to ensuring the chosen option is properly established and can quickly and effectively commence operations. An important part of the implementation plan will be establishing a strong change management programme.

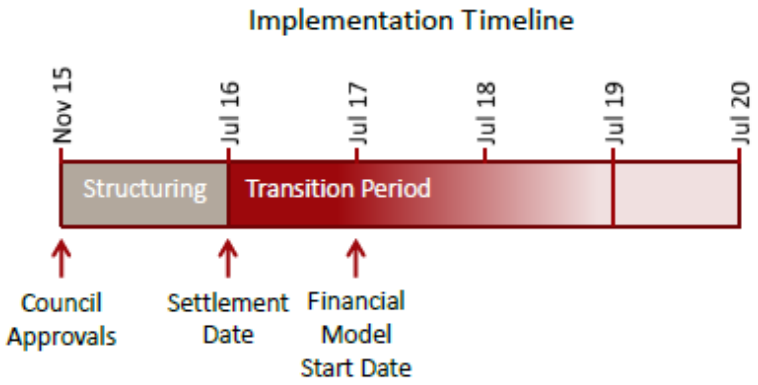
13.1 Timeline

ESS

It would be best to commence the ESS option from mid-2016 (i.e., 1 July) to fit within Council balance date timeframes. The process would be staged over a six month to one year period, ensuring service continuity and easier management transition.

CCO

Assuming that the councils decided to proceed with the CCO option in late 2015, it should be possible with good planning and project management to have documentation ready for signing and settlement by 1 July 2016. It is expected that a transition period of up to three years will be required to implement all systems and transfer all activities from councils. In practice it may be considerably less than this, but a conservative approach has been taken. The CCO Implementation Timeline is detailed below.



13.2 Project Governance

ESS

Governance arrangements would be similar to current operations. A project establishment team would be required. No special public consultation is required to establish this option, unlike the CCO option.

CCO

Recommend high level arrangements continue with the Project Governance Group, Project Management Group plus a Project Manager to assist governance transition to new board at an appropriate stage.

13.3 Securing Benefits

ESS

To ensure that benefits of the option are realised, the ESS option will require a very carefully developed set of contractual arrangements, strong governance and most of all goodwill and cooperation between the councils at both a staff and governance level, sustained over time.

CCO

An assessment of the anticipated benefits is essential to maintain the focus of the CCO and to ensure objectives are realised. Specific key performance measures will also need to be developed that address relevant benefit measures and these will need to be included in the CCO's Statement of Intent. Further detail on the benefits realisation is available in Part B, sections 5.4 and 5.5.

CRANLEIGH

CORPORATE FINANCE & ADVISORY

Business Case For Water Services - Delivery Options

Mott MacDonald

Part B: Detailed Report

MARTIN JENKINS

Issue date: 6 May 2015

Confidential

Table of Contents

Confidential

Confidential

DEFINITIONS

2 Waters:	Water and wastewater
3 Waters:	Water, wastewater and stormwater. Also refers to 3 Waters Strategy produced by Hamilton, Waikato and Waipa Councils in 2012.
Base Case:	The most likely financial forecasts CCO scenario which uses conservative assumptions for opex and opex savings.
BBC:	Better Business Case methodology developed by NZ Treasury NIU.
BLG:	Better Local Government. A Government programme initiated in 2012 aimed at improving the efficiency and effectiveness of local government. The first changes to the LGA were enacted in December 2012 and a further Amendment was enacted in August 2014.
Capex:	Capital expenditure
CCO:	Council Controlled Organisation. An entity in which one or more local authorities control 50% or more of the voting rights or has the right to appoint 50% (or more) of the organisation's directors.
Councils:	This refers to Waikato and Waipa District Councils and Hamilton City Council.
Discount Rate:	A percentage annual rate used to calculate the present value (PV) of cash flows which will occur in the future. For this business case a nominal (including inflation) rate of 8% per annum has been used.
EAG:	Expert Advisory Group. A group appointed by the Government in 2012 to investigate how local government infrastructure could be delivered in the most cost effective manner in a growing economy. It reported in March 2013.
ESS:	Enhanced Shared Services. An option where the Councils would pool most of their water teams in one unit to manage most water service for all three Councils.
Forum:	The Waikato Mayoral Forum represents 11 local authorities in the Waikato Region – Hamilton, Hauraki, Matamata-Piako, Otorohanga, South Waikato, Thames-Coromandel, Taupo, Waikato, Waipa, Waitomo, and Waikato Regional Council.
Gearing:	A measure of how indebted an organisation is, calculated here as debt divided by equity times 100.E.g. if you owned a house worth $500,000 and had a mortgage of $200,000 you would have a gearing ratio of 66.6% calculated as $200,000 ÷ ($500,000 - $200,000) X 100.
FTEs:	Full time equivalent staff members.
Future Proof:	The name given to the three councils working together on growth issues in and around Hamilton – Hamilton, Waikato, Waipa.
LASS:	Local Authority Shared Services
LGA:	Local Government Act 2002
LGC:	Local Government Commission. The Commission is an independent statutory body whose main role is to make decisions on the structure and representation requirements of local government in New Zealand.
LOS:	Level of Service. In its 2007 publication *Developing Levels of Service and Performance Measures*, the National Asset Management Steering (NAMS) Group defines Levels of Service as the descriptions of the service output for a particular activity or service area against which performance may be measured. In broad terms it can be thought of as standards for service quality, delivery, reliability and resilience.
LTP:	Long-Term Plan. 10 year plans that councils are required to prepare and update every 3 years. Current plans are being produced (in draft form) for the 2015-25 period.
MSA:	Management Services Agreement. This is an agreement where a service provider agrees to manage a range of services for another party for an agreed term for a fee.

Confidential

	The range of services under a single agreement can be wide ranging and might include the provision of all necessary, staff and equipment. These may be used during the sale of a business where the vendor agrees to provide management services for a time until the purchaser can set up their own arrangements. Another common example is where a property investor owns a hotel building, but a hotel company operates and manages the facility under contract.
NIP	National Infrastructure Plan. A national, strategic infrastructure plan issued in 2011 covering five key areas –Transport, Telecommunications, Energy, Water and Social. A 2015 NIP has been released for consultation.
NIU:	National Infrastructure Unit. A department within Treasury reporting to an independent National Infrastructure Board, which in turn reports to the Minister of Infrastructure.
Nominal Dollars:	A value expressed in monetary terms for a specific year or years, without adjusting for inflation.
Not-for-Profit:	A not-for-profit organisation is one that does not earn profits for its owners. All of the money earned by or donated to a not-for-profit organisation is used in pursuing the organisation's objectives. Typically not-for-profit organisations are charities or other types of public service organisations. Note that a not-for-profit organisation may actually report a profit or income surplus in any given year so that it can raise funds for growth and investment to further benefit its objectives.
O&M:	Operations and maintenance.
ODRC	Optimised Depreciated Replacement Cost. A method of valuing fixed assets.
Opex:	Operational expenditure – the ongoing, routine costs incurred in managing an activity. It includes maintenance, loan servicing, depreciation and administration expenditure.
Options:	The three options which are the subject of this business case i.e. Status Quo; ESS and CCO.
Positive Case:	A more optimistic financial forecasts CCO scenario which uses more optimistic assumptions for opex and opex savings than the Base Case.
PV:	Present Value. Value today of a cash flow or series of cash flows that will occur at some future date or dates. It is calculated by applying a Discount Rate which takes into account of how risky or how likely it is that the cash flow will occur.
Real Dollars:	Dollar amounts which have been adjusted for inflation.
SOI:	Statement of Intent. A key public document agreed between a CCO and its council shareholder/s describing the activities and intentions of a CCO for the year. It will typically include key performance indicators (KPIs) that the CCO is expected to meet. It also provides the basis of accountability for the CCO's performance.
Sub- Region:	The sub-region refers to the three districts of Waikato, Waipa and Hamilton.
TLA:	Territorial Local Authorities
VFM:	Value for Money
Vested Assets:	Assets that are transferred to a public entity at nominal or zero cost. Typically, this might result from a situation where a developer has installed assets as part of developing a site and passes them to a public entity to manage, maintain, and deliver services through. (Source: Audit NZ)
WDC:	Waikato District Council
WOL:	Whole of Life
WPDC:	Waipa District Council

Confidential

1. STRATEGIC CASE

Summary:

- There is a high level of government interest in water and broad agreement that there is a need for change in the way water infrastructure is delivered.
- New Local Government legislation was introduced in 2014 to encourage collaboration between councils and better asset management. The Local Government Commission was empowered to recommend the establishment of CCOs.
- By 2022 the gap between asset renewals expenditure and depreciation for the local government sector could be between $6 billion and $7 billion.
- There have been several reports on the future opportunities for the water businesses in the Waikato region that have led to this definitive project to comprehensively determine the best option for the future.
- The compelling case for change is well recognised; particularly the need to meet the pressures from population growth; the need to be compliant with current and new environment standards; and the significant capital investment required across the three waters for all the councils.

1.1 Strategic Context – National

Central Government regards high quality infrastructure as critical to the nation's growth and prosperity, and local government is an important partner in providing high quality infrastructure. Since 2011, central government and local government agencies have been engaged in dialogue about the reform of management of national infrastructure with a particular focus on water services.

Collectively, local authorities are responsible for more than $100 billion of community assets that provide essential everyday services. Local roads and water infrastructure are the two biggest areas of investment.

In 2011 the National Infrastructure Unit (NIU) released the National Infrastructure Plan. The NIU assessed water infrastructure as the lowest ranking of all of New Zealand's infrastructure sectors, across measures of investment analysis, resilience, funding mechanisms, accountability, performance and regulation. The NIU is currently undertaking comprehensive consultation about its draft 2015 National Infrastructure Plan. Water again features significantly.

The Local Government Infrastructure Expert Advisory Group (EAG) issued a raft of infrastructure recommendations in its 2013 report. Among these were specific recommendations to regionalise water services and manage their operation independent from political decisions (the recommendations pertaining to regionalisation and political independence are supported by substantial international experience and research demonstrating that larger water utilities deliver greater economies of scale due to lower marginal costs of production).

The 2014 amendment to the Local Government Act 2002 introduced reforms to address some of the deficiencies identified by the 2011 NIP: for example councils are encouraged to collaborate more between each other through shared services, they must review the cost effectiveness of service delivery arrangements every three years, develop 30 year infrastructure strategies and meet new requirements for asset management planning, and disclose information about their rating bases in long-term plans, annual plans and annual reports, and disclose their risk management arrangements for physical assets in

annual reports. The Local Government Commission is empowered to recommend the establishment of CCOs (a power it did not have prior to the 2014 amendment). Clearly the Government believes that there is a need for change in the way local government infrastructure services are delivered.

In 2014, the OAG released a report "Reflections From Our Audits: Our Future Needs – Is The Public Sector Ready? (2014)". It was noted that while New Zealand has a good reputation internationally for managing assets, the asset management practices of many local authorities falls short. The OAG noted that local authorities need to better understand their local economy in order to better plan for the longer term, and improve their management of infrastructure and capital needs.

Significantly, the OAG found that from 2007 to 2013, local authorities consistently spent less than they intended on capital works, including on asset renewals. The OAG expects this under-investment to grow. If actual spending trends continue to match forecast, the OAG estimates that by 2022 the gap between asset renewals expenditure and depreciation for the local government sector could be between $6 billion and $7 billion.

1.2 Strategic Context – Local Response

In their draft 2015-25 LTPs the three Councils have proposed big increases in three waters capital investment to address growth, level of service (LOS) improvements and renewals. Councils have also recognised the need to consider change. A number of independent reports have been commissioned to identify and evaluate delivery mechanism options for change with a focus on collaborative solutions.

Strategic Review 2012

The Waikato Mayoral Forum (the Forum) engaged Participate et al to undertake a strategic review of water and wastewater services in the Waikato region. In particular, the report focused on identifying the potential for the joint delivery of services between the councils that might enhance the effectiveness and efficiency of water and wastewater services.

The key findings and recommendations of this report were as follows:

- Considerable opportunities for shared services between the three councils.
- There is a significant difference in the forecast LTP period (2012-22) between the funded depreciation expense and renewal expenditure indicating that at some point renewal expenditure will need to rise.
- More detailed understanding of the cost and cost drivers of water/wastewater was required.
- Likely to be significant cost savings if water/wastewater was managed as one network through economies of scale, one asset plan, one management structure, improved procurement, streamlined contract provisions and business systems. There are significant barriers to getting full benefits of shared services, such as council sovereignty, risk allocation, employment concerns and methodology for capital allocation/contributions.
- There is a significant opportunity for cost savings through the joint delivery of water and wastewater services in the Waikato region by a single water and wastewater entity managed on a regional basis.
- Moderate cost savings could be achieved through the sharing of operational functions and resources across the regional councils.
- There is little scope for cost savings if each council continues to own and operate separate water and wastewater systems.
- It is highly desirable to improve the organisational resilience of water and wastewater systems – especially in the smaller councils.

Confidential

Sub Region Shared Services Review 2013

HCC, WDC and WPDC commissioned PwC to undertake a review to understand how to gain greater value from existing water, wastewater and storm water shared services. PwC similarly concluded that there was the potential to generate cost savings at the sub-regional level.

This included potential savings and operational improvements that could be made by the three Councils working together in both the reticulation and plant operations spaces. This could be achieved in two ways; either moving forward with the full consolidation of the teams (which they recommended), or moving forward in a staged approach.

PwC recommended that in order to achieve the full benefit from a combined 3 Waters plant and reticulation offering, a full integration of the plant and reticulation teams should be performed. This would result in significant savings in labour and provide a more resilient workforce. PwC indicated that to achieve this outcome a new delivery model would be required.

Waikato Water Future Delivery Options 2014

Following analysis of both the above reports, a further independent report by Participate et al was commissioned by the Forum to provide a detailed analysis and evaluation of different models for the joint delivery of water and wastewater services, as recommended by previous reports. This report recommended that, subject to a detailed business case, a sub-regional CCO be established for the water and wastewater activities of the HCC, WDC and WPDC.

The report suggested that a CCO structure:

- Overcomes the inherent limitations of three separate Councils making decisions on critical community infrastructure where there is a high level of interdependency;
- Enables the three councils to manage an estimated $0.5 billion dollar 10 year capital expenditure programme in a coordinated way;
- Unlocks significant cost saving potential;
- Enables value adds through economies of scale, faster decision making, reduced consenting costs and other efficiencies;
- Enables a piped network across the three communities which will improve the security of supply and level of service to each;
- Optimises the use of water;
- Reduces risk and provides greater financial flexibility;
- Provides a robust platform for the three Councils to address growth challenges; and
- Provides a Waikato centre of excellence which could assist the other seven councils.

Delivery Options Business Case 2015

As a result of the report's recommendations, Cranleigh was appointed by the three councils in November 2014 to fully investigate and identify the best sub-regional solution. It was agreed by the Councils that a detailed business case analysis be undertaken on three options. These are:

- Remaining with the Status Quo;
- Creating an Enhanced Shared Services unit serving the three councils; and
- Creating a CCO owned by the three councils.

These short list options were confirmed at a Decision Support Workshop conducted in January 2015. It was further noted that:

- Politically, no option is preferred at the moment;

- Councils are under significant LTP pressure in terms of rapidly growing investment requirements;
- The report must take a long-term view; and
- The effect on each council should be analysed – and collective impact determined at a consolidated level.

The detailed project scope is set out in Appendix 1 while a bibliography of the relevant reports and other source documentation is set out in Appendix 2.

1.3 Case for Change

As noted in the Waikato Water Future Delivery Options (2014) and as shown by our own investigations as part of the analysis for this business case, there is an increasingly urgent case for change. The strategic context and case for change was reviewed and supported in a Decision Support Workshop conducted in January 2015. A number of factors are driving change. These include:

- **Growth** – From the Waikato Water Report "The 2013 census reveals that three councils (Hamilton, Waikato & Waipa) experienced very high growth, about 10% over the last census period. 92% of growth in the Region was in these three areas and 63% of the Region's total population is in these three areas. It is also noted that the Future Proof Strategy forecasts that the Hamilton, Waikato and Waipa population will likely double by 2061." Already Councils can not provide water for new water intensive industries which may wish to locate in the sub-region. The population is also ageing. This will have an affect on average incomes making affordability of services even more important.
- **Environmental and Regulatory Compliance** – A number of councils have faced compliance issues in terms of drinking water and waste water standards. An important focus of councils' Long Term Plans (LTP) is making the necessary investments to resolve these issues.
- **Capital Investment –** The three councils are planning substantial capital investment over the next 10 years. This is expected to total $764m in nominal dollars. The drivers are: expansion for growth; improved LOS and renewal (replacement of worn out assets). Bringing the three council water businesses together offers the potential to achieve economies of scale. This will be evident in all parts of the business, including procurement and financial management.

  Overseas experience, such as in the State of Victoria, Australia, consistently showed amalgamation of water business generated much higher levels operational savings from economies of scale than were initially estimated.

The Decision Support Workshop supported the following strategic objectives for change from the Status Quo delivery model:

Broad Objective	Detailed Objectives
Effectiveness	▪ Provide better customer services in terms of reliability including fewer water restrictions and increased security of supply, quality and responsiveness ▪ Lift customer outcomes through improved organisational, managerial and financial focus ▪ Promote and value the efficient and sustainable use of water

Broad Objective	Detailed Objectives
Efficiency	▪ Improve the cost effectiveness of service through: – Better long term and more "joined-up" planning, development and management of the networks on a sub-regional basis – Generating long term/sustainable savings – Maximising economies of scale – Manage water assets in a financial sustainable way based on asset condition understood and depreciation fully funded
Costs lower than LTP	▪ Deliver services that, over the long term, cost less than they would under the status quo option
Alignment	▪ Achieve regulatory compliance ▪ Meet agreed customer expectations ▪ Capability to manage future environmental/regulatory outcomes ▪ Maximise influence over regulatory outcomes
Reducing risk	▪ Resilient organisation that drives long term value through fit-for-purpose – Infrastructure – Human capital – Financial capacity – Technical capacity
Community voice/focus	▪ Appropriate governance to ensure the community continues to have a voice

1.4 Scope and Methodology

The project scope (see Appendix 1) details the outcomes required from this report. Essentially the Councils require a detailed and robust business case that builds on the findings of the previous analysis and provides a detailed evaluation and set of recommendations for the delivery of water services across the Hamilton, Waikato and Waipa districts. A set of clear, actionable recommendations is required.

Out of scope was any review of tariff structures including water metering or fixed rate options, community engagement including iwi or consideration of water allocation within the catchment.

Cranleigh divided the activities into a number of work streams designed to best utilise and focus the skills of project team members and council staff while fully supporting the development of the detailed business case.

- **Engineering.** The engineering assessment identified the asset-related and service issues and challenges associated with the water, wastewater and storm water services and assessed the implications for future long-term investment and operating costs for both the combined entity and the individual councils. This assessment was used to determine the capital and operating costs to be used in the financial modelling and to determine the economic case for change from the current water model. The assessment helped define the challenges faced jointly and individually by the councils and this supported the strategic case for change. The technical assessment also considered the Councils' asset management capabilities and through benchmarking (using national and international benchmarks) determined the scope for efficiency in capital and operating costs whilst achieving the required service objectives. The detailed

engineering analysis by Mott MacDonald is presented in a separate report which informs this report.

- **Financial Model Development.** Comprehensive financial models were developed at both the sub regional and individual council levels. Integrated financial models were essential tools in forecasting the financial impact of changes to the water and wastewater systems for each council (whether sub regional integration occurs or not). Council finance staff were involved in reviewing the models to confirm that all Status Quo data was correctly represented and interpreted. Individual council models were consolidated to give a sub-regional view. Ernst & Young conducted a peer review of the financial model for completeness, accuracy and logic.
- **Financial Structure**. A number of factors determine the optimum financial structure for an asset owning CCO. These include net revenues and their predictability, initial asset values, initial debt, future funding needs, acceptability to capital markets and equity between customer groups and between councils. Our financial model provided us with the ability to test different funding assumptions over the forecast period. We used a prudent financial manager approach (applying care, conservative prudence and skill) combined with water industry benchmarks to determine prudent maximum debt ratios.
- **Structures and Organisational Design**. Good governance arrangements will be essential to the success of both the CCO and ESS option. Good governance will require professional oversight of management and the appropriate representation of the interests of the three councils and the water service customers that they represent. Factors which needed to be considered include: risks borne, size of customer base, assets and debt contributed and future growth requirements. Pro forma organisational structures were developed for the CCO and ESS options with staff numbers being established by mapping existing staff positions for the Councils to the relevant CCO and ESS functions. Duplicate positions were then removed and benchmarks applied to estimate future staffing requirements. Local and international benchmarks were considered along with accepted best practice to develop appropriate governance structures.
- **BBC Development and Methodology**. The project team was required to use the BBC framework and methodology to develop the business case. This framework is mandated by NZ Treasury for all government departments and is also now widely used across other public sector agencies including many councils. It provides a comprehensive framework which helps ensure that the right questions are asked and answered.

Cranleigh conducted a number of focused workshops with the Councils to carefully consider all important aspects of the project. Six workshops were run, as detailed below.

Workshop	Principal Activities	Desired Outputs
Decision Support	Confirm the strategic case, identify option evaluation criteria and confirm short-listed options	Determine the strategic case, evaluation criteria and weightings and shortlist options
Organisation Design	High level design of ESS and CCO management and organisational structures	High level management and organisational structures
Governance	Shareholdings, appointment of directors, monitoring mechanisms, statement of intent, voting arrangements	Governance and shareholding structure, essential SOI terms, indicative council monitoring arrangements
Risk Evaluation	Identification and evaluation of risks	Risk matrix with key risks identified and initial probabilities assigned
Capital Structure	CCO capital and funding structures	Clear view on an efficient capital and funding structure including debt levels
Option Selection	Identification of preferred option	Preferred option

More detail on the workshops is provided in Appendix 3 including the participant groups.

Confidential

2. ECONOMIC CASE

Summary:

- The BBC methodology was used to evaluate the three options.
- The Status Quo is a workable solution, but one which will always offer only basic service delivery and performance and at a higher cost than other options.
- It is recommended that Stormwater asset ownership and planning functions remain with the Councils, but that stormwater O&M and agreed capex be undertaken by ESS or CCO on a cost recovery basis under a MSA.
- The CCO option is recommended as it offers substantial cost savings, scored highest on the evaluation criteria and is the lowest risk option.

2.1 Approach to Options Development and Evaluation

Before evaluating the options it was been necessary to develop the options in some detail. This has been achieved though the workshop process with council members and officials supported by reference to benchmark examples and the commercial experience of the project team.

The BBC framework is primarily designed to evaluate a proposed investment project. However, in this case we are seeking to identify the best service delivery model and we have adapted the framework. We have evaluated the options over a 28 year period given the long term nature of water infrastructure and the information base available. This includes council draft LTPs and 30 year infrastructure strategies.

2.2 Option 1: Status Quo

Under current arrangements each council owns and operates their water, wastewater and stormwater assets. Revenues sources include general and targeted rates, service fees, commercial and trade waste charges and development contributions. Residential water metering either already exists in part or is being further introduced in the Waikato and Waipa districts to allow volumetric charging.

Debt is raised by councils as a general obligation to all ratepayers. The Councils have a small shared services arrangement covering laboratory services, trade waste and water education. The following table sets out projected key measures of the existing Councils' 3 Waters businesses as at 30 June 2015.

Council	Total Staff FTEs	Water Connections $m	% of Ratepayers connected	2015 Revenue $m	June 2015 Total Waters Debt $m	June 2015 3 Waters Fixed Assets $m	June 2014 Deprec. As % of Replacement Cost	June 2015 Waters Debt/ Equity
HCC	126.8	49,161	83%	51.2	110.7	1,002.1	37%	12.4%
WDC	50.7	11,277	37%	22.0	42.6	220.1	37%	24.0%
WPDC	39.5	13,171	61%	19.8	(5.2)	195.5	49%	2.7%
Total	217.0	73,609		93.0	148.1	1,417.7		12.6%

Points to note:

- HCC comprises around 66% of the water connections and assets excluding stormwater.
- HCC's staff levels are proportionally higher, but they run a greater proportion of activity in-house rather that out-sourced. HCC also hosts the existing shared services unit which includes around 14 FTE staff.
- In WDC and WPDC a substantial proportion of ratepayers do not use the water network. This may raise equity issues if general rates are used to fund water services or council debt capacity is used for water services and thereby crowds out other council activity.
- WPDC's water assets are depreciated to a greater extent than the other two councils indicating that the assets are older on average.
- WDC has the highest debt ratio although we note that it would be considered modest to average compared to international benchmarks. HCC's water debt associated with water services is low relative to its size, while WPDC's is negligible.
- While not displayed, all three councils have substantial capital investment programmes proposed over the next 10 years.

Organisation and Governance

All three councils currently operate their water activities as cost centre departments within council. They benefit from the support of corporate services such as HR, IT and accounting and they are ultimately responsible through the Chief Executive to the elected council.

Because water activities form part of council operations there is a sense of local ownership in the community regarding the water activities. The water departments can also be supportive of other council activity and have the ability to liaise directly with other council departments such as planning, roading and to assist economic development.

However, while each of the Councils has capable teams they lack the scale to develop as real centres of excellence and gain true efficiencies.

Environmental and Compliance

All the councils have suffered from some compliance issues. HCC is in the best shape being the only council delivering 'Aa' graded water and with only minor wastewater consent breaches. WPDC drinking water is either ungraded or of low grading with the exception of Kihikihi. WPDC's wastewater treatment plants are generally compliant. WDC's drinking water is of low grade in most locations and a number of its wastewater treatment plants have shown inadequate effluent quality in their last audit. Tables detailing water and wastewater results by community are contained in Appendix 9. Aware of these problems, the Councils have put considerable focus in there draft LTPs on improving compliance. The Councils capex programmes are designed to address these issues over the forecast period, but the risk is that future councils may decide on a change in priorities.

Resilience

While the Councils have the ability to address resilience issues in their own areas, some of the gains would come from optimising the network on a sub regional basis. This has proved very difficult to achieve under the Status Quo model. In addition, as the individual councils command less dedicated water resources than either ESS or CCO options they cannot exhibit the same specialised organisational and team capabilities that support resilience.

Risks

Based on the risk evaluation workshop and subsequent analysis the Status Quo option has been rated as more risky than the CCO option, but lower risk than ESS and in no categories was it rated less risky than

the ESS. While regarded as sub-optimal, the Status Quo option avoids the coordination problems and multiple agendas of the ESS model. The detailed risk assessment is available in Appendix 8.

Financial

Under the current model, councils are proposing substantial increase in rates and water charges to fund necessary capital expenditures and a significant increase in debt. While this is a viable strategy it misses the opportunity for initial and long term improvements in affordability through an optimised funding model supported by economies of scale available to a sub-regional solution.

Council Impacts

- Failure to improve the service delivery model will place achieving the necessary improvements in services at risk.
- Retention of key water staff may become increasingly difficult.
- The increasing levels of debt proposed may crowd out other council investments and initiatives.

Option Summary

Pros
1. Capable local teams providing satisfactory service 2. Sense of local ownership 3. Supportive of other council activity 4. Covers part of council overhead 5. Local council oversight on behalf of local community
Cons
1. Struggle to attract, retain and develop staff 2. Lacks sufficient scale to gain true efficiencies 3. Overall risk profile assessed as medium 4. Difficulties in prioritising water activities over time 5. Weight of capex investment profile crowds out investment in other council activities 6. Debt capacity of councils limits water investment or encourages higher water prices to raise revenues as an alternative funding source for investment

In summary, the Status Quo can be regarded as a workable solution, but one which will always offer only basic service delivery and performance and at a higher cost than other options.

Potential Improvements to Status Quo

Should Councils decide not to proceed with one of the other options there are changes that could be made to Councils' existing water operations which would provide more confidence regarding their ability to deliver the required investment programme. These changes are the establishment of water activities as business units within council and improved billing arrangements for water services.

Business Units

It is recommended that councils more firmly establish their water activities as independent business units within council. The key features of an in house business unit are:

- Not a separate legal entity, but part of Council.
- Operates as a full "profit" centre with all waters revenues, expenses, assets and liabilities attributed to the business unit.
- The business unit general manager is responsible for all aspects of the activity as if they were running a separate business, but receiving support from internal council services such as IT, HR, Finance etc.

A business unit offers the following benefits:

- Clear managerial responsibility and accountability for all activities.
- Transparency as to the full costs, including capital costs of all water activities and services.
- Better decision making and procurement due to a full understanding of all costs and revenues.
- Assists more accurate tariff design due to better cost base data. This has the flow on benefit of being able to very clearly justify tariff levels to water customers.
- Better ability to identify critical success factors and activity drivers.
- Assists in benchmarking council water activities against international and domestic water utilities.

It is also recommend that councils appoint a small advisory committee of outside experts to assist with the establishment of the business unit. The need for the advisory committee should then be re-evaluated once the business unit is well established.

Clear Billing

It is recommended that Councils move to implement very clear and explicit billing for water services. This will assist water customers and ratepayers to understand exactly what services they are receiving at what cost and allow a very explicit matching of all water revenues with water costs in the council business unit. The councils currently have differing billing practices.

- **HCC**. Hamilton residential water and wastewater customers currently do not receive a water bill as water services are funded by general rates. This means that the cost of service delivery is not clear to water customers some of whom think that water is "free". This is neither helpful from a water conservation point of view nor in explaining the need for capital investment. Clearer billing could be achieved by moving to targeted rates for water and wastewater which are either separately listed on rates bills or presented in a separate water services bill. This does not require the implementation of water metering as the targeted rates could simply be fixed rates per connection based on average useage.
- **WDC**. Waikato already has a mixture of targeted rates on the rates bill and some separately billed volumetric charges for customers with water meters. It would be desirable to bring these together on one bill.
- **WPDC**. Waipa currently offers the clearest billing as targeted water, wastewater and stormwater rates are all listed on rates bills. A minor improvement might be ensuring that these charges are listed consecutively on the bill with a waters subtotal. Over time it might also be possible to include additional information such as how a given customer's water usage compares to similar households.

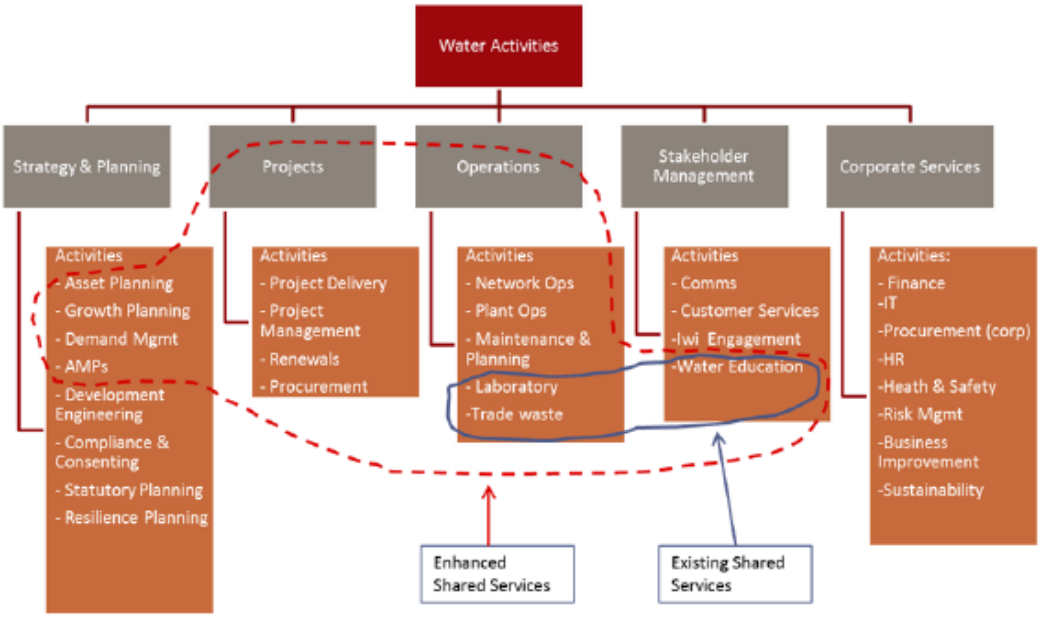
2.3 Option 2: Enhanced Shared Services

The three councils already operate a limited shared service arrangement comprising joint resourcing for water education, laboratory analysis and trade waste. These activities are provided by HCC for all three councils and costs are shared on an agreed basis.

Confidential

Aided by discussions with council staff, Cranleigh has scoped and developed a feasible ESS model. Services included in the model and other aspects of the model were developed from three workshops conducted with council members and staff in an Organisation Workshop on 2 February, a Governance Workshop on 5 February and an Option Selection workshop on 2 April, 2015.

The diagram below illustrates the range of activities required to successfully deliver water services, and the solid blue line indicates services currently provided on a shared basis.



During the three workshops, the group determined that the activities enclosed by the dotted red line could be brought into an Enhanced Shared Services arrangement. The remaining activities are either support services which could best be provided by one or more councils or considered inappropriate for shared services given councils' continuing ownership of the assets and revenues under this model.

Key features of the ESS model are as follows:

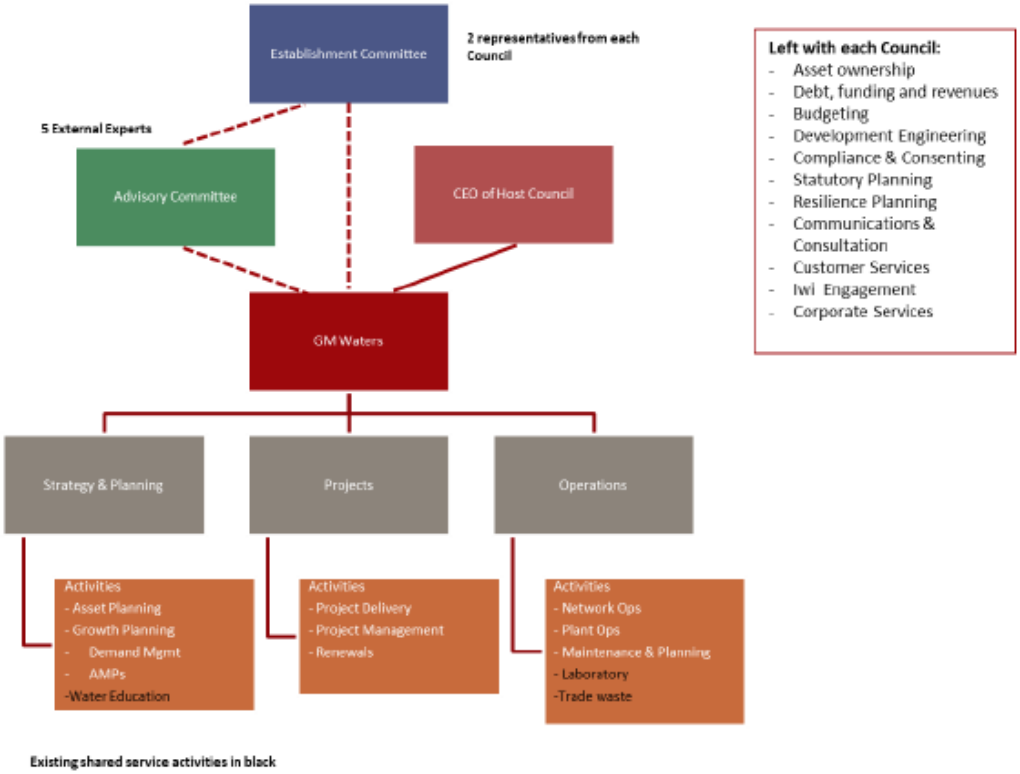
- The model will not involve the establishment of a separate legal entity (CCO or company) to deliver the shared services. Instead, a 'providing' council would deliver the shared services for the benefit of all three councils;
- Relevant staff would be employed by the providing council with costs shared on a pro rata basis;
- The Councils will appoint an establishment committee to oversee the delivery of the shared services and agree on project priorities and budget for final approval by each council;
- The establishment committee will have access to an advisory board of industry experts to provide oversight and endorsement of plans and budgets, as required;
- Shared services team will rely on the corporate services such as IT and accounting provided by each council;
- Each council receiving the shared service will monitor the services delivered and report on service levels and results;

Confidential

- Councils retain ownership of their own water assets, collect associated revenues and raise and repay any necessary debt;
- The General Manager ESS would formally report to a senior manager or CEO in the host council and he or she would be an employee of that council. However, all key decisions would have oversight from the establishment committee.

Organisation and Governance

ESS offers the potential to create a larger, more specialised team that can become a centre of excellence across the sub-region but it will present some challenges from an organisation and governance point of view. A high level overview of the proposed ESS structure is set out below:



Existing shared service activities in black

The ESS unit would be a council business unit that operates directly under the host council, but has the ability to do so on more flexible "commercial" terms. Nevertheless the business unit does not have powers to contract beyond that of the Council of which it is a part. All major contracts for work undertaken for the other two councils would need to be approved by the relevant council.

Management Service Agreements (MSAs) would be required between the host council and the other two councils covering the work that the ESS unit will be undertaking and how the unit will be funded. While the MSAs would have fixed terms, they would normally roll over under standard renewal provisions. Notwithstanding this, the Councils would have the ability to withdraw from the ESS arrangement in the future if desired. However, withdrawal of any of the Councils could trigger adverse implications for the others which would need to be worked through. It could potentially undermine the feasibility of the ESS model.

We recommend that the councils appoint a small advisory board of five members to provide guidance on the operation of the business unit. Although the advisory board has no legal standing with regard to directing the business unit they will be able to offer a range of outside industry and private sector expertise.

Council staff are employees of the council and therefore act under the authority of their respective CEO.

Similarly the assets and liabilities of the business unit are legally assets and liabilities of the councils. This means the business unit's power to contract, raise revenue, borrow and provide any security for borrowings remains subject to the powers of each council, its internal policies and the financial standing of that council. Under the ESS option this will require a very carefully developed set of contractual arrangements, strong governance and most of all goodwill and cooperation between the councils at both a staff and governance level, sustained over time.

The peak co-ordinating mechanism would be the Establishment Committee consisting of two representatives from each council. This committee would review and approve a consolidated asset management plan for the sub-region together with LOS, budgets and capex priorities. This will be a crucial forum for resolving conflicting priorities between councils that will inevitably arise. The need for the committee should be reviewed once the ESS unit is well established and its functions could be absorbed into existing shared services arrangements.

There are likely to be some staff savings from establishing an ESS unit. It is expected that these will principally be at the senior team leader levels as the combined teams will only need one leader. Savings of 10 FTE staff have been assumed to give cost savings of $850,000 per annum. This has been assessed on the basis that only five people will be required to fill each of the top five leadership positions in the ESS unit compared to fifteen across the three Councils. Further savings are unlikely due to the coordination efforts that will be required to serve the three different councils.

Environmental and Compliance

As ESS will be dependent on council funding and debt policies, it is expected that ESS will make only minor inroads to the environmental and compliance challenges currently faced by the Councils. The unit must compete for resources with other council functions and while some capex and opex savings can be expected, there is no guarantee that these funds would be applied to waters investment. Also, as with the Status Quo, there are less strong legal consequences for non-compliance by individual council organisations or their staff.

Resilience

As each council will continue to own and fund its own network and given the difficulties in aligning council priorities to create an integrated agenda, it is expected that ESS could offer only a marginal improvement over the Status Quo in improving resilience.

Risk

Based on the risk evaluation workshop and subsequent analysis, the ESS option has been rated as more risky than the Status Quo. In no categories was it rated less risky than the Status Quo. While not a substantial difference the lower scoring principally reflects the expectation that the coordination and multiple agendas of the model will make it more difficult to manage and mitigate the identified risks.

Confidential

Financial

The ESS option has been forecast to produce opex and capex savings as set out in the following table. These are nominal amounts which include inflation.

Total Cost Savings – ESS	First Ten Years 2017/18 – 2026/27			28 Years		
	Opex	Capex	Total	Opex	Capex	Total
	$m	$m	$m	$m	$m	$m
Base Case	14.9	12.3	27.2	64.5	39.5	104.0

The benefits are calculated based on staff savings of ten FTEs ($850k), operating cost efficiencies of 2% and capital expenditure savings of 1.5% based on benchmarks. Cranleigh has assumed establishment costs of $1m, largely to cover IT, some redundancy, legal and development of MSAs. This would all occur in the first year of the ESS.

The savings could be applied to small reductions in customer charges or rates should Councils choose to improve affordability. Alternatively, some reduction in debt might be possible. While these savings are possible it would require a long period of sustained co-operation between councils to achieve them, placing these savings at risk.

Council Impacts

- This option will result in a significant transfer of staff from two councils to the host council which may result in some staff losses and vacant office space.
- A small improvement in council key financial ratios could occur.
- The two non-host councils will lose most of their in-house water services capability. Should the ESS arrangement subsequently be discontinued they will have difficulties re-establishing the necessary capability. This will be a barrier to these Council in withdrawing from the ESS.

Option Summary

Pros
1. Creates larger team
2. Good public acceptance as idea of councils working together attractive
3. Supportive of other council activity
4. Covers part of council overheads
5. Local council oversight of ESS unit on behalf of local community
6. Greater focus on core water activity
7. Opportunity to share systems and intellectual property
8. Opportunity to bundle projects and improve procurement
9. Offers some cost savings

Confidential

Cons
1. Must negotiate priorities with three different councils
2. Vulnerable to one or more councils withdrawing in the future as the model relies largely on goodwill of the three councils
3. Some water activities remain outside arrangement creating coordination issues
4. No balance sheet to raise funds to support water investment and optimise debt
5. Weight of capex investment profile constrains investment in other council activity
6. Debt capacity of councils limits water investment or encourages higher water prices to raise revenues as an alternative funding source for investment
7. Joint procurement difficult to arrange and manage
8. Difficulty of managing liability across councils when one council is host and employer of staff
9. Difficult to implement and maintain
10. Higher assessed risk profile

In summary this option potentially offers some worthwhile benefits over and above the Status Quo. However, these may ultimately be offset by significant coordination costs between the ESS unit and the three councils. It should be noted that the decision making and approval process has proved difficult even for the existing limited shared services arrangement. In addition the lack of certainty as to whether councils will remain engaged for the long term will be detrimental to what is a long term infrastructure business. Shared services arrangements are best suited for low risk, low complexity activities rather that water services. On balance the option is less attractive than the Status Quo given the likely coordination problems and risks around long term council cooperation.

2.4 Option 3: CCO

Description

As per the scope of the study Cranleigh developed a model for the establishment of a CCO. This was based on the discussions facilitated primarily at three workshops conducted with council members: an Organisation Workshop on 2 February, Governance Workshop on 5 February and an Option Selection workshop on 2 April, 2015. A 'Council Controlled Organisation' is a statutory entity created under the Local Government Act 2002, and defined under section 6(1) of that Act. Full text of the definition is provided in Appendix 4 to this report.

The key features of the water CCO proposed by Cranleigh:

- The CCO should take the form of a 'Limited Liability' entity with no power under its constitution to declare and pay any dividends to its shareholders. The CCO will act as a not-for-profit organisation.
- It will effectively be a co-operative in favour of water customers although customers will not be members or shareholders.
- The three councils will own 100% of the CCO shares.
- The shareholders of the CCO will be each of the three councils. Careful governance will be required to address the delicate power – independence relationship between each council and the CCO. The CCO requires sufficient independence to deliver on its requirements whilst remaining accountable to each council. This can be managed through an annual Statement of Intent (SOI) process.
- The CCO will purchase the water assets and liabilities of the three councils. This will involve a transfer of those assets and related liabilities by each council to the CCO.
- The CCO will manage its own balance sheet and debt.
- The CCO will be overseen by an independent, professional board of six directors that are appointed by all three councils, and managed by a CEO reporting to the board.
- The CCO will aim to deliver services and operations at the lowest cost while still maintaining prudent management. Key decisions about the water and wastewater will become the responsibility of the board, based on an agreed SOI with the councils.
- After a transition period the CCO will bill customers directly under tariff structures approved by an establishment committee or succeeding council monitoring arrangements. A proposal for water meters may only be introduced with the approval of individual councils.
- The CCO will make provision for other councils from the region to join later.
- The CCO will be a vehicle for regional initiatives, coordination and support, on a cost recovery basis.

Organisation and Governance

Part 5 of the Local Government Act 2002 specifies certain governance, including monitoring, reporting and planning obligations of a CCO. Set out in Appendix 4 of this report is further detail regarding the definition of a council organisation and the specific requirements of a SOI. Building on those requirements, the following organisational and governance features should be adopted under a CCO model:

- **Independent board**: In implementing the recommendations arising from the 2011 report, the CCO must have a board of directors which operates independently of political pressures, and outside of election cycles, remaining accountable to its shareholders, as well as its community and

environmental stakeholders. We recommend that six directors be appointed plus a chair. Elected members and council officials should not be directors.

- **Public Company Standard**: Even though the CCO is established as a non-profit operation, its governance model should emulate the high standards applicable to publicly listed companies (plc). Adopting high standards of governance including disclosure reflect the important role of the CCO as the stakeholder for public assets and delivery of essential services to rate payers. The CCO constitution will provide for appointments and the key decisions that the board and the shareholding councils need to make. In the plc model, the prescribed procedures and timings relating to Annual General Meetings (AGM), Special Meetings and passing of resolutions to be voted on are laid down. This process should be adapted for the CCO. It is very important that the workings of a CCO are not frustrated by delay in decision making by shareholding councils (this may occur for the simple reason of trying to get items onto a council agenda). The constitution needs to bind both the CCO into providing full and frank disclosure on a timely basis to the councils while ensuring the councils make important decisions relating to the CCO on a similar timely basis. Councillors should be invited to a formal AGM where they can learn about the performance and plans of the CCO.

- **Council CCO Governance**: The current governance structure is used by the councils in governing an existing CCO; the Hamilton Airport (HA). A key feature is that the board of HA has access to the CEOs and Mayors of the councils and meet when required to inform and make decisions. The HA also can discuss day-to-day issues with the Council's CCO sub-Committees. This process could be adapted to the proposed water CCO model, but given the complexity and political sensitivity of a water CCO, particularly around water pricing, Cranleigh recommends putting in place a Establishment Committee. This Committee will be important during the establishment phase to produce a series of agreed CCO outcomes, protocols and on-going management of the relationship with the CCO. We recommend that the Committee be comprised of two members appointed by each council (one of whom must be a councillor). Resolutions will be passed by a simple majority vote (two votes per council). It is recommended that members serve a fixed three-year term with a rolling rotation of tenure. Initially the committee's role will be to agree on the constitution, directors' and chair's appointment process and SOI for the CCO. Following the establishment phase, the committee will be involved on an on-going basis to discuss and monitor the CCO's performance against targets, at least annually, agree to any directors' appointments, submit Letters of Expectation, endorse proposed tariffs and updates to the SOI, as required. Establishing a Committee to take charge of this process will achieve a strong link between the Councils and the CCO that will help to manage the relationship over time. Once the CCO is well established it is possible that the Establishment Committee could be replaced by the three Councils' existing CCO and shared services monitoring structures.

- **Relationship with the shareholding councils**: while each council will devolve management of its water business (including water assets and related liabilities) to the CCO, and the CCO Board is to operate independently, the three councils should retain an important degree of influence and control. This will be achieved via annual Letters of Expectation from the Councils to the CCO board, the SOI process, the power to appoint directors and the ultimate power as voting shareholders. The SOI will reflect the CCO's direction, power and accountability, as negotiated with the three councils. This means that the CCO will be required to carry out policies and directions agreed by the Establishment Committee, using its powers under the constitution, and reporting on its activities to the councils and the public.

- **Stakeholder representation and management**: in addition to providing effective professional oversight of management, the CCO governing board must also provide for the appropriate representation of the interests of the three councils, the water customers that they service and other stakeholders such as iwi. It is also essential that appropriate co-ordinating mechanisms be

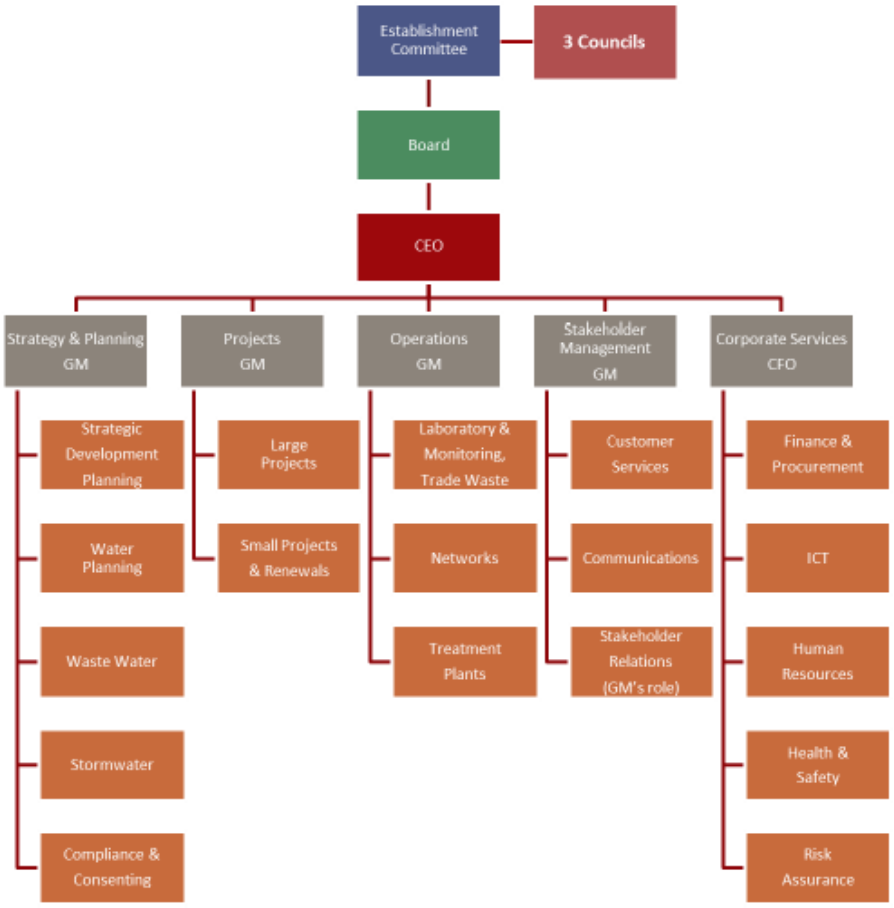
put in place to ensure good co-ordination with council roading, town planning, transport and economic development activities. This is often an area of failure of poorly designed CCO structures that can take on a life of their own devoid of the wider community context.

- **Planning for Growth**: It will be important to develop strong coordinating mechanisms between the CCO and council planning functions to ensure alignment between water network development and council growth plans. These can be mandated in the CCO constitution and SOI.
- **A not-for-profit CCO structure**: This type of CCO is essentially a cooperative in favour of water service customers. Customers will benefit from any surpluses generated from productivity improvements in the form of lower water charges. It is important to note that given the Councils' statutory obligations in water, the responsibility to provide new equity funding will remain with the councils should that need ever arise. No such need is evident in the current 30 year forecasts.
- **Significance of shareholding**: Under this arrangement the ownership of shares concerns the extent to which the funder of last resort risk should be borne by the different councils. The other aspect is the power to appoint Establishment Committee members and the level of influence in a limited number of major decisions. Initial shareholdings will be determined by the value of assets and debt contributed by each council on formation as set out in the Commercial Case. The final governance arrangements will need to allow for the possible inclusion of additional councils who may wish to join in the future.
- **Major decisions of the CCO**: Each Council will hold one third of the votes required for most day to day decisions which would be passed by simple majority i.e. any two councils will need to agree. However, certain major decisions will require a super majority of not less than 75% of shareholder votes to pass. Councils' votes on these major decisions will be determined by their shareholding in the CCO. These decisions are:
  - Major transactions as defined by the Companies Act
  - Any change to the CCO constitution
  - Any issue of shares in the CCO
  - Increase in debt over a certain cap or ratio
  - Any change in the purpose of the CCO or scope of services
  - Acceptance of another council as a new shareholder
  - Any distribution of capital to shareholders
  - Taking steps to wind up the CCO

  Any implementation of residential water metering will require specific prior approval by the council concerned; it cannot be a decision of the CCO.

Confidential

A high level overview of the proposed CCO structure is set out below:



The Councils currently employ 217 FTE staff in water activities it has been determined that during a transition period of three years staff numbers can be reduced to 181 due to efficiencies. This will be an important cost saving that is simply not available in other options (ESS or Status Quo). It is not anticipated that significant redundancies will be required as this reduction over time is within the levels of normal annual staff turnover. To estimate required staff numbers a pro forma organisational structure was developed for the CCO with staff numbers being established by mapping existing staff positions in the Councils to the relevant CCO functions and teams. Duplicate positions were then removed and the required support and senior management staff numbers calculated. Finally benchmarks were applied to cross check staffing requirements.

Revenue Model

It will be essential to establish a clear process for determining water service tariffs. The CCO needs to be able to raise the necessary revenue to cover its operating costs by direct billing. Direct billing is also important to establish a relationship between the customer and service provider. It is desirable to move to a unified tariff structure across the sub-region as soon as possible. This does not mean that customers will need to be metered. There would be a common unified non-metered tariff for all non- metered customers in the sub-region and a common unified metered tariff for those customers with meters.

Unified tariffs implies that the proportion of waters revenue collected from each council area would be very close to the proportion of total sub-regional water volumes.

However, to ensure that each Council's water customers receive a fair share of the savings generated by the CCO we have assumed that a transition of four or more years may be required.

This doesn't prevent the introduction of unified tariffs in less than four years as the transitional period adjustments could simply be reflected as a transitional levy or discount against the standard tariff. If CCO savings are greater than expected the transition period could be shortened. The following principles should be applied to water revenues.

Principles for Water and Wastewater

- CCO revenues based on sustainable whole of life costs and long term cost reduction
- Equity between customers
- Objective to move to price harmonisation over time with a unified tariff, but include differentiated tariffs to balance revenue for a transition period to ensure all councils benefit fairly from the establishment of the CCO
- CCO to bill customers directly as soon as possible – this does not require meters
- Must allow for both volume and fixed rate charging
- A hardship mechanism should be included
- Sits within SOI, monitoring framework and no surprises policy

Water and Wastewater Tariff Setting Process

- CCO Board recommends revenue budgets by council area plus unified tariffs with transitional adjustments
- Establishment Committee approves on majority vote with minimum of two councils voting for it
- Establishment Committee passes to Councils for endorsement
- Councils choose the recommended tariff or their own tariff during the first four years. After this they must accept the unified tariff (with transitional adjustments if applicable)
- If Council choose their own tariff, CCO may charge council fair costs for billing system amendment and support
- If Council's own tariff generates less than revenue budget then Council provides top-up to CCO
- If Council's own tariff generates more than revenue budget then Council remits surplus to CCO

Stormwater

Council's fund CCO for agreed opex and capex budgets and CCO charges on a cost recovery basis documented in a MSA.

Environmental and Regulatory Compliance

A CCO will deliver an improved environmental and regulatory compliance. The key reason for this is directors of a CCO will become personally liable for any significant environmental and regulatory compliance breaches. In addition, a CCO as a separate high profile water business is likely to come under sustained compliance pressure from regulatory authorities and will have greater financial flexibility to make any necessary investments.

Confidential

Resilience

Resilience is one of the most important benefits offered by the CCO model. It enables key strategic decisions to be made with the objective of a more stable supply and reduces the probability of failure. This is supported by the ability to exploit network synergies and using a single coordinated asset management plan and greater financial flexibility. A larger pool of staff in one entity reduces problems due to the departure of key staff.

Risk

Based on the risk evaluation workshop and subsequent analysis the CCO option has been rated as the least risky option. The option scored best or equal best in all categories except three:

- **Customer Services** – While problems in this area were considered less likely than for the Status Quo it is considered that the consequence will be higher as customers will have higher expectation of a specialist, high profile water services organisation.
- **Planning Alignment** – This is the risk that water services are not well aligned with council district and town planning efforts or growth requirements. The CCO was second place equal with ESS as the water services planning function will be in a separate organisation from council. This can be mitigated by good coordinating mechanisms which will be documented in the CCO's constitution and SOI.
- **Low Transparency** – The CCO was considered to have a higher perceived likelihood of low transparency in its decision making as it would be a separate company. However, this risk can be mitigated by strong disclosure and reporting requirements in the CCO constitution and SOI.

Financial

The CCO option has been forecast to produce operating and capital expenditure savings along with funding optimisation as set out in the following table. These are nominal amounts which include inflation.

Potential Savings - CCO	Ten Years – 2017/18 – 2026/27				
	Opex	Capex	Combined	Debt Optimisation	Total
	$m	$m	$m	$m	$m
Base Case	21.5	41.4	63.0	44.1	107.1
Positive Case	35.8	68.0	103.7	36.9	140.6

Potential Savings - CCO	28 Years – 2017/18 – 2048/49				
	Opex	Capex	Combined	Debt Optimisation	Total
	$m	$m	$m	$m	$m
Base Case	153.5	150.9	304.4	164.0	468.4
Positive Case	213.4	235.2	448.5	162.2	610.7

The operating savings are: direct staff savings, professional fees, other operating costs and overhead or indirect costs. They also include the additional costs of establishing and running a CCO and the stranded overheads left in councils. Transition and establishment costs are expected to be approximately $10.3m over a five year period.

The CCO is also able to fund capital expenditure using more optimal levels of debt than is typically available to councils. The combination of operating and capital expenditure savings in the CCO with funding optimisation will enable a significant reduction in the level of water charges to customers.

Cost to Customers $m From 30 June 2017	10 Years Base	10 Years Positive	28 Years Base	28 Years Positive
Status Quo	1,286.7	1,286.7	4,760.6	4,760.6
CCO-Funding Optimised	1,190.5	1,162.3	4,341.5	4,217.9
Revenue Reduction $m	96.1	124.4	419.1	542.8
%Reduction	7.5%	9.7%	8.8%	11.4%

The balance of savings is available to councils through savings on stormwater operating and capital expenditure as follows:

Stormwater Savings $m From 30 June 2017	10 Years Base	10 Years Positive	28 Years Base	28 Years Positive
Opex and Capex Savings	11.0	16.3	49.3	68.0

Council Impacts

There are a number of impacts on the three councils to consider:

Stranded overheads. These have been estimated at $1.6m p.a. for the three Councils after a two year transition period. In the long term this is very conservative as it is expected that Councils will be able to eliminate these eventually. The financial analysis assumes that these amounts will be reimbursed to the Councils each year in cash. This could take the form of a repayment of Councils' shareholder loans to the CCO.

The impact of the CCO on WDC and WPDC key financial ratios of debt/revenue, interest cover and gearing is positive. The impact of the CCO on HCC key financial ratios is positive, however in the HCC Group consolidated accounts which includes the total CCO financials, the Debt to Revenue exceeds 200% from 2017/18 onwards. However, it does not exceed guidelines laid down by the Local Government Act 2002 which has Revenue to Debt ratio of 250% as a maximum. Credit rating agencies would look beyond the consolidated group accounts to the parent accounts when assessing ratings. Further metrics reflecting the impact of the formation of a CCO on the Councils are set out in Appendix 12.

Confidential

HCC Revenue / Debt Ratio

Year to 30 June	Status Quo	Parent	Group
2017/18	196%	194%	222%
2018/19	194%	190%	231%
2019/20	190%	179%	224%
2020/21	186%	174%	223%
2021/22	183%	162%	215%
2022/23	183%	156%	203%
2023/24	178%	163%	210%
2024/25	167%	153%	205%

On an equity accounting basis HCC's debt / revenue ratio would be the same as parent ratios above.

Council viability. The removal of water and wastewater activities would be a major change for Councils in terms of assets, debt and staffing. It has been suggested that the viability of small councils may be threatened. However, water services benefit from economies of scale which even larger councils like HCC can never truly achieve. In addition, it can be argued that the reallocation of water services to a jointly owned water utility will allow councils to better focus their resources and efforts on their other core activities. Such activities may not offer the same economies of scale as water and benefit strongly from local input and decision making.

Option Summary

Pros
1. Single focus organisation
2. Facilitates capex programme
3. Enhances resilience – security of supply
4. Strategic asset management of whole network
5. Support economic growth and development in sub-region and wider region
6. Provides for a centre of excellence
7. Council liabilities become contingent rather than direct and shared
8. Allows optimal funding model – intergenerational fairness
9. Lowest cost option offering savings for customers
10. Lower assessed risk profile
11. Will face greater public scrutiny leading to higher performance
12. Benefits from professional independent governance.

Confidential

Cons
1. Leaves councils with some stranded overheads
2. Difficult to implement
3. Accountability to Councils is more remote

The CCO option is recommended as the best option available to the councils. It strongly meets all the Councils' identified investment criteria listed in the Strategic Case while offering customers significantly reduced water services charges. Savings are forecast to total $468.4m over 28 years.

Non-Asset Owning CCO

An alternative to an asset owing CCO as described above is a non-asset owing CCO. This would essentially be the ESS model placed within a company structure jointly owned by the three Councils. The one advantage it would have over ESS is a clearer governance structure with the ability to appoint experienced independent directors who would have real authority over the company. This advantage on its own would not be sufficient to offer a significant improvement in performance over the ESS.

Its strengths and weakness would be very similar to ESS. Problems with this model elsewhere include:

- Difficulties with alignment of interests between the Councils
- Political interference from individual Councils typically focussed on the short term
- Funding uncertainties and the requirement to often secure funding on a project by project basis
- Lack of a single common LTP and strategy
- Differences with systems and procedures between the Councils

The fundamental flaws are:

- No control of revenues
- Inability to impose common network standards and exploit network synergies
- With no revenue control and no assets the company can not raise debt funding and benefit from optimising this nor plan and execute coordinated capital investment programmes over time

For these reasons a non-asset owning CCO offers few advantages over ESS and hence substantially fewer benefits than an asset owning CCO.

2.5 Stormwater

We have been asked to evaluate the options with or without urban stormwater. The Status Quo itself is a three waters model where each council owns and operates its own water, waste water and stormwater assets. For ESS and CCO options the following stormwater options are possible as shown in the table below.

Control of Stormwater Assets	ESS	CCO
Council owns and manages	✓	✓
ESS or CCO owns and manages	✗	✓
ESS or CCO manages, but does not own	✓	✓

As the ESS unit is not a legal entity; it cannot own other councils' stormwater assets. Mott MacDonald considered the delivery of stormwater services under both the ESS and CCO options in their engineering report. They noted that the planning for stormwater services is closely aligned with urban and rural planning and roading network planning – these activities will remain with the three Councils.

Much of the capital works programme for stormwater infrastructure is also aligned with and often forms an intrinsic part of roading works across the sub region.

Renewals and O&M aspects could potentially be ring-fenced as a service that could be provided by an ESS unit or a CCO under a management contract.

A contract arrangement for the provision of stormwater O&M services and the implementation and delivery of a renewals and/or improvement programme could be set out for the ESS unit or CCO to deliver.

Capital works for growth, once planned and defined by the individual Councils (and where these were not part of a roading or other development contract) could also be delivered by the ESS unit or the CCO. Given that this work will not have the interconnections that the water and wastewater networks may have, it would be easier to deliver the programme to individual councils with specific funding attached to each project and minimal need to align agendas.

The provision of the services would essentially be cost neutral through the ESS unit or the CCO.

Given the size of the councils, stormwater forms a very small part of the water team's activity so if management of it is left with councils in practice one or two engineers are "left behind". This is not conducive to professional development and economies of scale.

Given these factors the management of stormwater activity, other than planning, should be moved to the ESS unit or CCO where procurement and management efficiencies should apply.

Furthermore, the delivery of stormwater services are essentially a public good service where the revenue to provide the service is collected via the land rates and cannot (in the most part) be directly associated with individual properties. This makes it problematic for a CCO to own the stormwater assets as it will always be dependent on councils to provide sufficient funds to operate and maintain the assets. Also both the CCO and its directors could be sued or prosecuted for health and safety or environmental breaches associated with these assets and it is very unlikely a professional director could be persuaded to accept full responsibility for the assets without control of the funding. Consequently, we recommend that the CCO should not own stormwater assets.

Given the above we recommend the following:

- Councils retain ownership of their stormwater assets.
- The ESS or CCO manages urban stormwater operations and maintenance and other agreed stormwater capital works under Management Service Agreements with each council on a cost recovery basis.
- Each Council retains the planning for stormwater infrastructure in house as part of their urban and roading network planning.

2.6 Summary Options Assessment

The financial impacts associated with each option have been quantified as far as possible and this analysis is a key component of the options assessment. However, not all impacts can be readily quantified in monetary terms. It is appropriate to also take qualitative considerations into account. To this end, a simple form of multi-criteria decision analysis has been used to complement the financial analysis.

A decision support workshop was held with council personnel (elected representatives and officers) to discuss and agree a range of criteria against which to assess the options. Consistent with the BBC guidelines, the criteria were grouped under two headings; objectives and critical success factors (CSFs).

The weighting given to each objective and CSF was discussed and agreed at the workshop. The weighting is designed to give a sense of relative importance notwithstanding that all objectives and all critical success factors are important. In general, the headings used for objectives and critical success factors reflect those that are contained in the BBC guidelines. The objectives and the CSFs have been tailored so that they are specific, and as relevant as possible, to water services.

The assessment criteria agreed at the workshops are summarised below.

Objectives

Broad Objective	Detailed Objectives	Weighting
Effectiveness	▪ Provide better customer services in terms of reliability (including fewer water restrictions and increased security of supply), quality and responsiveness ▪ Lift customer product and service quality through improved organisational, managerial and financial focus ▪ Promote and value the efficient and sustainable use of water	25%
Efficiency	▪ Improve the cost effectiveness of service through: – Better long term and more joined up planning, development and management of the networks on a sub-region basis – Generating long term/sustainable savings – Maximising economies of scale – Manage water assets in a financially sustainable way based on asset condition understood and depreciation fully funded	15%
Costs lower than LTP	▪ Deliver services that over, the long term, cost less than they would under the status quo option	20%
Alignment	▪ Achieve regulatory compliance ▪ Meet agreed customer expectations ▪ Capability to manage future environmental/regulatory outcomes ▪ Maximise influence over regulatory outcomes	10%
Reducing risk	▪ Resilient organisation that drives long term value through being fit-for-purpose – Infrastructure – Human capital – Financial capacity – Technical capacity	10%
Community voice/focus	▪ Appropriate governance to ensure the community continues to have a voice	20%

Confidential

Critical success factors

CSF	Generic Description	Specific to Water Services	Weighting
Strategic fit and business needs	How well the option: ▪ meets the agreed investment objectives, related business needs and service requirements, and ▪ integrates with business strategies and plans	▪ Strong customer focus ▪ Supports the sub-regional Three Waters Strategy and associated goals ▪ Meets future growth requirements	25%
Potential value for money	How well the option: ▪ optimises value for money from both organisational and society perspectives, and ▪ minimises associated risks	▪ Delivers value for money over the long term (30 years) ▪ Delivers benefits for the sub-region and each of the three Councils (i.e. avoids benefitting one Council at the expense of the others) ▪ Reduces risk/better risk mitigation (compared to what it otherwise would be)	17%
Service provider capacity and capability	How well the option: ▪ matches the ability of potential service providers to deliver, and ▪ appeals to providers	No weighting applied as scores for all options would be equal and options would meet the CSF	0%
Potential affordability	How well the option: ▪ is financially sustainable, and ▪ can be implemented within funding constraints	▪ Affordable to the community	20%
Potential achievability	How well the option: ▪ is likely to be delivered given organisational ability to respond to the changes required, and ▪ matches the level of available skills required for successful implementation	▪ Is supported by the community ▪ Deals with the issue of stranded overheads ▪ Supports retention and development of high quality staff	23%

Confidential

CSF	Generic Description	Specific to Water Services	Weighting
Achieves regulatory compliance	N/A	▪ Meets environmental, water quality, health and safety and other relevant legal and regulatory requirements	15%

A simple approach to scoring the options against the various objectives and CSFs was also agreed at the workshop and this is shown below.

Scoring system

5.0	**Strongly meets** the criteria in **all respects**
4.5	
4.0	**Meets** the criteria in **most respects**
3.5	
3.0	Only **partly meets** the criteria
2.5	
2.0	**Does not meet** the criteria (but **does not contradict** it)
1.5	
1.0	**Fails to meet** and is **contrary** to the criteria. A score of 1 for any Critical Success Factor removes the option from further consideration

2.7 Multi Criteria Options Analysis

We have scored the options against the criteria. A preliminary scoring was presented to and discussed at an Options Workshop held on 2 April. In light of discussion at the workshop, and drawing on further work undertaken, our assessment of the options, using the scoring system, is shown below.

Confidential

Option scores

Assessment Criteria	Weight %	Status Quo	ESS	CCO
Objectives:				
Effectiveness	25%	3/5	2/5	4/5
Efficiency	15%	3/5	3/5	4/5
Improved Financial Sustainability	20%	3/5	3.5/5	4/5
Alignment	10%	2/5	3/5	4/5
Reducing Risk	10%	3/5	2/5	4/5
Customer Voice/ Focus	20%	3.5/5	3.5/5	4/5
Critical Success Factors:				
Strategic fit	25%	3/5	3.5/5	4.5/5
Value for Money	17%	2/5	2.5/5	4/5
Affordable	20%	3/5	3.5/5	4.5/5
Achievable	23%	3/5	3/5	4/5
Regulatory Compliance	15%	2.5/5	3/5	4/5
Overall Weighted Score	Out of 100	**58%**	**60%**	**82%**

The reasoning behind the scores in the option scores table above is set out in Appendix 5. It is important to note that determining the best option is not driven solely by the scoring system. It is the analysis and informed judgements that underpin the scores that are of key relevance to decision making. The scoring system is just a mechanism for bringing structure to the assessment.

Most of the comments in Appendix 5 focus on the ESS and CCO options because these are the options that give effect to the need to change. Across several of the objectives and CSFs, we have given the status quo a score of 3 out of 5; that is the status quo partly, but does not fully, meet the criteria. This should be interpreted as the status quo is providing a basic level of service and the score of 3/5 is intended to reflect this. However, as our analysis has shown, and as also found by previous reviews, there are real challenges and risks around future service delivery and opportunities to do better and, hence, attain a score in the 4 to 5 range. In the instances where we have scored the status quo above or below 3, this is explained.

2.8 Options Assessment Summary

The different assessments of each option are brought together in the following table:

Decision Factor	Status Quo	ESS	CCO
Multi – Criteria Score	58%	60%	82%
Combined Savings (10 years)	NA	$27m	$107m
Combined Savings (28 years)	NA	$104m	$468m
PV of Capex & Opex Savings	NA	$35m	$91m
Risk Rating	Medium	High	Low
Overall Ranking	**2nd**	**3rd**	**1st**

ESS has an overall ranking less that the Status Quo as possible financial benefits are offset by the risks. The risk/reward ratio does not justify a change from the Status Quo.

The CCO is clearly the highest ranking option and therefore recommended by Cranleigh as the preferred option. It meets all the agreed investment objectives well, is lower risk and offers substantial financial benefits. Key advantages include:

- Water services are an activity with substantial economies of scale. The CCO option is the only one which offers scale across all key areas including staffing, systems, operations, network ownership and funding.
- A CCO structure is also the only option which brings a full Waikato sub-regional view and solution supported by a robust and responsive governance structure. ESS goes some way towards this, but lacks strong governance and a single unified network.
- Major cost savings for water customers and councils due to opex, capex and the optimisation of funding structures made possible by a specialist, asset owning entity. Cost savings are supported by evidence from similar amalgamations overseas and in New Zealand as identified in Mott MacDonald's engineering report.

Confidential

3. COMMERCIAL CASE

Summary:

- The establishment of a CCO would require: a legal entity; acquisition of the Councils' assets and business; raising of CCO debt; and payment to the councils for the value of their respective shareholdings and establishment of management service agreements.
- Assets will be valued using Optimised Depreciated Replacement Cost. It is proposed that the councils will receive full value given to them as a mixture of cash, shareholder loans and equity shares.
- The total consideration and percentage shareholding for Waikato would be $202m (17.3%); Hamilton $677m (63.6%) and Waipa $171m (19.1%).

This section outlines the broad approach that the councils would need to follow to merge their water services into a jointly owned CCO. This includes the transaction structure and procurement matters.

3.1 Transaction Structure

Subject to detailed legal, tax and accounting advice it is likely that the transaction to establish the CCO would take the following form:

- The CCO legal entity is formed. Based on initial advice from TaxTeam (see Appendix 6) this is likely to be either a registered company or a limited liability partnership. We understand that the difference is more technical in nature and will not affect ownership and control by Councils in a practical sense. Specialised advice will be required at the time of implementation to determine the optimum legal structure.[1]
- The CCO entity then acquires each of the Councils' water assets and businesses. It would pay for them by issuing the Councils a combination of new equity shares in itself, shareholder loans and cash. The cash component will be equal to each Councils' water related debt at time of settlement.
- Management Service Agreements (MSAs). For a transition period after settlement it will be necessary for the Councils to continue to supply or manage many of the services required to operate the CCO. These services will need to be documented in MSAs and councils should be reimbursed their full costs in providing these services.

3.2 Shareholding Arrangements

Each Council's shareholding in the new CCO can best be determined by the following principles:

- **Value of Assets**. Each of the Councils periodically revalues their fixed water assets using a methodology know as Optimised Depreciated Replacement Cost (ODRC) or a close variation of it. Independent, international engineering firms have been employed to do this work. In very simple terms the cost to replace the assets today is estimated. This estimate is then depreciated to reflect the remaining useful life of the assets with the net figure becoming the

[1] For simplicity in this report we have assumed that a registered company would be used and so refer to shares and shareholdings rather that a partnership interest.

asset value in a council's balance sheet (e.g. an asset with a replacement cost of $1m which was halfway through its life would be valued as $500,000).

We recommend that immediately prior to formation of a CCO the councils appoint one valuer to value all their water assets using an agreed common set of criteria. It will be important to determine a fair adjustment process to asset valuations in the case that there are significant variations in value, as any change will have implications for shareholdings. It is also recognised that there cannot be large changes to asset values post transition to the CCO as this will undermine the credibility of the CCO. For this reason it is expected that the CCO would retain the same asset valuation methodology.

- **Working Capital.** To operate successfully the CCO would need to start life with sufficient working capital. Net working capital is largely made up of inventory plus receivables less payables. In principle the CCO will acquire each of the council's waters related net working capital on settlement. Note that in practice this may happen at a later date as the councils may continue to manage receivables and payable for a period under MSAs.
- **Reserves**. WDC and WPDC maintain a number of equity reserves on their balance sheets relating to water activities. These can be either positive or negative and may represent obligations of the council water business to other council business or vice versa. Another example is where council has received funds from targeted rates or development contributions which have not yet been spent on new water infrastructure. HCC does not operate reserves to account for these matters. For simplicity it is recommended that on settlement where a council's net reserves are positive, they be treated as an asset to be acquired by the CCO. Where they are negative they are treated as a debt to be settled by a cash payment from the CCO.
- **Consideration**. Consideration is the value that the CCO will pass to councils when purchasing their water assets. The total value each council receives must equal the value of the assets they sell to the CCO. Consideration would consist of a mixture of cash, shareholder loans and equity shares issued by the CCO. Cash would be paid to council equal to their existing water debt, while councils would receive shareholder loan and equity shares in proportion to the net pre-CCO equity each council has in its water business. Net pre-CCO equity will be equal to Total Assets Contributed minus Total Debt for each council.
- **Existing Debt**. On settlement councils should each receive a cash payment equal to their existing water related debt including external bank debt and any negative reserves.
- **Shareholder Loans.** It is recommended that part of the consideration councils receive is in the form of shareholder loans. While in practice no cash would change hands it is comparable to the councils each lending the CCO some money which it immediately pays back to the councils in part payment for the councils' water assets. It could be thought of as a type of vendor finance. In the CCO's books this will appear as a debt – loans from shareholders. In the councils' books it will be shown as an asset – loan to water CCO. It is not anticipated that the CCO would pay interest on these loans.

  The inclusion of shareholder loans from the outset provides the councils accounting and legal simplicity and flexibility in dealings with the CCO. For example, if at some point it became necessary for the CCO to make a payment to councils it could pay off a part of the shareholder loans. An example would be reimbursement of stranded overheads and monitoring costs. They are also a simple way of dealing with vested assets. Developers will continue to be obliged to vest (gift) new water assets they have built with the councils. If councils then on-gift these assets to the CCO they will appear as revenue in the CCO's accounts. However, the CCO may more simply purchase the assets and add the value of the assets received to the relevant council's shareholders loan balance by way of payment without causing any distorting revenue effects.

Confidential

Given the size of the merged water business we would suggest initial total shareholder loan balances are equal to 25% of the CCO's assets. Invariably this percentage will decline over time due to inflation and growth in the value of the CCO's water assets.

- **Shares Issued**. Each council will receive voting shares in the CCO in proportion to its net pre-CCO equity in the water business.

Based on current forecasts the application of the above principles will result in the following payments and shareholdings in any new waters CCO. Note that the actual amounts will invariably be somewhat different as values will change between today and the CCO settlement date.

Forecast Estimates As at 30/06/2016	Waikato $m	Hamilton $m	Waipa $m	Total $m
Council Water Assets (2 Waters)				
Fixed Assets	198.7	667.1	162.6	1,028.4
Net Working Capital	3.1	9.7	3.3	16.1
Surplus Net Reserves	0.0	0.0	4.9	4.0
Total Assets Contributed	201.8	676.8	170.7	1,049.3
% of Total Assets	19.2%	64.5%	16.3%	100.0%
Council Water Debt				
External Debt	25.2	109.6	0.0	134.7
Deficit Net Reserves	22.1	0.0	0.0	22.1
Total Debt	47.3	109.6	0.0	156.8
Net Pre-CCO Equity	154.6	567.2	170.7	892.5
% Equity Pre-CCO	17.3%	63.6%	19.1%	100.0%
CCO Purchase Price Paid				
Cash	47.3	109.6	0.0	156.8
Shareholder Loans	45.4	166.7	50.2	262.3
Equity Shares	109.1	400.5	120.5	630.2
Total Purchase Price	201.8	676.8	170.7	1,049.3
% Shareholding	17.3%	63.6%	19.1%	100.0%
Opening CCO Debt				156.8

3.3 Service Procurement

To deliver the CCO structure the councils will require a range of specialist services, solutions and support from external suppliers. The likely requirements for new services or suppliers will fall into the following broad categories:

- Engineering services;
- Logistics and support services, especially relating to physical records;
- Information and Communications Technology (ICT) solutions and services;
- Procurement services;
- Commercial and management consulting services;
- Property services, including refurbishment and fit out;
- Banking facilities and debt funding;
- Insurance;

- Legal;
- Tax;
- Accounting; and
- Human resources & recruitment.

In most cases the three councils will already have a number of suppliers available to them in each of these categories and should face not problems in procuring the necessary services. These services would be procured as part of the implementation plan in the Management Case.

Confidential

4. FINANCIAL CASE

Summary

- It has been assumed that the CCO is formed on 1st July 2016 and becomes operational on 1st July 2017 and manages all three waters, owns the water and waste water assets, with ownership of the stormwater assets remaining in the three councils.
- The analysis demonstrates that the CCO delivers significant financial benefits through operational and capital expenditure savings across the three waters and through debt optimisation within the CCO.
- Over the first ten years these financial benefits range between $107m and $141m.
- Over the 28 year period the financial benefits range between $468m and $611m.
- The reduction in customer water and waste water charges is estimated at between $96m (7.5%) and $124m (9.7%) in the first ten years and between $419m (8.8%) and $543m (11.4%) over the 28 year period.
- In addition, the operating and capital expenditure savings from managing the stormwater assets on behalf of councils ranges between $11m and $16m for the first ten years and between $49m and $68m over 28 years.
- The projected savings take into account the establishment and transition costs of a CCO, estimated at $10.3m, ongoing council monitoring costs and estimated stranded overheads.
- Ernst & Young conducted a peer review of the financial model for completeness, accuracy and logic.

4.1 Introduction

The purpose of the Financial Case is to quantify the range of financial benefits, the level, nature and timing of costs involved with the establishment of a Water CCO or ESS and to assess the impact on the respective council's financial statements.

4.2 Overview

Each of the three councils operates a water business which essentially comprises water delivery, wastewater and stormwater. By their nature they comprise of large capital assets including water reservoirs, water pipes and water treatment plants. These typically have long lives which can extend to greater than 100 years. Given the size of these assets, careful planning and timing of major capital expenditure can have a significant influence on the effective operations of these types of businesses.

4.3 Methodology

Detailed financial analysis has been undertaken that compares the three potential options, namely:

- The Status Quo (SQ)
- Asset owning and rate-payer owned Council Controlled Organisation (CCO)

- Enhanced Shared Services (ESS)

The Financial analysis compares the financial differences between the Status Quo, the CCO and the ESS.

Financial forecasts for the Status Quo were developed for the water activities for each of the three councils using the current LTP's and 30 year infrastructure strategiess. These were consolidated to provide the Status Quo view. The model has been built taking inflation into account and is expressed in nominal dollars.

CCO and ESS models were established using the Status Quo as a base and deducting estimated operational and capital expenditure savings that are potentially achievable under those structures. Operational savings were phased in gradually over three years and the costs of establishment, ongoing council monitoring costs and stranded overheads were included in the operational costs of the CCO and ESS. In addition, under the CCO model, prudent debt optimisation was applied, to enable additional financial benefits to be passed on to customers.

The key outputs from the analysis measured the following:

- Operational and capital expenditure savings compared to the Status Quo
- Reduction in water and wastewater charges to customers
- The Present Value of operational and capital expenditure savings compared to the Status Quo
- The impact on Council financial statements including key financial ratios of moving to a CCO.

The model developed is a 30 year model starting with the 2015/16 financial year. A realistic start date for an ESS unit or CCO would be at the beginning of the 2017/18 and the analysis undertaken compares the first ten years from 2017/18, 2 years beyond the current LTPs and over the total 28 year period of the Infrastructure Strategies from the CCO start date.

It should be noted that the projections for the first ten years, which are largely based on the LTPs, are more reliable than years 11-28, which are partially based on the councils 30 year infrastructure strategies which are long term estimates. Therefore the 28 year results should be seen as a possible outcome based on councils' current long term estimates driven by factors such as population growth rates and long term capital expenditure requirements.

Changes in the year 11-28 forecasts will impact both the SQ, ESS and CCO models. For example if the capital expenditure forecasts change this will have the impact of under or overstating the potential savings in the ESS and CCO models. This is covered in the sensitivity analysis.

4.4 Key Findings

ESS

The Enhanced Shared Services model assumes the strategy, planning and co-ordination of water activities comes together under a single group within one council on the 1st July 2017. It assumes a two year transition period.

Confidential

Total Operating and Capital Savings – ESS

The following table represents the total operating and capital expenditure savings that an ESS is expected to generate compared to the SQ.

Total Cost Savings – ESS	First Ten Years 2017/18 – 2026/27			28 Years		
	Opex	Capex	Total	Opex	Capex	Total
	$m	$m	$m	$m	$m	$m
Savings over SQ	14.9	12.3	27.2	64.5	39.5	104.0

In nominal terms, the total operating and capital expenditure savings amounts to $27m over the first ten years and $104m over the 28 year period.

The key saving assumptions include a reduction in staffing of 10 FTEs ($850k per annum), general operating savings of 2% and general savings on capital expenditure of 1.5%. Implementation costs for the ESS are expected to be in the region of $1m.

These savings would be shared by councils on an agreed basis, perhaps as a % of water volumes or current operating and capital expenditure costs. It is assumed that savings are passed on to customers as rate reductions.

These are less than a quarter of the savings that could be achieved under a CCO and this is because the lack of common ownership of the network reduces operating and capex efficiencies.

CCO

The CCO model assumes that water and wastewater are owned and managed by the CCO and that stormwater is managed on behalf of the councils who continue to own the stormwater assets. A three year transition period is assumed.

Following the Mott MacDonald report, conservative base and positive scenarios have been developed for the CCO. We have based our recommendation on the base case.

The key financial benefits of the CCO option are presented in the following table.

Potential Savings – First Ten Years From 1 July 2017 – Base Case	Hamilton $m	Waikato $m	Waipa $m	Total $m
Operating Costs	10.7	5.4	5.4	**21.5**
Capital Expenditure	24.9	6.5	10.1	**41.4**
Combined	**35.6**	**11.9**	**15.5**	**63.0**
Debt Optimisation	16.7	16.1	11.2	**44.1**
Total Savings	**52.3**	**28.1**	**26.7**	**107.1**
Total Savings for water customers of a CCO (inc. developers)	45.8	26.4	23.9	**96.1**
Stormwater Savings in Councils	6.5	1.7	2.8	**11.0**
Total Savings	**52.3**	**28.1**	**26.7**	**107.1**
% savings on SQ Forecast Council Revenue	6.6%	8.4%	7.7%	7.2%

Confidential

Potential Savings – 28 Years From 1 July 2017 – Base Case	Hamilton $m	Waikato $m	Waipa $m	Total $m
Operating Costs	75.6	39.3	38.5	**153.5**
Capital Expenditure	115.6	15.8	19.5	**150.9**
Combined	**191.3**	**55.1**	**58.1**	**304.4**
Debt Optimisation	90.8	50.4	22.7	**164.0**
Total Savings	**282.1**	**105.5**	**80.8**	**468.4**
Total Savings for water customers of a CCO (inc. developers)	252.5	98.0	68.6	**419.1**
Stormwater Savings in Councils	29.6	7.5	12.2	**49.3**
Total Savings	**282.1**	**105.5**	**80.8**	**468.4**
% savings on SQ Forecast Council Revenue	8.9%	9.7%	6.7%	8.6%

Total Operating and Capital Expenditure Savings - CCO

This represents the total operating and capital expenditure savings that a CCO is expected to generate compared to the Status Quo, in nominal terms, over the first ten years of a CCO and over a 28 year period.

A range between a pessimistic, conservative base case expectation and a more positive expectation is shown. A number of similar amalgamation projects in Victoria, Australia have consistently achieved savings beyond initial estimates.

The following table represents the total operating and capital expenditure savings that a CCO is expected to generate compared to the Status Quo.

Total Cost Savings - CCO	Ten Years – 2017/18 – 2026/27			28 Years		
	Opex $m	Capex $m	Total $m	Opex $m	Capex $m	Total $m
Base Case	21.5	41.4	63.0	153.5	150.9	304.4
Positive Case	35.8	68.0	103.7	213.4	235.2	448.5

Under the base case, CCO operating savings compared to the Status Quo amount to $5.3m p.a. or 11% p.a. which includes staffing efficiencies of 18% p.a., a general reduction in operating costs of 5% p.a. and reduction in overhead costs of 15% p.a. After taking into account stranded overheads and ongoing council monitoring costs the net savings amount to $4.0m per annum or 6.5% per annum. This increases to $5.5m or 9.0% under the positive case. These savings would occur gradually over a three year transition period.

Capital expenditure savings average 5.7% per annum under the base case (8.9% in the positive case). This comprises of general efficiency and procurement savings of 4.25% (7.5% positive) with the balance being expected synergy savings achieved by combining the networks.

Stormwater operational and capital expenditure savings, included in the above table, range between $11m and $16m over the first ten years and $49m and $68m over 28 years. These would occur in the council accounts based on their relative stormwater expenditure.

Confidential

Funding Optimisation

A further benefit of a CCO versus the Status Quo will be its ability to optimise debt. This will have the impact of creating better inter-generational equity, by effectively replacing revenue with debt at the expense of an interest cost. We have run a debt optimised scenario in the CCO which maintains a minimum interest cover rate of 2.5 times[2] (this is the minimum interest cover ratio used by Watercare Services Ltd and is comparable to international benchmarks).

This will enable the CCO to further reduce the charges to its customers, over and above projected operational and capital expenditure savings.

Under the CCO Model the maximum debt / equity ratio is 30% in the early years as it takes on the existing council debt and funds establishment costs. It falls back to 16% over time. This is still conservative and comparable to other water companies in the context of a once in a generation major capex programme. Watercare has a current gearing ratio of 17.3% (this will inevitably climb as Watercare is planning $4bn of capex over the next 10 years) and comparable mid sized Australian companies have an average gearing ratio of 20.4%. The average for all Australian water utilities is 26.5%[3]. As a further benchmark the UK water regulator Ofwat, when calculating a fair cost of capital, estimates that a typical water company would have a gearing ratio of 57.5%. In fact gearing ratios for UK water companies exceed 60%.

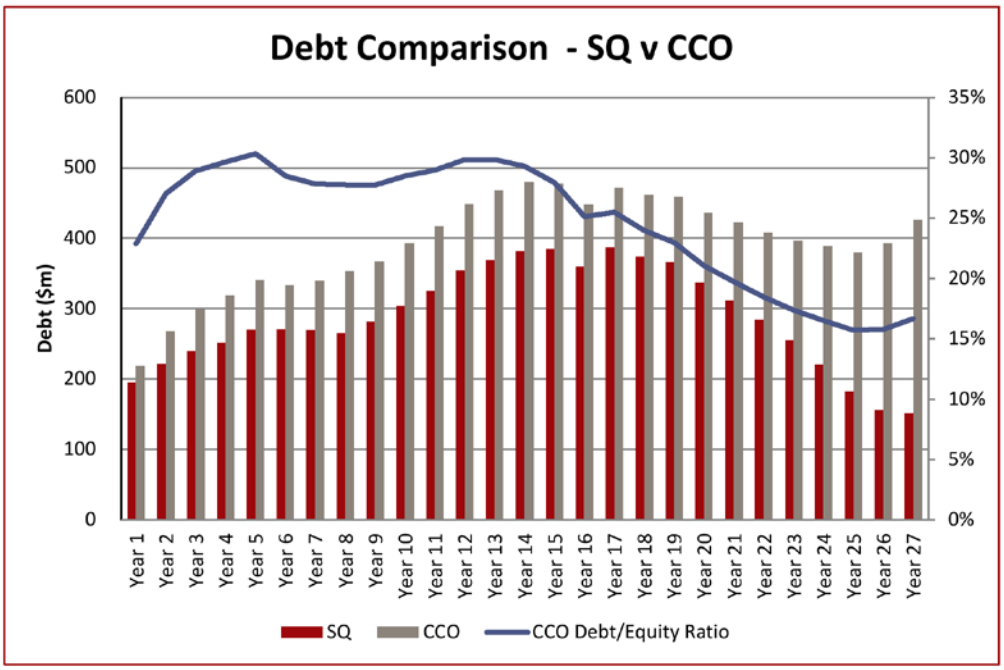
The table below shows the level of debt in the CCO model compared to the net debt position in the Status Quo.[4] Note that the debt to equity ratio falls as capex needs reduce.

[2] Interest Cover Calculated as (Profit Before Tax + Depreciation) divided by Net Interest. As Profit Before Tax is after paying interest an Interest Cover of 2.5x indicates that operating cash flows are three times higher that Net Interest payments.

[3] Australian National Water Commission 2012-13.

[4] Table excludes year 30 due to inclusion of Hamilton Water treatment plant in year 30 which distorts analysis.

Confidential



The current approach of Councils is to repay debt more quickly than a typical water utility would. This is natural when the debt simply forms part of total council debt. A council is raising debt to make a portfolio of investments many of which do not produce a direct cash return and will have different risk profiles. Debt must largely be serviced by rates and councils are right to be concerned about over burdening ratepayers.

However, debt within a water utility is of a different nature. It is raised to fund assets with a life of three or four generations and comes with a secure source of revenue in the form of water and wastewater charges. These factors mean that it is entirely prudent for a water utility to raise proportionally more debt than a council and repay it over a longer period. It also facilitates the smoothing of revenue increases to customers.

Savings to Customers

The combination of operating and capital expenditure savings in the CCO with funding optimisation will enable a significant reduction in the level of water charges to customers.

Cost to Customers $m From 30 June 2017	10 Years Base	10 Years Positive	28 Years Base	28 Years Positive
Status Quo	1,286.7	1,286.7	4,760.6	4,760.6
CCO-Funding Optimised	1,190.5	1,162.3	4,341.5	4,217.9
Revenue Reduction $m	96.1	124.4	419.1	542.8
% Reduction	7.5%	9.7%	8.8%	11.4%

The potential impact on total customer charges in respect to water and wastewater collected by individual councils is estimated below. Please note that due to the complexity of water services tariffs and charges across the three Councils this should be taken as indicative only and subject to change.

Confidential

Cost to Customers $m From 30 June 2017	10 Years Hamilton	10 Years Waikato	10 Years Waipa
Status Quo	687.7	305.1	293.8
CCO-Funding Optimised - Base	642.0	278.7	269.8
Revenue Reduction $m	45.8	26.4	23.9
% Reduction	6.7%	8.7%	8.1%

Cost to Customers $m From 30 June 2017	28 Years Hamilton	28 Years Waikato	28 Years Waipa
Status Quo	2,724.5	997.2	1,038.9
CCO-Funding Optimised - Base	2,472.0	899.2	970.4
Revenue Reduction $m	252.5	98.0	68.6
% Reduction	9.3%	9.8%	6.6%

In broad terms the above reductions would mean that over the next ten years water customers should expect to see the following reduction in their water and wastewater charges.

HCC

HCC does not specifically identify water and wastewater charges. Council analysis shows that the average household is expected to pay $566 per annum for water and waste water in 2015/16. Under a CCO, HCC customers would expect to see an average reduction of 6.7% in the water component of their rates bills forecast in the draft LTP. This equates to approximately $38 per annum savings on the current charges.

WDC

The cost to residential water customers varies across the Waikato district. On average in 2015/16, metered customers are expected to pay $1,268 per annum for water and waste water. This includes a volume charge of $1.70 per m3 and assumes annual average volumes of 214m^3. Non-metered customers are expected to pay $1,308.

Under a CCO WDC customers would expect to see an average reduction of 8.7% over the next ten years, which would reduce the m^3 rate from $1.70 to $1.55 in today's prices. The expected annual savings for water and waste water customers is expected in the vicinity of $106 per annum.

WPDC

The cost to residential water customers varies across the Waipa district depending on the type of connection. The current water and wastewater for a connection more than 100m from a supply pipe are $872 and $837 for a metered connection (assuming volume usage of 214 m^3 per annum).

Under a CCO, WPDC customers would expect to see an average reduction of 8.1% over the next ten years, which would reduce the m^3 rate from $0.85 ($0.98 GST inclusive) to $0.78 ($0.90 GST inclusive) in today's prices. The expected annual savings for water and waste water customers is expected to be approximately $68 per annum.

Confidential

Stormwater Savings

In addition the councils will achieve reductions in their planned stormwater operating and capital expenditure. This can also be able to be passed on to customers by way of reduced general rates. The reductions shown in the table below assume allocation of stormwater savings based on current planned stormwater operating and capital expenditure.

Stormwater Costs $m From 30 June 2017	10 Years Hamilton	10 Years Waikato	10 Years Waipa
Status Quo	119.8	24.9	41.2
CCO - Base	113.3	23.2	38.5
Revenue Reduction $m	6.5	1.7	2.8
% Reduction	5.4%	6.7%	6.7%
Stormwater Costs $m From 30 June 2017	**28 Years Hamilton**	**28 Years Waikato**	**28 Years Waipa**
Status Quo	452.1	70.3	121.0
CCO - Base	422.6	62.8	108.8
Revenue Reduction $m	29.6	7.5	12.2
% Reduction	6.5%	10.7%	10.1%

Development Contributions

The capital expenditure savings achieved by a CCO would apply to growth capital and would also be passed on to developers as lower infrastructure growth charges. These form part of the savings to customers in the Savings to Customers subsection above. This should be at least 4.25% per annum. As the CCO would not be a council itself it would charge infrastructure growth charges instead of development contributions.

Implementation Costs

The establishment and transition costs of forming a CCO includes the costs of set up and transitioning staff and overheads from the councils to the new entity. This is estimated at $10.3m, spread over a 5 year period from the date a decision to proceed is made. The significant costs include the set up of a new office, establishment and migration of IT systems and records, potential recruitment and redundancy costs and legal costs and are shown in the table below:

Confidential

Transition and Establishment Costs 3 Waters	$m
IT	3.0
Recruitment and Redundancy	1.5
Office	1.2
Legal	0.8
Communications	0.6
Branding/Signage	0.5
HR	0.3
Relocation	0.2
Governance	0.2
Other Costs	0.8
Contingency (15%)	1.3
Total Costs	**10.3**

The IT establishment costs are a high-level estimate to include the cost of networking and hardware for the new organisation, software licences, integration and migration costs. The key IT systems include an asset management system with GIS capability, an accounting and billing system, plant operating systems (SCADA), customer management systems and general office systems. There may be a number of IT solutions for the new CCO from migration to one of the existing council systems in each area to in time, a comprehensive enterprise system. This will be for the new board and management team to determine and we would recommend a detailed IT Strategic review form part of the implementation programme.

The recruitment and redundancy provision is for the direct staffing reduction within the CCO and any overhead staff made redundant within the councils. It is likely that most reductions will be achieved through normal staff turnover. Given the significant demand for people with skills in water infrastructure, and given natural attrition rates, very, few if any, compulsory redundancies are anticipated.

The new office fit out assumes an 1,800m^2 building to house between 120-130 staff at an average cost of $600m^2 per metre. Note that some staff will be based away from the main office.

Transition and establishment costs will be incurred both at a council level and directly by the CCO. The above costs include all of these and any arrangement can allow for individual councils to be reimbursed by the CCO for any establishment costs. In terms of timing we have estimated 37% over the next 2 years, 31% in year 1 of the CCO, 18% in year 2 and 14% in year 3. In the case of Manukau Water, three years were necessary to fully transition all costs of the new business.

Under the ESS model we have assumed establishment costs of $1.0m, largely to cover IT, some redundancy, legal and development of SLA's. This would all occur in the first year of the ESS.

Costs to date in investigating new models around water delivery have not been included in the analysis as these are sunk costs and have been incurred, whatever the outcome. However there could still be provision under any new agreement for each council to be reimbursed for costs incurred to date.

Director / Advisor Fees

A new asset owning water CCO would require its own governance structures including a Board of Professional Directors. We have included an annual cost of $355k per annum. This represents 6 directors

at $45k per annum and 1 chair at $85k per annum. This has been benchmarked against comparable organisations.

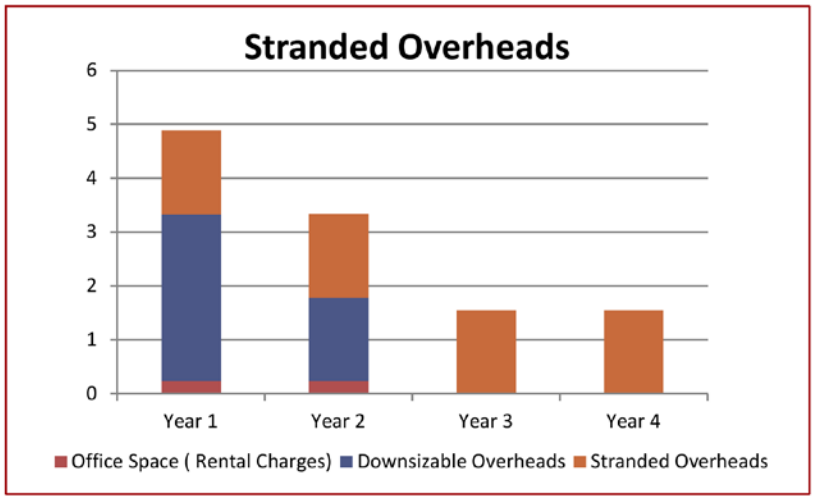
Under the ESS we have assumed a small independent advisory board of four members at a total cost of $200k per annum.

On going council monitoring costs

Councils will incur some incremental staff costs to monitor the CCO performance. We have assumed a total of $600k per annum across the three councils. This would be charged back to the CCO on an annual basis.

Stranded Costs

If a CCO is formed than the individual councils will be able to reduce a component of their corporate overheads currently servicing the water activities. However not all overheads that are currently charged to water activities will be able to be reduced, even in the long run. For example, the governance structures of the three councils are unlikely to change significantly if a Water CCO is formed.



We have assumed that the current office space taken by the water businesses in the respective councils will be sub-let after a period of two years from commencement of the CCO. Until then the space will be charged to the CCO. Of the balance we have assumed that 25% will remain as stranded cost for the first five years of operation and then reduce down to 20% thereafter. This amounts to approximately $1.6m per annum reducing to $1.4m per annum. The balance of overheads is charged at 2/3rd in year 1 and 1/3rd in year 2 and zero in year 3 of the CCO. This would provide time for the councils to reorganise and resize their corporate activities. We have assumed that the CCO will reimburse the Councils in cash for the stranded overhead throughout the 28 year forecast period.

There are no expected stranded costs under an ESS model.

4.5 Other Key Financial Comparisons of Options

The following table lists other key financial comparisons between options.

Confidential

Other Key Financial Comparisons	Status Quo $m	CCO Base $m	CCO Positive $m	ESS $m
Present Value of Savings against the SQ (Net Operating and Capital Expenditure)		91	142	35
Present Value of Revenue Savings against the SQ Annual Revenue Growth Rate	3.1%	142 2.3%	183 2.2%	35 3.0%
Peak Debt Max Gearing % (debt / Equity) – First 10 years	304 22%	393 30%	381 29%	304 22%

The present value of net operating and capital expenditure savings generated by a CCO for three waters are in the range of $91m and $142m, using a discount rate of 8%, over the 28 year period. The PV of the ESS is $35m.

This represents the annual net savings, in notional dollars, discounted at a rate of 8% p.a. This takes into account the costs of establishing the CCO or ESS, the annual operating and capital expenditure savings over the next 28 years and any stranded costs left with councils. The current Treasury discount rate for infrastructure projects is 7% real. Water is inherently low risk and in our opinion a notional discount rate of 8% is appropriate.

The present value of revenue savings for customers ranges between $142m (base) and $183m (positive) for the CCO compared to the Status Quo and $35m for the ESS. Annual growth in revenues or charges over the 28 years under a CCO would range between 2.2% and 2.3% compared to 3.1% under the Status Quo.

Net operating costs savings, after establishment, stranded costs and ongoing monitoring costs, are expected to range between $22m and $36m over the first ten years under a CCO model compared to the Status Quo and between $153m and $213m over the 28 years. This compares to the ESS model of $14m over ten years and $61m over 28 years.

Capital Expenditure savings are expected to range between $41m and $68m over the first ten years under a CCO model compared to the Status Quo and between $151m and $235m over the 28 years. This compares to the ESS model of $11m over ten years and $34m over 28 years.

Peak Debt under the CCO is estimated to reach $393m or a 30% debt/equity ratio over the first ten years compared to $304m or a 22% debt/equity ratio under the Status Quo. A level of 30% debt / equity is considered to be relatively prudent for a water business.

4.6 Impact on Council Financial Position

The following tables look at the impact that a potential CCO will have on the financial statements of the three councils and their key financial ratios at. This analysis compares the end of the first year of a CCO and at the end of the LTP period.

Hamilton City will own more than 50% of the CCO and accounting rules dictate that it must consolidate the CCO financial statements into its group accounts.

Confidential

Impact on Key Financial Ratios – At end of year 1	Status Quo at 2017/18			Under CCO at 2017/18			
	Hamilton	Waikato	Waipa	Hamilton Parent	Hamilton Group	Waikato	Waipa
Debt / Revenue	196%	94%	48%	194%	222%	50%	45%
Interest Cover	3.7	9.1	17.0	2.9	3.1	20.6	11.8
Gearing	13%	6%	3%	11%	14%	3%	2%

Impact on Key Financial Ratios – At end of LTP period	Status Quo at 2024/25			Under CCO at 2024/25			
	Hamilton	Waikato	Waipa	Hamilton Parent	Hamilton Group	Waikato	Waipa
Debt / Revenue	167%	79%	66%	153%	205%	46%	31%
Interest Cover	4.6	9.6	13.1	4.1	3.8	22.7	15.4
Gearing	11%	5%	4%	10%	14%	3%	2%

HCC

Hamilton's key debt / revenue ratio increases at a Group level under the CCO model at the end of the first financial year from 196% to 222%. Interest cover reduces from 3.7 to 3.1 and gearing increases slightly from 13% to 14%. At a parent level the key ratios with the exception of interest cover improve.

At the end of the LTP period in 2024/25 Hamilton's Group Debt / Revenue ratio under the Status Quo is planned to be 167% and at a group level under the CCO option would increase to 205%. Interest cover is 3.8 under a CCO compared to 4.6 under the Status Quo and gearing increases slightly from 11% under the Status quo to 14% under the CCO. At a parent level all key ratios improve under the CCO option.

The debt / revenue ratio exceeds council policy of 200%, but is within local government guidelines of 250%. It should be noted that the additional consolidated CCO debt is not a direct charge on HCC, but really represents a contingent liability shared with other councils. If additional councils were to join the CCO and reduce HCC ownership to below 50% they would no longer need to consolidate the CCO into the Group accounts.

The following table shows the forecast movement of the debt / revenue ratio from the start of the CCO to the end of the LTP period.

Confidential

Year to 30 June Debt / Revenue Ratio	Status Quo	Parent	Group
2017/18	196%	194%	222%
2018/19	194%	190%	231%
2019/20	190%	179%	224%
2020/21	186%	174%	223%
2021/22	183%	162%	215%
2022/23	183%	156%	203%
2023/24	178%	163%	210%
2024/25	167%	153%	205%

On an equity accounting basis HCC's debt / revenue ratio would be the same as parent ratios above.

WDC

WDC's debt/revenue, interest cover and gearing all improve under the CCO model after the first year and improve even more at the end of the LTP period. At 2024/25 under a CCO the debt / revenue ratio is 46% compared to the SQ of 79%, interest cover is 22.7 under the CCO compared to SQ of 9.6 and gearing is 3% compared to 5% under the SQ.

WPDC

WPDC's debt / revenue ratio and gearing improve slightly at the end of the first year under a CCO, although interest cover, whilst still very high, drops from 17.0 to 11.8. At 2024/25 under a CCO the debt / revenue ratio is 31% compared to the SQ of 66%, interest cover is 15.4 under the CCO compared to SQ of 13.1 and gearing is 2% compared to 4% under the SQ.

A CCO structure would give both WDC and WPDC increased financial flexibility to finance remaining core activities. In addition all three councils will benefit from the water activities being managed by a separate entity as it will enable them to focus more on their remaining core activities.

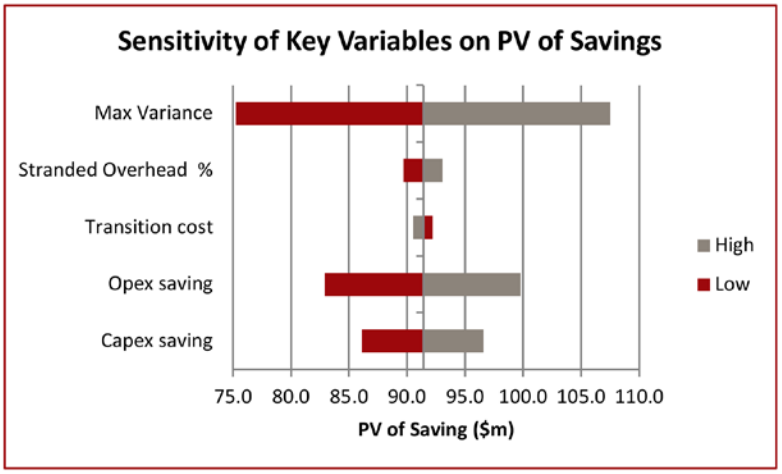
4.7 Taxation

Under the current Status Quo, the councils are exempt from income tax. It is important to ensure that any new CCO structure has minimal taxation implications. Based on specialist tax advice from the Tax Team, the overall conclusion is that, provided the establishment and ongoing operation of the CCO is managed appropriately, there are unlikely to be significant, if any, adverse tax consequences. The TaxTeam's detailed advice is attached as Appendix 6.

4.8 Sensitivity Analysis

The following chart shows the sensitivity to the key drivers of savings between the CCO and the Status Quo. The table shows the impact of a 10% increase / decrease in the key drivers of change.

Confidential



This financial analysis demonstrates that the PV of savings is most sensitive to the level of operating and capital expenditure savings achieved. A 10% movement in operating savings achieved will change the PV of savings by 9.2% and a 10% movement in Capex will change the PV of savings by 5.7%.

It is less sensitive to changes in establishment and transition costs and changes to the level of stranded overheads. A 10% change in transition costs will move the PV of savings by 0.9% and a 10% change in the level of stranded overhead will have a 1.8% impact on the PV of savings. The combined 10% movement of the above key drivers would move the PV by 17.6% or $16.1m.

Customer savings are also influenced by changes in interest rates and if the CCO had to pay more for debt than the councils it will reduce savings to customers. A differential of 10 basis points would reduce revenue savings from $96m to $90m over the first ten years.

The impact of changes in the Council capital expenditure forecasts for years 11-30 is moderately sensitive. A 10% movement changes the PV of savings by 2.5%. If council operating and capital expenditure levels are higher in years 11-28 then the PV of savings under a CCO will increase.

A pessimistic CCO scenario was also run with the following savings assumptions:

- Direct Staff Savings reduced for 18% to 16%
- Other Operating cost savings reduced from 5% to 2.0%
- Overhead savings reduced from 15% to 10%
- This had the impact of reducing net operating savings from $5.3m per annum (11.2%) to $4.1m per annum (8.6%)
- Capital expenditure savings were reduced from an average of 5.7% to 3.0%.

The net impact of these changes was to reduce the PV of savings from $91m to $34m.

As a break even analysis (i.e. for the PV of savings to be $0m) operating and capital expenditure savings would need to fall to a 1/3rd of the Base Case assumptions, operating savings would need to fall from 11.2% to 3.7% and capital expenditure savings would need to fall from 5.7% to 2.0%.

In our view the Base Case assumptions are realistically conservative and achievable. The above break even analysis is to demonstrate the level of savings erosion that would be required to make the change to a CCO no better than the Status Quo from a financial point of view.

Confidential

5. MANAGEMENT CASE

Summary:

- A comprehensive implementation plan will be critical to ensuring the CCO is properly established and can quickly and effectively commence operations.
- An important part of the implementation plan will be establishing a strong and cohesive change management programme. This includes effective stakeholder and community consultation
- Establishing a Water CCO is a major transformational programme of work. This will include developing a strong governance framework; identification and measurement of benefit realisation and implementation of risk management procedures and plan.

5.1 Introduction

The purpose of the management case is to describe how a CCO will be implemented, how the risks of implementation are managed and what constitutes success.

A comprehensive implementation plan will be critical to ensuring the CCO is properly established and can quickly and effectively commence operations. An important part of the implementation plan will be establishing a strong and cohesive change management programme.

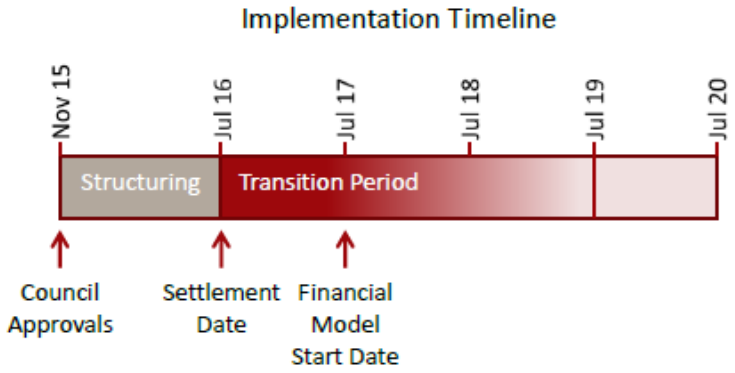
Establishing a Water CCO is a major transformational programme of work and the councils and key stakeholders need assurance regarding the achievability of the CCO. To this end, the Management Case:

- provides a high-level overview of the roadmap for getting to the desired future state and the approach to moving from the current to the future state;
- describes the governance and management arrangements established for the establishment of the CCO;
- outlines the various measures that are, or will be, in place to provide quality assurance over the project;
- outlines key risks and the approach to their management; and
- outlines the approach to benefits realisation.

5.2 Timeline

Assuming that the councils decided to proceed with the CCO option in late 2015 it should be possible with good planning and project management to have documentation ready for signing and settlement by 1 July 2016. It is expected that a transition period of up to three years will be required to implement all systems and transfer all activities from councils. In practice it may be considerably less than this, but a conservative approach has been taken. Likewise to be conservative the financial model assumes that the CCO does not actually start trading until 1 July 2017 as most activities may still be operated by the councils under MSAs for much of the first year.

Confidential



Key steps are as follows:

- June 2015 – Council approvals and allocation of a consultation budget.
- July – Oct 2015 – Community / Stakeholder Consultation. In addition some very high level preparatory planning could be undertaken to help inform council decision making. E.g. Map out broad implementation plan and identify key suppliers including legal, project management, IT Strategy etc.
- Late 2015 – Councils approve CCO
- Late 2015 – Establish and appoint Project Governance Group (PGG), Project Management Group and a Project Manager. Their role will be to oversee the development of a detailed implementation plan and the migration of the Councils' water businesses into a CCO. This is expected to take up to 18 months.
- Jan – June 2016 – Develop detailed implementation plan including Operations, Assets, HR, IT, Finance and Accounting, Premises, Communications and Stakeholder Engagement.
- January – June 2016
    - Detailed Asset Valuations undertaken by an agreed engineering group on a consistent basis
    - Obtain necessary Audit NZ approvals
    - Development off Key documents including:
        - Initial Statement of Intent
        - Constitution – Governance
        - Management Service Agreements with councils for continuation of services
    - Development of initial annual budget, financial plan and cash flow forecast
    - Establishment of banking arrangements
    - Preparation of legal documents
- 1 July 2016 – Settlement date and asset transfer
- 1 July 2016 – 30th June 2017 – Operational implementation commences including the following key work streams

Confidential

- Board of Directors identified, interviewed and recruited
- Initial Operational Policies and Procedures developed
- IT evaluation and Strategy including implementation plan and migration of key data to single operating systems
- Key Staffing arrangements – organisational structure and key roles identified, staff transferred from councils in stages as functions are devolved to CCO
- Offices secured and fit out completed
- Establishment of Risk Management Register

- 1st July 2017 – CCO Starts Operations date – (may be earlier if possible but ideally fits in with the financial year end of Councils)
- Transition period – 3 years – Appointment of Transition Manager
- Post Project Evaluation – recommend annual review over first 4 years of establishment against a framework of key deliverables including operational KPIs and projected savings.

5.3 Project Governance

Recommend high level arrangements continue with Project Governance Group, Project Management Group plus a Project Manager to assist Governance transition to new board at an appropriate stage.

5.4 Benefits realisation

An assessment of the anticipated benefits is essential to maintain the focus of the CCO and to ensure objectives are realised. Key elements of the framework include:

- Development of a benefits map showing how benefits relate to each other and to project outputs and business changes that will enable them to be achieved;
- A set of benefit profiles that define the attributes, dependencies and current/target values for all benefits;
- A benefits realisation plan which schedules benefits measurement activities and benefits reviews to enable tracking of the realisation of benefits from the CCO;
- Benefits reviews that will involve relevant stakeholders to establish the extent to which benefits have been realised; and
- Establishing the Transition Manager's responsibilities to identify and quantify benefits and to ensure that transition plans are designed and executed so that the enabling capability and culture is properly embedded into business operations.

5.5 Benefits measures

A preliminary assessment of the goals and investment objectives points to five categories of benefit from forming a CCO:

- Lower customer pricing
- Improved compliance
- Meet or exceed capex plan timing
- Exploitation of sub-regional synergies
- Reduced opex and capex costs

Specific key performance measures will need to be developed addressing these benefits and be included in the CCO's Statement of Intent.

5.6 Risk Management

Development of a comprehensive risk register should be developed to ensure that key adverse events do not occur during the critical transitional years of the CCO. Risks include:

- Operational Risks – Security and resilience of supply, water contamination etc.
- Health and Safety
- HR / Staff Matters
- Iwi Relationships
- Financial
- Legal
- Key Supplier / Contractor relations
- Customer Pricing and Billing

5.7 Post-Project Evaluation Planning

Reviews should be conducted on an annual basis to ensure the CCO is achieving targeted benefits while fulfilling its objectives outlined in the Statement of Intent. These reviews will be undertaken by the Establishment Committee.

5.8 Council Benefits Realisation

For the total success of the project each council will need to put in place similar project management disciplines to ensure that the planned benefits for each council in terms of overhead reduction are realised.

Confidential

APPENDIX 1: PROJECT SCOPE

Project Scope as detailed in the Request for Proposal dated 13 August 2014.

APPENDIX ONE: BUSINESS REQUIREMENTS

1. OUTPUTS OF A DETAILED BUSINESS CASE

The precise scope of the analysis will be finalised with the consultant but, as a minimum, the project will deliver the following key outcomes.

- The shape and scale of an asset-owning CCO (as recommended in the Stage 2 report) will be understood in detail, including: governance & shareholding arrangements; how differing levels of debt across the three councils are managed; financial & funding arrangements; organisation structure and service delivery model. (Comments on the advantages/disadvantages of this model over a non-asset owning structure should also be included.)
- The Report will need to consider the different standards and scale of network across the three communities; different levels of service; forecast capital works; the risk and debt profiles of each council and the operational implications of merging the networks.
- The advantages and disadvantages of an enhanced shared services[1] model will be understood. The intent here is to look at the viability of adding additional services without going as far as a CCO structure. For example a wider range of back-office services or the joint delivery of physical works using a joint committee between the councils.
- The Report will confirm what changes each council will need to make (resourcing for example) to comfortably deliver their respective LTP programme of work, in the event that no change is made. It will be important to ensure that consistent assumptions are used across the three councils.[2] This represents the 'control' option.
- Determine whether Stormwater services are appropriately delivered via any/all of the options being considered or whether it is better left with the parent councils. The implications for Stormwater under each option should be identified.
- The establishment and transitional costs of each option will be estimated and the transition process will be well understood.
- The strategic, organisational, financial and other implications of options for each council will be understood - including risks and benefits and the implications for local decision-making.

The bullet points above are referred to later in this document as the 'core work'. In addition to the core work, one further option will be examined.

- Waikato District Council wishes to explore the option of expanding current arrangements with Watercare Services Ltd to include the management of the waters network across the district via an alternative delivery arrangement. This will include understanding the costs and benefits of a joint CCO, an enhanced shared services arrangement or a simple 'contract to run' approach. (See more detailed information in Section 5 below.)

The detailed business case analysis will follow the NZ Treasury 'Better Business Case' model and the essential outcome will be the provision of substantive information sufficient for each council, and the residents and ratepayers of each council, to make an informed decision on the preferred long-term model of Waters delivery.

[1] Presently, the three councils have a joint office providing water conservation, water quality testing and trade waste services.
[2] Draft 2015-25 LTP figures will be used as the benchmark for this analysis and the draft 30-year strategies will also be used as a reference point.

Confidential

The business case will result in a firm and clear recommendation on whether a CCO, an enhanced shared service structure or status quo will deliver the best long-term outcome for the region. And in the case of Waikato, the recommendation will take into account the Watercare option.

Note 1: There is no preference for any option at the moment. All are to be considered equally.

Note 2: The report must clearly show the full implications of each option for each council.

Note 3: It is expected that the work will be sufficiently comprehensive that no further work will be required for the councils to make a decision.

Note 4: Because of the complexity of this project, independent peer review will be undertaken at appropriate project milestones.

Confidential

APPENDIX 2: BIBLIOGRAPHY

Set out below are the key reports that form the background to this Review:

- A Strategic Review of Opportunities Arising From 'Shared Services' Relating to the Water and Wastewater Activities of Territorial Authorities in the Waikato Region, Participate Ltd et al, November 2012
- Waikato Sub Region – 3 Waters Shared Services High Level Assessment, PwC, March 2013.
- Waikato Water, A Report to The Waikato Mayoral Forum on Future Delivery Options, Participate Ltd et al, April 2014.
- Reflections from our audits: Our future needs – is the public sector ready? Auditor-General, May 2014.
- LGNZ Three Waters Project: Presentation to NZCID Symposium, Malcolm Alexander, Chief Executive, August 2014.
- *National Performance Report – Urban Water Utilities,* Australian National Water Commission: 2012-13 www.nwc.gov.au
- Ofwat Cost of Capital for PR14: Methodological Considerations, PwC, July 2013
- Business Case Analysis for Water Services - Engineering Assessment and Evaluation- Mott MacDonald April 2015

Confidential

APPENDIX 3: BUSINESS CASE WORKSHOPS

The following workshops were held in 2015 as part of undertaking the Business Case:

Workshop	Principal Activities	Desired Outputs	Participants	Date	Duration (hours)
Decision Support	Confirm the strategic case, identify option evaluation criteria and confirm short listed options.	Determine the strategic case, evaluation criteria and weightings and shortlist options.	Project Governance & Management Groups	Thursday 22 January	7
Organisation Design	High level design of shared services and CCO management and organisational structures	High level management and organisational structures	Project Management Group & Council Lead Engineers	Monday 2 February	6.5
Governance	Shareholdings, appointment of directors, monitoring mechanisms, statement of intent, voting arrangements	Governance and shareholding structure, essential SOI terms, indicative council monitoring arrangements	Project Governance & Management Groups	Thursday 5 February	7
Risk Evaluation	Identification and evaluation of risks	Risk matrix with key risks identified and initial probabilities assigned	Council engineering and finance officials	Friday 13 February	4
Capital Structure	CCO capital and funding structures	Clear view on an efficient capital and funding structure including debt levels	Council CFOs and finance officials	Friday 27 February	4
Option Selection	Identification of preferred option	Preferred option	Project Governance & Management Groups	Thursday 2 April	7

Confidential

APPENDIX 4: COUNCIL ORGANISATIONS AND SOI

Council Organisation Definition

Council Organisations (COs) are organisations where a Council or Councils have some right of ownership or appointment for the organisation. A Council Organisation can also be a Council Controlled Organisation (CCO) or a Council Controlled Trading Organisation (CCTO). The distinction between these types of Council Organisation is further defined below and is important because it can have implications for such concerns as taxation, Council funding and control over decision making. The establishment of a CO requires public consultation, so it is important that Councils determine whether the organisation will be a CO or not prior to setting it up.

Under s.6 (1) of the New Zealand Local Government Act 2002 (Act), a CCO is defined as:

(a) a company—

(i) in which equity securities carrying 50% or more of the voting rights at a meeting of the shareholders of the company are—

(A) held by 1 or more local authorities; or

(B) controlled, directly or indirectly, by 1 or more local authorities; or

(ii) in which 1 or more local authorities have the right, directly or indirectly, to appoint 50% or more of the directors of the company; or

(b) (b) an entity in respect of which 1 or more local authorities have, whether or not jointly with other local authorities or persons,—

(I) control, directly or indirectly, of 50% or more of the votes at any meeting of the members or controlling body of the entity; or

(II) the right, directly or indirectly, to appoint 50% or more of the trustees, directors, or managers (however described) of the entity.

The Act provides for three types of CCO's:

- A 'company' – under section 6(1), without any profit making requirements
- A 'council-controlled trading organisation' – which is a CCO that 'operates a trading undertaking for the purpose of making a profit' ('CCTO') – this option is excluded, or
- An 'entity' which could take the form of 'any partnership, trust, arrangement for the sharing of profits, union of interest, co-operation, joint venture, or other similar arrangement; but does not include a company, or a committee or joint committee of a local authority'
- Under the Act, a CCO must adopt a Statement of Intent, which meets the following requirements:
- state publicly the activities and intentions of a council-controlled organisation for the year and the objectives to which those activities will contribute; and
- provide an opportunity for shareholders to influence the direction of the organisation; and
- provide a basis for the accountability of the directors to their shareholders for the performance of the organisation.

Statement of Intent

The Statement of Intent must include content prescribed by sections 9 and 10 of Schedule 8 of New Zealand Local Government Act 2002.

(a) the objectives of the group; and

(b) a statement of the board's approach to governance of the group; and

(c) the nature and scope of the activities to be undertaken by the group; and

(d) the ratio of consolidated shareholders' funds to total assets, and the definitions of those terms; and

(e) the accounting policies of the group; and

(f) the performance targets and other measures by which the performance of the group may be judged in relation to its objectives; and

(g) an estimate of the amount or proportion of accumulated profits and capital reserves that is intended to be distributed to the shareholders; and

(h) the kind of information to be provided to the shareholders by the group during the course of those financial years, including the information to be included in each half-yearly report (and, in particular, what prospective financial information is required and how it is to be presented); and

(i) the procedures to be followed before any member or the group subscribes for, purchases, or otherwise acquires shares in any company or other organisation; and

(j) any activities for which the board seeks compensation from any local authority (whether or not the local authority has agreed to provide the compensation); and

(k) the board's estimate of the commercial value of the shareholders' investment in the group and the manner in which, and the times at which, that value is to be reassessed; and

(l) any other matters that are agreed by the shareholders and the board.

(m) [s4 Schedule 10 of the Act] include a statement of the intended levels of service provision that specifies—

(i) any performance measures specified in a rule made under section 261B for a group of activities described in clause 2(2); and

(ii) the performance measures that the local authority considers will enable the public to assess the level of service for major aspects of groups of activities for which performance measures have not been specified under paragraph (a); and

(iii) the performance target or targets set by the local authority for each performance measure; and

(iv) any intended changes to the level of service that was provided in the year before the first year covered by the plan and the reasons for the changes; and

(v) the reason for any material change to the cost of a service.

Confidential

APPENDIX 5: OPTION ASSESSMENT

Option assessment against objectives

Objective	Status Quo	Enhanced Shared Services	Council Controlled Organisation
Effectiveness (strong focus on water customers and their needs) Weight = 25%	Score: 3/5 Reasons: - Council water businesses have control of own assets, but compete with other council priorities	Score: 2/5 Reasons: - Asset/network planning and management functions undertaken by the ESS (with sub-region drivers) but underlying assets owned by Councils (with Council-specific drivers). Inherent tension between the two sets of drivers which is likely to create risk of an unstable relationship between the ESS and Councils and risk of losing customer focus as a consequence (so worse situation than under the status quo)	Score: 4/5 Reasons: - Sole focus on water and needs of water customers - Business specific objectives rather than multi-faceted political objectives - Direct (contractual) relationship with customers established - Focus on customers; not a combination of customers and ratepayers - Not competing against other Council priorities and issues
Efficiency (improved cost effectiveness) Weight = 15%	Score: 3/5 Reasons: - Base level of efficiency achieved	Score: 3/5 Reasons: - Economies of scale across functions that are part of shared services (e.g. joint contracts for provision of services, stronger buying power, less duplication of systems, more efficient use of scarce specialist capabilities) - Some gains from joined up asset and growth planning and demand management (but limited because of separation from asset ownership) - Draw on experience of advisory board of experts - However, gains offset by higher transaction costs involved in ESS having to coordinate with three sets of councils	Score: 4/5 Reasons: - Economies of scale from combining like-with-like functions - Sub-regional approach to asset, network and demand management and planning and full control over underlying assets - More financial flexibility - important for timing of major capital investments - More effective governance - More independence from direct political intervention - Greater ability to attract and retain

Confidential

Objective	Status Quo	Enhanced Shared Services	Council Controlled Organisation
			expertise and specialist skills - Creation of centre of excellence - Efficiencies through aligning systems and processes to the specific needs of the business (rather than three separate councils) - From Councils' perspectives, divesting direct responsibility for managing the water system allows them to focus on other roles including strategy, policy and regulatory functions
Improved financial sustainability (costs lower than the LTP) Weight = 20%	Score: 3/5 NA. Base case benchmark	Score: 3.5/5 Reasons: - Some cost savings - $93m over 30 years	Score: 4/5 Reasons: - Major cost savings – up to $483m over 30 years - Ability to raise debt which helps to smooth impact of major investments - Enables modest improvement in councils' debt/revenue ratios
Alignment (regulatory compliance, meet customer expectations, manage and influence regulatory outcomes) Weight = 10%	Score: 2/5 Reasons: - Some areas of non-compliance now - No direct relationship with customers - Customer needs compete against other Council priorities	Score: 3/5 Reasons: - Greater consistency of systems and processes across some, but not all functions, helps to achieve compliance - No direct relationship with customers - Customer needs compete against other Council priorities	Score: 4/5 Reasons: - Director liability creates very strong incentives to ensure regulatory compliance - Direct relationship with customers - Focus on customers and not subject to competing Council priorities

Confidential

Objective	Status Quo	Enhanced Shared Services	Council Controlled Organisation
Reducing risk (resilient organisation) Weight = 10%	Score: 3/5 Reasons: - Need for major capital investments but questions over ability to fund - Issues with asset condition in some areas	Score: 2/5 Reasons: - More joined up planning helps to reduce infrastructure risk but ability to match demand and supply still subject to Council priorities re funding and capital investment for water versus other priorities - Reduced human capital and technical risk through pooling of resources and more consistency of systems and processes - Doesn't address financial risk (no balance sheet to raise funds) - Longer term resilience depends on ability to keep the collaborative ESS model functioning. Inherent tensions in this regard threaten the sustainability of this model. Accordingly, from a risk perspective this option does not rate more highly than the status quo	Score: 4/5 Reasons: - Stronger focus on risk management at governance level (subject to getting the right directors) - Lower infrastructure risk through joined up planning coupled with asset ownership - Reduced human capital and technical risk through pooling of resources and more consistency of systems and processes - Less risk of activity being diminished or not prioritised because of competing Council priorities - In theory, councils not exposed to financial risk beyond the value of their investment - More security of supply if networks managed on an integrated basis
Customer voice/focus Weight = 20%	Score: 3.5/5 Reasons: - Direct access to councillors - Local council oversight	Score: 3.5/5 Reasons: - Direct access to councillors - Local council oversight	Score: 4/5 Reasons: - Focus on customers, not customers and ratepayers - Corporate social responsibility/good citizen requirements - Greater transparency through process for developing customer charter - Council monitoring oversight

Confidential

Option assessment against CSFs

Critical Success Factor	Status Quo	Enhanced Shared Services	Council Controlled Organisation
Strategic fit (customer focus, support 3 waters strategy (3WS), meet future growth) Weight = 25%	Score: 3/5 Reasons: - Base level contribution	Score: 3.5/5 Reasons: - Unlikely to lead to stronger customer focus - Unlikely to make material difference to meeting future growth because no change in financing arrangements and asset ownership and decisions ultimately still with Councils - Some contribution to 3WS objectives; implement shared services, more integrated functions including management of networks	Score: 4.5/5 Reasons: - Much stronger contribution to 3WS especially in terms of integration of functions, efficient and sustainable infrastructure, meeting growth, adoption of best practices - Much stronger customer focus
Value for Money (delivers value over long term, benefits for sub-region, reduces risk) Weight = 17%	Score: 2/5 Reasons: - Ability to deliver VfM over the long term at risk because of funding constraints and competing demands on Councils' resources - Duplication of processes, systems etc. across Councils - Diseconomies reflecting small scale of the Councils - Council rather than sub-region focus	Score: 2.5/5 Reasons: - Ability to deliver VfM over the long term at risk because of funding constraints and competing demands on Councils' resources - Some economies achieved through combining functions - Sub-region approach to some functions, but ultimately decision making is still Council focused rather than sub-region	Score: 4/5 Reasons: - Significantly more efficient option (cost savings 3-5 times more than ESS option) - Stronger customer and sub-region focus - Stronger incentives for innovation and continuous improvement - 3 water activities are stronger collectively than they are separately in financial, technical and organisational terms - Greater financial ability to fund capital investment and meet future demand (not constrained by competing demand on councils) - More security of supply if networks

Confidential

Critical Success Factor	Status Quo	Enhanced Shared Services	Council Controlled Organisation
			managed on an integrated basis
Affordable Weight = 20%	Score: 3/5 Reasons: Customers and councils can afford to fund operations and investments, but at a reasonably high price levels	Score: 3.5/5 Reasons: - Modest cost savings	Score: 4.5/5 Reasons: - Significant cost savings - Ability to raise debt to smooth spikes caused by large capital investment - But up-front establishment costs
Achievable (community support, deals with stranded overheads, retention of high quality staff) Weight = 23%	Score: 3/5 Reasons: - Doesn't align well with Waikato Mayoral Forum's strong commitment to working collaboratively (existing shared services very limited in scope) or with 3WS or with Local Government Infrastructure Efficiency Expert Advisory Group recommendation for regionalisation of water - Legislative encouragement for councils to cooperate and collaborate - Unlikely to be strong public opposition (but some may voice concern about lack of change)	Score: 3/5 Reasons: - Partial alignment with commitment to collaboration - Enhance ability to attract and retain high quality staff in areas where functions are combined - No stranded overheads - Unlikely to be public opposition (ESS option flies below the radar)	Score: 4/5 Reasons: - Full alignment with commitment to collaboration - Loss of sense of local ownership - Some stranded overheads - More likely to spur opposition based on concerns around privatisation (not on the table) and metering (this is a decision separate to that or organisational design)
Regulatory compliance Weight = 25%	Score: 2.5/5 Reasons: - Not currently meeting all regulatory requirements	Score: 3/5 Reasons: - Greater consistency of systems and processes across some, but not all, 3 waters functions will contribute to higher levels of compliance	Score: 4/5 Reasons: - Director liability creates very strong incentives to ensure regulatory compliance - Consistency of systems and processes across all aspects of 3

Confidential

Critical Success Factor	Status Quo	Enhanced Shared Services	Council Controlled Organisation
			waters functions will maximise ability to achieve full compliance

Confidential

APPENDIX 6: TAX ADVICE

TaxTeam

Appendix

Proposed Waikato Water Services CCO

Tax implications report – April 2015

Executive Summary

This report provides a high-level discussion on the potential tax implications of establishing the proposed Waikato Water Services Council Controlled Organisation ("CCO").

The discussion largely focusses on the income tax implications that ensue from establishing a company or limited partnership, given that:

- Retaining the status quo or establishing an unincorporated joint venture will have relatively minor consequences; and
- Previous studies have indicated that the Waikato Water Services CCO is most likely to be established as either a company or limited partnership.

It is intended that the delivery of water services through the CCO will come at no additional cost to ratepayers with any surplus derived being used to assist with the ongoing financing of operating costs and meet capital infrastructure maintenance and expansion plans. Importantly:

- Establishment of the CCO should have no income tax implications for any of the councils involved provided the transfer of assets and liabilities is managed appropriately;
- Once established, the CCO will be subject to income tax on any taxable profits arising;
- There are a range of factors that will determine whether the CCO has a taxable profit in any particular year of operation, such as the level of debt held, tax depreciation available and the capital asset maintenance and expansion plans;
- Tax losses arising in any year of operation should be available to carry forward and offset against taxable profits of subsequent years, subject to the continuity rules and commonality rules being met.
- A company or limited partnership can facilitate the entry of new, or exit of existing, councils; and
- There are a range of other taxes to be considered as part of the establishment and ongoing operation of the CCO, such as GST, PAYE, FBT and withholding taxes. These should not create any additional cost than if the current status quo were retained.

Our overall conclusion is that, provided the establishment and ongoing operation of the Waikato Water Services CCO is managed appropriately, there are unlikely to be significant, if any, adverse tax consequences.

Confidential

Introduction

As with any major transaction, the potential tax implications of the proposed Waikato Water Services CCO need to be considered. Equally, whilst it is important that tax considerations are factored into decision-making alongside the economic, financial and environmental considerations, tax should not be the determining factor of whether to proceed with the proposed Waikato Water Services CCO.

At this juncture, it is also important to note that:

- This advice is, necessarily, high-level indicative advice on the potential options being considered to assist in the economic and financial analysis of a business case for the water services project.
- Tax is very fact specific and the individual steps and components considered as the water services project progresses may have significant ramifications on the tax implications of both the structure chosen and the initial setup implications.

Further, this tax advice is based on the facts presented to us, summarised as follows:

- Hamilton City Council, Waipa District Council, and Waikato District Council ("the Councils") are exploring ways they can work together to deliver water services in their combined geographical area to achieve efficiencies and encourage lower cost water services to ratepayers.
- Based on previous advice, three leading options for delivery of water services have been identified including the possibility of an asset-owning CCO.
- The asset-owning CCO option would potentially acquire the Councils existing water assets, provide water services to customers, charge water customers directly, and manage operation and development of water activities. Initially, some of the day-to-day services may be managed by the Councils on behalf of the new joint services provider.
- A longer term possibility is that other local authorities in the Waikato region may join the water services CCO.

Overview of options for delivery of water services

Based on earlier studies, the potential 'structure' options have been shortlisted. These can be summarised, along with significant potential tax considerations associated with each as follows:

- Retaining the status quo: the Councils would individually continue to provide water services and as they remain within Council, and the Councils are not subject to income tax on this revenue stream, there will be no tax cost.
- Enhanced shared services: expanding existing shared services agreements, potentially through the establishment of an unincorporated joint venture could result in the income received by the Councils being subject to income tax if the unincorporated joint venture were considered to be 'trading'.
- A company: A company will generally be considered to be a business, and therefore a taxable entity. Any taxable profits would be subject to the company tax rate, currently set at 28%, and any distributions from the company to the Councils will be taxable as income from a CCO.
- A limited partnership: A limited partnership enables any taxable profits of the partnership to be allocated to the partners (i.e. the Councils) and subject to tax in the hands of the

partners/Councils. This may allow any participating Council with tax losses to offset these against their share of partnership profit, or vice versa, and can yield greater flexibility over each Councils overall income tax position.

Established tax law principles enable the Councils freedom to choose the most appropriate structure, with no specific restriction on the choice of a tax efficient structure. That said, as the business case for the structure progresses, tax avoidance considerations should be assessed, particularly in relation to funding decisions.

As there are no tax implications for retaining the status quo, and indeed, the tax implications of a unincorporated joint venture are already known to the Councils, the following discussion does not go into detail on these options. Rather the focus is on the implications of establishing a company or limited partnership CCO.

Will the CCO be subject to income tax?

It is intended that the delivery of services will come at no additional cost to the ratepayers when compared with the current cost of services. Therefore, the CCO will be operated with no intention to make a profit. Any surplus is intended to assist with ongoing financing of operating costs, and to cover capital infrastructure maintenance and capital expansion plans.

As a result of the 'cost-recovery' basis including both the self-funding of capital maintenance and anticipated capital expansions, we consider that this is more than a mere break-even motive; particularly as it includes provision for capital expansion. Therefore, it is likely that the proposed CCO will be subject to income tax on the profits derived, subject to the normal tax laws, regardless of the structure chosen for the proposed CCO.

Is the CCO likely to pay income tax?

Whilst we have established that the proposed CCO is likely to be subject to income tax, the final tax calculations of the proposed CCO may be affected by many aspects, such as tax concessions and deductions on certain expenditure and assets. Therefore, we provide comment on the likely tax implications for the proposed CCO through the life of the water services project.

Based on the advice of earlier feasibility studies, should an asset-owning CCO be chosen as the preferred structure, then the two leading entity options for the proposed CCO are:

- A company, or
- A limited partnership.

We will focus on the tax implications of using these two options for the following analysis, as these two structure options may give rise to tax situations of which the Councils have not had prior experience.

ON ESTABLISHMENT

We understand that the Councils intend to transfer the existing water services assets into the proposed CCO to enable the new entity to fulfil its intended service delivery and cost saving mandate.

As the final structure has not yet been decided, we will not elaborate on the detail of the tax considerations of the initial transfer of assets at this juncture. Suffice to say, if managed correctly, the transfer of water services assets from the Councils into the proposed CCO should not have any income tax implications. Specific tax advice prior to any asset transfers being made will be essential though for this to be achieved.

Another aspect of establishing a new business is that tax losses often arise in the first few years of operation, often as a result of the establishment costs of the business set-up, and the mismatch

between the timing of expenditure being incurred and revenue generated. Potential utilisation of tax losses is discussed below.

ON-GOING OPERATIONS

Based on our experience of similar entities delivering water services in the local authority sector, which the proposed CCO is intended to emulate, relatively little, if any, taxable income is likely to arise through day-to-day operations due to:

- **The level of debt held:** Debt servicing costs such as interest expenditure and lending fees can generally be taken as a deduction against taxable income. Any debt servicing costs will reduce the amount of tax payable by the proposed CCO.

- **On-going operating and maintenance costs:** The vast majority of operating expenses will be considered part of the necessary costs of deriving assessable income, and will be permitted as a deduction for determining taxable income. Likewise, many of the maintenance costs will be considered part of keeping the substantial capital assets operational, so will be permitted as a deduction from taxable income. Some of the "maintenance costs" of the proposed CCO will be considered an enhancement or replacement of part of the capital assets themselves. In this instance, the costs may not be immediately available as a deduction, although they can generally be treated the same as capital assets (per below).

- **Capital assets and the on-going water services capital expansion programme**: Tax laws allow for tax depreciation deductions to be taken as a result of expenditure resulting in the creation or improvement of capital assets, with the exception of 'buildings'. This results in further deductions against taxable income, albeit this is spread over a number of years.

  As the water services assets are substantial and will likely have a very high initial cost, this enables significant tax deductions to be obtained over time. Further, the capital expansion ambitions will ensure that these capital asset values remain significant, which should mean substantial ongoing tax depreciation deductions.

- **Tax losses**: The tax and accounting treatment of certain types of expenditure differ. As such it is possible, for example, for an entity to make economic and/or accounting profits, but as a result of the combination of the set-up costs, debt levels, operating and maintenance expenditure, and capital enhancements, for tax there may be a loss. The ability to utilise these tax losses is discussed below.

The combination of these factors, at levels commensurate with those typically seen with other similar water services entities, suggests that the proposed CCO is unlikely to have taxable income, and should this arise, potentially would have tax losses available from earlier years to mitigate the impact.

For completeness, if any Council receives income from a CCO, such as management charges or interest, this is taxable in the hands of Council. Again though, in reality, there is rarely a tax impost due to the offset of other tax losses and deductions a Council typically has.

Tax losses

Where tax losses do arise in the proposed CCO, the ability to obtain a benefit from these tax losses such as through offset against other taxable income will depend on the entity chosen for the proposed CCO. As detailed above, we limit our discussion to the impact of tax losses through either a company, or a limited partnership structure.

If the proposed CCO is established as a company and tax losses arise, these may be utilised in the following ways by the CCO:

- The tax losses may be carried forward to future tax years and offset against taxable profits of the company. This ensures that future income would not be subject to tax up to the level of tax loss suffered by the CCO in the earlier years.

  The ability to offset tax losses in future years is subject to strict conditions (known as the 'continuity' rule) to ensure that the shareholders who suffered the initial tax loss are, to some extent at least, the same shareholders who may benefit from the offset against taxable income in future years. Essentially these continuity rules require overall changes in the shareholding ownership not to exceed 51% of the ownership from when the tax loss was incurred to when the loss offset takes place.

  While such continuity rules would not cause any restriction on the proposed CCO should all of the founding Councils remain as the shareholders of the company without any major changes in the size of each Councils shareholding over time, this may cause an issue in the future should the ownership change through the introduction of other local authorities to the company.

- In limited circumstances tax losses may be offset with other entities within the same ownership 'group', i.e. the Councils as shareholders. This may only occur where one of the shareholders of the company (i.e. one of the Councils) owns 66% or more of the company which has tax losses. This is known as the 'commonality rule'.

  Were this situation to occur, only the shareholder with the 66% or greater ownership may utilise tax losses of the CCO against their other taxable income (such as income from other CCOs, or council controlled trading organisations). This 'group' loss offset may result in an uneven division of the benefits from the CCO's tax losses. However, in some circumstances a special payment may be made (known as a 'subvention payment') by the profit entity to the CCO to provide the effective transfer of tax losses, which would benefit the company and all of the Councils as shareholders.

  We note that, if the circumstances allow, this can sometimes work in reverse also. That is, should the 66% or above ownership test be met by one of the Councils as shareholder, it is also possible for any tax losses of that Council to be utilised by the company, should there be a need to offset taxable income of the company.

For completeness, should the company actually pay tax, a 66% continuity of shareholders is required to allow the benefit of tax credits to be accessed in the future.

Should a **limited partnership** be chosen for the proposed CCO and tax losses arise, the limited partnership is subject to special rules. For tax purposes, the limited partnership is not a taxpayer in itself, rather, all of the taxable profits (or tax losses) are allocated to the partners of the limited partnership based on each partners 'income share'. Those partners then include their 'income share' (which could actually be a tax loss) in their own tax return to calculate and pay any required tax; this is regardless of whether any cash distributions are made from the limited partnership to the partner.

Therefore, where tax losses arise in the limited partnership they may be used in the following ways:

- Offset tax losses with other taxable income, if any, of the Councils. This may occur where a Council has other taxable income such as income from CCOs or council controlled trading organisations.

  The offset of tax losses is limited to what is known as the 'economic loss' that the individual partners have suffered, which generally means to the extent that the partnership is funded by capital. Depending on the final funding options in place for the proposed CCO, and the level of contribution versus third party debt funding, this may or may not be relevant.

- For completeness, the limited partnership also affords the flexibility to utilise tax losses in the reverse situation; that is, where the limited partnership derives taxable income, and the Council to which this taxable income is attributed has tax losses available either:
  - From other CCOs or council controlled trading organisations, or
  - From prior years where tax losses have been carried forward. Such carry forward is not subject to the 'continuity' rules discussed above, so may even include prior year tax losses from the limited partnership itself which have been allocated to, but unused by, the Council.

  In these situations, those tax losses may be offset against the partners share of taxable income of the limited partnership in that year.

In brief, a limited partnership is not bound by the 'continuity' or 'commonality' requirements which a company may be subject to as detailed above.

We note that a limited partnership also requires a 'General Partner', which is often a management type company owned by the partners (the Councils). There are rarely any significant tax issues arising from the existence of a general partner.

IMPACT OF CHANGES IN OWNERSHIP

Depending on the evolution of the delivery of water services in the Waikato region, there could be changes in the ownership of the proposed CCO, i.e. member Councils leaving or joining, or even a potential local authority amalgamation in the Waikato region. It is therefore prudent to consider what this may mean for the proposed CCO.

On-going member Councils

Where the proposed CCO is a company, should the company shareholding composition change, such as through the introduction of new shareholders, which causes a breach in the minimum 49% 'continuity', any existing tax losses of the company would be forfeit and no longer available to the company. Commonality between the company and the shareholders may also be impacted adversely.

Should further local authorities in the Waikato region join the proposed CCO which is a limited partnership, there will be an adjustment to the annual allocation of income share although this is generally without adverse tax ramifications.

Incoming member Councils

Where the proposed CCO is a company, an incoming member Council may be entitled to access prior year tax losses of the company, provided the tax loss 'continuity' requirements have been met at all times since the tax loss was incurred. This would require close examination of the shareholdings at the time a new member entered the water services company, advice would need to be sought at that time.

Alternatively, if the proposed CCO is a limited partnership, there will be no immediate tax implications on the incoming Council. All tax considerations will arise upon the allocation of the taxable income (or tax loss) at the end of the tax year, and would follow the major items detailed above.

Exit

We understand that the water services project is intended as an on-going solution for the foreseeable long-term future. Therefore we have not considered the impact that a potential wind-up of the proposed CCO, or exit of one or more of the Councils, may entail.

Other taxes?

While our advice focuses on the income tax considerations of the proposed CCO, we note that several other tax types will need to be considered and complied with.

GST

Whichever structure is chosen for the proposed CCO, it is inevitable that the entity will be required to register for GST. Therefore, any supplies that the entity makes will be charged with GST, and relevant systems and processes will be required to record and return all required GST.

The initial transfer of assets to the water services company will need to be carefully considered, but ultimately it should be GST neutral as all parties to the transaction would be GST registered. We recommend that specific advice is obtained in relation to the GST considerations prior to the transactions taking place.

PAYE, FBT, WITHHOLDING TAXES, AND KIWISAVER

As the proposed CCO will require staff to operate the relevant water services, it is likely that the CCO will employ staff and relevant contractors. As with any entity which employs staff, the proposed CCO will need to ensure it has sufficient systems and procedures in place to accurately identify, deduct and return indirect taxes such as PAYE, FBT, and KiwiSaver contributions, as well as withholding taxes on certain payments to contractors.

Again these are not significant issues and therefore for the purposes of this high level advice, we will not elaborate. Suffice to say however that tax advice on the initial transfer of staff and the establishment of appropriate processes and procedures would be required, potentially in conjunction with employment advisors.

Other potential structure options

As requested, we have limited our advice to the tax considerations of the two preferred CCO options identified by previous studies. For completeness, we note that other structuring options may be available such as an incorporated or unincorporated joint venture, a Trust etc. We do not consider that any of these alternative structure options would provide greater benefits than the options discussed above.

This high-level advice has been prepared by Phil Fisher (Tax Director) and Alan Sandford (Associate) of TaxTeam Limited, a leading provider of tax advisory and tax risk management services in the local authority sector and provider of tax advice to all three Councils involved in the Waikato Water Services proposed CCO.

To contact us, please call 04 494 2390 or email either philip.fisher@taxteam.co.nz or alan.sandford@taxteam.co.nz.

Confidential

APPENDIX 7: GOVERNANCE CONSIDERATIONS

Governance Workshop

Domestic and international experience demonstrates that good governance arrangements are essential for the efficient delivery of water services. Acknowledging the importance of governance in the identification of the best option for service delivery, Cranleigh conducted a Governance Workshop on 5 February 2015, attended by relevant Council personnel. This appendix summarises the relevant outcomes facilitated from that workshop.

Governance Outcomes

The workshop participants identified that governance arrangements would need to address certain critical matters in any new model which is established:

Leadership	Services
▪ What is the ability to effect change?	▪ What is the scope and suitability of water and potential stormwater services? ▪ What controls/ accountability are available if there is a serious breach of service performance?
Community Relations & Environment	**Financial & Asset Management**
▪ How will community expectations be met and managed? ▪ How to generate community acceptance ▪ Environmental sustainability	▪ How will assets be managed utilising best industry practices? ▪ Including the impact of the capital charge and generating surpluses to invest in the network?
Operations	**Integration with other Council Services/ Activities**
▪ What is the ease of implementation? ▪ How to achieve organisational sustainability ▪ How to optimise staff efficiency and effectiveness? ▪ Ability to attract and retain staff	▪ Any model would need to reflect the inherent physical connection between water and other infrastructure services, such as roading, and any other council activities. ▪ How would this relationship with other activities be recognised and managed?

Governance in an ESS context

An Enhances Shared Services model (**ESS**) will involve the following structure:

(a) One council offers to provide a defined set of services (**Providing Council**) for the benefit of all three councils in return for payment.

(b) Each council receiving the Shared Services (**Recipient Council**) will enter into a contract with the Providing Council. The contract will determine – scope of services to be provided, payment terms, responsibilities of the parties, and termination circumstances (recorded in a **Management Service Agreement**).

(c) The shared services are (**Shared Services**):

Confidential

Strategy & Planning	Projects	Operations	Stakeholder Management
Asset Planning Growth Planning Demand management AMPs	Project delivery Project Management Renewals Procurement	Network Ops Plant Ops Maintenance & Planning Laboratory Trade Waste	Water Education

(d) The ESS model will not involve the establishment of a new separate legal entity.

(e) There will be no transfer of assets from any of the three councils to the Providing Council. The Providing Council will retain its own assets.

(f) The Shared Services will be delivered by the Providing Council under the Council's existing policies and procedures.

Our recommendations:

(i) Establishment of a **Establishment Committee** to oversee the delivery of the shared services and agree on project priorities and budget for final approval by each council

(ii) The Establishment Committee will have access to an **Advisory Board** of industry experts to provide oversight and endorsement of plans and budgets, as required

(iii) Shared services team will rely on the corporate services such as IT and accounting provided by each council

(iv) Each council receiving the shared service will monitor the services delivered and report on service levels and results

(v) Councils retain ownership of their own water assets, collect associated revenues and raise and repay any necessary debt

(vi) The general manager ESS would formally report to a CEO of the providing council as he or she would be an employee of that council. However, key decisions would have oversight from the Establishment Committee

Overlaying the desired Governance Outcomes onto the ESS model:

ESS Model – Governance Considerations	
Leadership	
What is the ability to effect change?	▪ The ESS model does not involve the creation of an autonomous legal entity. ▪ The Shared Services will form part of the operating activities of the Providing Council. ▪ Only the Providing Council will have direct powers over its operations. It will be able to effect change in relation to the Shared Services subject to the terms of the Management Service Agreement with the Recipient Councils. ▪ The Recipient Councils may have powers under the

Confidential

ESS Model – Governance Considerations	
	Management Service Agreement to influence and request change in relation to the Shared Services. ▪ The Establishment Committee and the Advisory Board will assist in the three councils to exercise their influence over the delivery of Shared Services.
Services	
▪ What is the scope and suitability of water and potential storm water services? ▪ What controls/ accountability is available if there is a serious breach of service performance?	See above at (c) ▪ Controls and accountability measures available as between councils must be written into the Management Service Agreement. ▪ It is expected that there will be no changes to the levels of accountability the Providing Council has to its own constituents/customers and the same will apply to the levels of accountability between the Recipient Councils and their respective constituents/customers. ▪ The ESS model may involve the contraction of operations for some council/s and expansion of operations for other. This may require all councils to change their Statement of Intent, and provide an additional measure of public accountability for the model. ▪ In practice controls and accountability measures will be affected through the Establishment Committee.
Community Relations & Environment	
How will community expectations be met and managed? How to generate community acceptance Environmental sustainability	▪ Unless otherwise agreed in the Management Service Agreement, each council will continue to mange the expectations of its respective communities. Councils may share resources, which could assist in the management of those relationships. ▪ The three councils will need to demonstrate the benefits of the ESS model to their constituents/customers. ▪ Each council will be responsible for managing the environmental sustainability of its operations. The Recipient Councils may wish to hold the Providing Council accountable on for such measures as it relates to the Shared Services under their Management Service Agreement.
Financial & Asset Management	
How will assets be managed utilising best industry practices? Including the impact of the capital charge and	▪ The participants recognised that given the lack of autonomy and independence for an ESS model, it may be beneficial to appoint an Advisory Board comprising of industry experts who may be called on for guidance in relation to Asset Management issues. The role of the Advisory Board will not be

Business Case For Water Services Part B 6 May 2015 -80-

Confidential

ESS Model – Governance Considerations	
generating surpluses to invest in the network?	one of decision-making, but rather consultation and influence through best practise expertise.
Operations	
What is the ease of implementation? How to achieve organisational sustainability How to optimise staff efficiency and effectiveness? Ability to attract and retain staff	▪ Under an ESS model, the delivery of the Shared Services is expected to be the responsibility of one Providing Council. The responsibility for operations, which deliver those services and all the management issues this involves, will remain with the Providing Council. ▪ The other Recipient Councils may have some influence over these matters through the Management Service Agreement.
Integration with other Council Services/ Activities	
Any model would need to reflect the inherent physical connection between water and other infrastructure services, such as roading, and any other council activities. How would this relationship with other activities be recognised and managed?	As Shares Services would still be delivered by a council, one would expect there to be natural proximity between the different departments delivering roading and other services which are physically related to water services, at least for the Providing Council. The Recipient Councils may need to make special provision internally and through their Management Service Agreement with the Providing Council to ensure that such on-going communications exist between the different teams delivering related services whether these teams are in the one council or across different councils.

Governance in CCO context

A Council Controlled Organisation model (**CCO**) will involve the following structure:

(i) Establishment of a Council Controlled Organisation (CCO) by the three participating councils to provide a defined set of services;

(ii) As a separate legal entity, the CCO is established under its own company constitution.

(iii) Using Letters of Expectation the CCO and the shareholding councils will negotiate a Statement of Intent (SOI) which will govern the operations of the CCO and will be the main governance measure to apply accountability and transparency to its operations.

(iv) Each of the three councils will transfer water services related assets and liabilities to the CCO.

(v) we recommend the councils establish an Establishment Committee to facilitate discussions between all councils to produce a series of agreed outcomes, protocols and on-going

Confidential

management of the relationship with the CCO. The committee will comprise of two members appointed by each council (one of whom must be a councillor).

Overlaying the desired Governance Outcomes onto the CCO model:

CCO Model – Governance Considerations	
Leadership	
▪ What is the ability to effect change?	▪ The CCO will have its own independent board. ▪ Ostensibly the board will have all powers and responsibilities to effect change. ▪ In practice the board's ability to effect change will be influenced by the CCO's powers under its constitution, and the Statement of Intent, and the voting arrangements which have been agreed on with the shareholding councils, see below. ▪ The councils will need to address how the directors will be selected and appointed (see below).
Services	
▪ What is the scope and suitability of water and potential storm water services? ▪ What controls/ accountability is available if there is a serious breach of service performance?	▪ The agreement on the initial Statement of Intent and its renegotiation annually provide the controls and accountability measures for the shareholding councils.
Community Relations & Environment	
▪ How will community expectations be met and managed? ▪ How to generate community acceptance ▪ Environmental sustainability	The way to manage these issues will need to be agreed between the three councils and included in the Statement of Intent and covered by: ▪ shareholding structure; ▪ mechanisms to monitor performance of the organisation against the standards agreed on with the three councils as reflected in the SOI, ▪ voting arrangements for Board and the Shareholders meetings, and ▪ tariff setting arrangements. These are discussed in greater detail below.
Financial & Asset Management	
▪ How will assets be managed utilising best industry practices? ▪ Including the impact of the capital charge and generating surpluses to invest in the network?	
Operations	
▪ What is the ease of implementation? ▪ How to achieve organisational sustainability ▪ How to optimise staff efficiency and effectiveness? ▪ Ability to attract and retain staff	
Integration with other Council Services/ Activities	

Confidential

CCO Model – Governance Considerations	
Any model would need to reflect the inherent physical connection between water and other infrastructure services, such as roading, and any other council activities. How would this relationship with other activities be recognised and managed?	As the services will be delivered outside of a Council setting, a special effort will need to be applied to ensure that communication and management links between the CCO and the affected council departments e.g. – roading, are established and maintained.

CCO - Key constitutional arrangements

The key constitutional arrangements include:

(i) Capital contributions and borrowing powers;

(ii) Use of surpluses and other payments to councils;

(iii) Appointment of directors;

(iv) Voting rights;

(v) Monitoring mechanisms;

(vi) Sustainability (water use and organisational); and

(vii) Political independence; maintaining connectedness.

CCO - Voting Arrangements for Shareholders

There was a general agreement at the governance workshop that voting arrangements should, unless absolutely necessary be done on a consensual basis. We agree with this to avoid a situation where one Council effectively has a veto over the other councils. In fact we consider that the right of veto should only be applied where matters of fundamental importance are being decided. We would expect in practice all decisions to be agreed unanimously, but in the event that they could not then a majority rule would apply.

One way of achieving this is to have two classes of shares on the basis that there is a distinction between voting rights and ownership rights.

We recommend simple majority versus special majority agreement as set out below:

Simple Majority Decisions (Each council has an equal vote)	Special Majority Decisions - >75% Shareholder Vote (Each council has votes in proportion to its shareholding)
Appointment of Directors	Major transactions as defined by the Companies Act
Pricing decisions	Any change to the CCO constitution
Approving Letter of Expectation	Any issue of shares
Approving SOI	Increase in debt over a certain cap or ratio
Other day to day decisions	Any change in the purpose of the CCO or scope of

Confidential

Simple Majority Decisions (Each council has an equal vote)	Special Majority Decisions - >75% Shareholder Vote (Each council has votes in proportion to its shareholding)
	services
	Acceptance of another council as a new shareholder
	Any distribution of capital to shareholders
	Taking steps to wind up the CCO

Points to note:

(a) **The process for appointment of directors to the CCO.** The first step will be to identify and consider the skills, knowledge and experience required of directors of the CCO. No elected member or council official should be a director. The appointment process will need to include a criteria and nomination/ appointment mechanism. We recommend that the appointment process is run by a respected independent recruitment agency or by public call for nominees and that no Council has the right appoint a director.

(b) **Retention of cash for capex**. A CCO is not to make any profit out of water (this is intrinsic in the definition of a CCO under the Local Government Act but it may accumulate from time-to-time cash reserves for identified purposes. This may occur to smooth price increases over the long term.

(c) **Pricing decisions**. We recommend that the CCO have responsibility for proposing pricing, but it does so with guidelines established by the councils from an agreed starting point. The Establishment Committee will then approve the proposed pricing arrangement. This process will stop the pricing decisions becoming politicised. The key issue for the CCO will be to demonstrate cogently that it has a long-term capital financial plan (capex and opex) that is appropriate for the sub-region. Another key decision for the CCO will be develop and recommend price harmonisation guiding principles and mechanism. Watercare provides a good example of what can be done.

(d) **Billing.** This will need to be initially done by the councils as the CCO will not have the capability to undertake this function on establishment. The CCO should bill customers as soon as it is able to implement a billing system. The CCO and the councils will also need to consider what consequences for payment failure will be applied, how (in which specified circumstances) to whom (hardship exclusion) and by whom (council or CCO)?

(e) **Major Transactions.** This will be as defined by the Companies Act, but will include mergers, acquisitions and significant disposals of assets and third party borrowings. In these cases these changes would require 75% shareholder approval.

(f) **Changes to the nature and scope of business.** We recommend that material changes in the nature and scope of activities will require council shareholder approval. Examples include if the CCO wanted to get into an unrelated business (i.e., change to the nature of activity) or if the CCO wanted to start delivering services to other Councils (i,e., change in scope of activity) then the councils would need to formally approve and document this.

(g) Taking steps to **wind up the CCO**

(h) Any implementation of **residential water metering requires specific council prior approval**, it cannot be a decision of the CCO.

Confidential

Statement of Intent

A session during the workshop involved the preparation of a high-level SOI, both from a Council and Board perspective. The results are set out below:

SOI Issue	Council Perspective	CCO Board Perspective
Governance	▪ Compliance with agreed strategic documents ▪ Full reporting of financial and non-financial information	
Funding Model	▪ Prudent asset management	▪ Non-profit (definition is key) ▪ Retain any cash for reinvestment ▪ No dividends ▪ Freedom around financial arrangements ▪ CCO to advise on pricing issues
Performance Standards	▪ Management transition from status quo ▪ Sound environment stewardship	▪ Need long-term focus on outcomes, commensurate with responsibility and accountability ▪ Must be achievable (need to allow time to come up to full compliance) ▪ Compliance KPIs must recognize the changing environmental standards
Pricing	▪ Want to have input into pricing decisions	▪ Need reasonable powers to achieve objectives
Determination of LOS	▪ Meet agreed LOS targets	▪ Determined by Board ▪ Will take into account capex programme and should not be obligated to justify this to the public
Corporate Social Responsibility	▪ Meet shareholder expectations ▪ Expect appropriate customer and stakeholder management ▪ Appropriate handling of billing and bad debtor management	▪ Determined by Board

Social/Community Responsibility

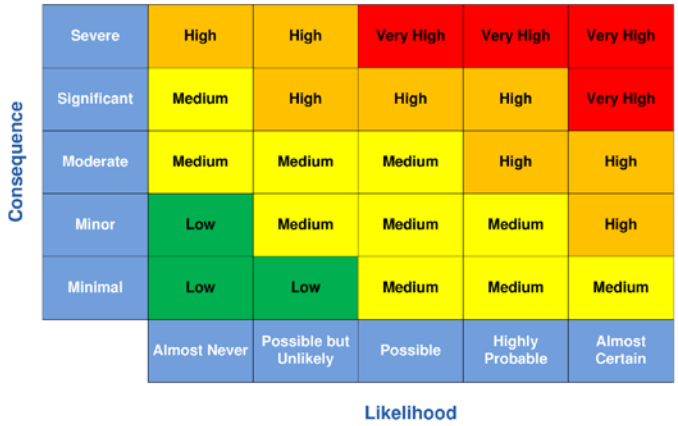
The CCO will have to deal with hardship arrangements, particularly if the councils agree that the CCO is allowed to cut off the water. Another instance is a deliberate policy of not providing a full water service where it is not economic to do so. These decisions will have a community impact and need to be carefully considered. There are a number of ways to deal with hardship issues. In the case of Watercare, a separate trust has been established to provide financial assistance to households that struggle to pay water charges. In other cases, the difference between what the CCO should receive and the amount paid by the household, or hardship gap, is met by the respective council. In both cases the CCO receives the full amount from the councils that is invoiced to ensure it is funded to meet the cost of maintaining the water network.

Confidential

APPENDIX 8: RISK EVALUATION

A risk evaluation workshop was undertaken with council engineering and finance officials on Friday 13 February 2015. The purpose was to identify key risks and evaluate the consequence and likelihood of each under each of the three options. This was subsequently moderated by the project team and the following scoring matrix was applied. Weights were then applied to the scores which were then summed to give a total score. The lower the score; the lower the risk.

Composite Scoring Guide						
	Consequence	Composite Score				
5	Severe	5	10	15	20	25
4	Significant	4	8	12	16	20
3	Moderate	3	6	9	12	15
2	Minor	2	4	6	8	10
1	Minimal	1	2	3	4	5
	Likelihood	AN	PBU	P	HP	AC
		1	2	3	4	5



Confidential

Risk	Description	Status Quo		Scores			ESS		Scores			CCO		Scores		
		Consequence	Likelihood	Cons	Likely	Total	Consequence	Likelihood	Cons	Likely	Total	Consequence	Likelihood	Cons	Likely	Total
Public perception	Lack of public confidence in the provision of water services and how they are delivered	Significant	Possible	4	3	12	Significant	HP	4	4	16	Significant	Possible	4	3	12
Customer services	Services do not deliver to customer expectations	Moderate	Possible	3	3	9	Significant	HP	4	4	16	Significant	PBU	4	2	8
Human Resources	The inability to attract and retain the best people - opportunities for professional development	Significant	HP	4	4	16	Significant	AC	4	5	20	Significant	PBU	4	2	8
AM planning	Poor decision making around AMP	Severe	Possible	5	3	15	Severe	HP	5	4	20	Severe	PBU	5	2	10
Regulatory compliance	Failure to meet regulatory compliance requirements with the delivery of water and WW services - WW resource consents, NZDW standards etc.	Significant	AC	4	5	20	Significant	AC	4	5	20	Severe	PBU	5	2	10
Affordability	Growth and LOS requirements cannot be delivered at an affordable cost	Significant	HP	4	4	16	Significant	AC	4	5	20	Significant	PBU	4	2	8
Planning alignment	Lack of Alignment to the 3 councils planning and growth requirements	Significant	PBU	4	2	8	Significant	Possible	4	3	12	Significant	Possible	4	3	12
Economic growth	Responsiveness to water business (growth) opportunities	Significant	HP	4	4	16	Significant	AC	4	5	20	Significant	AN	4	1	4
Network optimisation	Network (plants and pipes) are not well optimised - operations and renewals.	Moderate	HP	3	4	12	Moderate	HP	3	4	12	Significant	PBU	4	2	8
Capital works	Capital works programme is not delivered in the time frame	Significant	AC	4	5	20	Significant	AC	4	5	20	Severe	PBU	5	2	10
Resilience	Inability to meet future adverse events	Moderate	HP	3	4	12	Moderate	HP	3	4	12	Moderate	PBU	3	2	6
Business focus	Loss of focus on core activities	Moderate	HP	3	4	12	Moderate	AC	3	5	15	Moderate	AN	3	1	3
Health & Safety	Not meeting H & S compliance requirements	Significant	Possible	4	3	12	Significant	HP	4	4	16	Significant	PBU	4	2	8
Legal	Exposure to liability	Moderate	Possible	3	3	9	Moderate	HP	3	4	12	Moderate	PBU	3	2	6
Political influence	Direct political influence in decision making	Moderate	Ac	3	5	15	Moderate	AC	3	5	15	Moderate	PBU	3	2	6
Low transparency	Lack of transparency with decisions	Moderate	PBU	3	2	6	Moderate	Possible	3	3	9	Moderate	HP	3	4	12
Bad decisions	Poor quality of governance decisions	Significant	Possible	4	3	12	Significant	Possible	4	3	12	Severe	AN	5	1	5
Social disconnect	Lack of social conscience	Moderate	PBU	3	2	6	Moderate	PBU	3	2	6	Moderate	Possible	3	3	9
Cultural disconnect	Disengagement with Iwi	Severe	PBU	5	2	10	Severe	PBU	5	2	10	Severe	PBU	5	2	10
Composite Score (lowest is best)			Medium			**238**		High			**283**		Low			**155**

Confidential

APPENDIX 9: WATER AND WASTEWATER COMPLIANCE

The following tables have been extracted from Mott MacDonald's engineering report, section 2.4. They provide more detail on water and wastewater compliance.

Table 5.1: 2013/14 Drinking Standard NZ 2005 Compliance Results

Council	Community	Population	Bacteria Achieved	Protozoa Achieved	Chemical Achieved	Grading
Hamilton	Hamilton City	130,813	Yes	Yes	Yes	Aa
	Greenhill Road	17	Reporting not required			Au
	Powells Road	20	Reporting not required			Au
	SH26, Morrinsville Rd	57	Reporting not required			Au
	Ruakura/Ryburn Rd	151	Yes	Yes	Yes	Au
	Temple View	1,413	Yes	Yes	Yes	Aa
Waipa	Cambridge	13,368	Yes	**No**	Yes	Ungraded
	Karapiro Village	132	Yes	Yes	Yes	Ungraded
	Kihikihi	2,000	Yes	Yes	Yes	Ab
	Ohaupo	468	Yes	Yes	Yes	Eb
	Pukerimu Rural	3,278	Yes	Yes	Yes	Ed
	Pirongia	1,500	Yes	**No**	Yes	Uc
	Te Awamutu	9,165	Yes	**No**	Yes	Ub
Waikato	Huntly	7,210	Yes	**No**	**No**	Eb
	Rotongaro	130	Yes	**No**	**No**	Ed
	Horotiu	459	Yes	**No**	**No**	Ee
	Ngaruawahia	5,691	Yes	**No**	**No**	Ee
	North Western District	115	Yes	Yes	Yes	Au
	Pokeno	519	**No**	**No**	Yes	Ungraded
	Raglan	3,187	**No**	**No**	Yes	Ed
	Southern Districts	5,466	Yes	Yes	Yes	Au
	Hopuhopu	200	Yes	**No**	Yes	Ee
	Taupiri	529	Yes	**No**	Yes	Ee
	Te Kauwhata	1,410	**No**	**No**	Yes	Ed
	Whangamarino	739	Yes	**No**	Yes	Ed
	Tuakau North	823	**No**	**No**	Yes	ungraded
	Tuakau South	3,119	**No**	**No**	Yes	ungraded

Source: Annual Report on Drinking-water Quality 2013–2014 and http://www.drinkingwater.esr.cri.nz/

The Drinking Water grading system is a two-letter grading, such as Aa, Cb, Ed, etc. The capital letter (A1, A, B, C, D or E) represents the grade of the water coming into the zone (i.e. source quality and treatment) while the lower-case letter (a1, a, b, c, d or e) indicates the quality of the water received at the customer's gate. Typically, if one tends to be high (A or B), so will be the other (a or b), but any combination is possible. Table 5.2 and Table 5.3 below provide further description for each grade.

Table 5.2: Source and Plant Grading (A1 to E)

Grade	Description
A1	Completely satisfactory, negligible level of risk, demonstrably high quality
A	Completely satisfactory, extremely low level of risk

Confidential

Grade	Description
B	Satisfactory, very low level of risk when the water leaves the treatment plant.
C	Marginally satisfactory, low level of microbiological risk when the water leaves the treatment plant, but may not be satisfactory chemically.
D	Unsatisfactory level of risk
E	Unacceptable level of risk
U	Ungraded

Table 5.3: Distribution Grading (a1 to e)

Grade	Description
a1	Completely satisfactory, negligible level of risk, demonstrably high quality; meets Aesthetic Guidelines and has ISO 9001:2000 accreditation
a	Completely satisfactory, extremely low level of risk
b	Satisfactory, very low level of risk
c	Marginally satisfactory, moderately low level of risk
d	Unsatisfactory level of risk
e	Unacceptable level of risk
u	Ungraded

Table 5.4: 2013/14 Wastewater Compliance Results

Council	Overall Result	Scheme	Summary / Comments
Hamilton	Partial Compliance	Hamilton	Effluent quality inadequate at times. 95% of time compliant with E. coli limits. Plant upgrades currently planned to improve/maintain level of compliance in the future.
Waipa	Partial Compliance	Cambridge	Partial compliance. Future works planned will ensure more consistent compliance. The upgrades mean that the WWTP will be compliant in 2017.
		Te Awamutu	Mostly compliant. Breaches were due to either process or equipment failure. These were rectified by the operators. A plant upgrade is currently being planned.
Waikato	Partial Compliance	Meremere	Partial compliance. Effluent quality inadequate. A plant upgrade is currently being planned.
		Ngaruawahia	Partial compliance. Effluent quality inadequate. A plant upgrade is currently being planned.
		Raglan	Partial compliance. Effluent quality inadequate. A plant upgrade is currently being planned.
		Huntly	Partial compliance. Effluent quality inadequate but likely to be complying 2013/2014.
		Te Kauwhata	Full compliance
		Tauwhare Pa	Full compliance
		Maramarua	Mostly compliant. A plant upgrade is currently being planned.
		Te Kowhai	Partial compliance. Effluent quality inadequate. A plant upgrade is currently being planned.
		Matangi	Partial compliance. Effluent quantity inadequate. A plant upgrade is currently being planned.

Source: Three Waters Assets and Services - results of a survey of council provision NZIER 2014, tables 57 & 59. Waikato District Council, Waipa District Council and Hamilton City Council Annual Reports 2013/2014

Confidential

APPENDIX 10: APPROACH TO FINANCIAL MODELLING AND KEY ASSUMPTIONS

Approach to Financial Analysis and Key Assumptions

The analysis undertaken forecasts the 30-year financial statements for each of the three council's water businesses including water, wastewater and stormwater.

The first stage was to forecast and assess the current position or Status Quo. Each council provided ten year LTP's in respect to their water business and supporting analysis. They also provided 30 year capital expenditure forecasts contained in their 30 year infrastructure strategies.

This enabled Cranleigh to build separate 30 year financial statements (income and expenditure, cash flows and balance sheets) for each council. Operating costs for years 11-30 have been estimated by Cranleigh based on expected growth and inflation factors and taking into account the fixed and variable nature of key operating costs.

Water revenue for years 11-30 has been estimated for each council to ensure operating costs, including depreciation and interest and a small margin (1%) is achieved. Additionally an estimate for development contributions is included as revenue.

The analysis splits the three water business into its three component parts, water, wastewater and stormwater.

The individual council financial models have been reviewed by the respective CFO's at each council.

The three council models were then consolidated to provide a 30 year view of the Status Quo, both three waters including storm water and two waters excluding storm water. These views provide the counter factual against which the CCO option and the ESS option can be assessed.

For the CCO we have developed two scenarios including a conservative base scenario and a positive scenario based on the estimates provided by Mott MacDonald.

The financial models take inflation into account and are expressed in nominal dollars.

It should be noted that the projections for the first ten years, which are largely based on the LTPs, are more reliable than years 11-28, which are partially based on the councils 30 years infrastructure strategies which are long term estimates. Therefore the 28 year results should be seen as a possible outcome based on councils' current long term estimates driven by factors such as population growth rates and long term capital expenditure requirements.

Changes in the years 11-28 forecasts will impact both the SQ, ESS and CCO models. For example if the capital expenditure forecasts change this will have the impact of under or overstating the potential savings in the ESS and CCO models. This is covered in the sensitivity analysis.

Financial models have been developed for both the CCO option and the ESS option using the following key assumptions.

The financial models have been built in nominal dollars and with year 1 being the financial year ended the 30th June 2016. It has been conservatively assumed that the CCO and ESS options would commence at the start of year 3 or in the 2017/18 financial year, if Councils decided to accept this recommendation.

Confidential

Key Assumptions

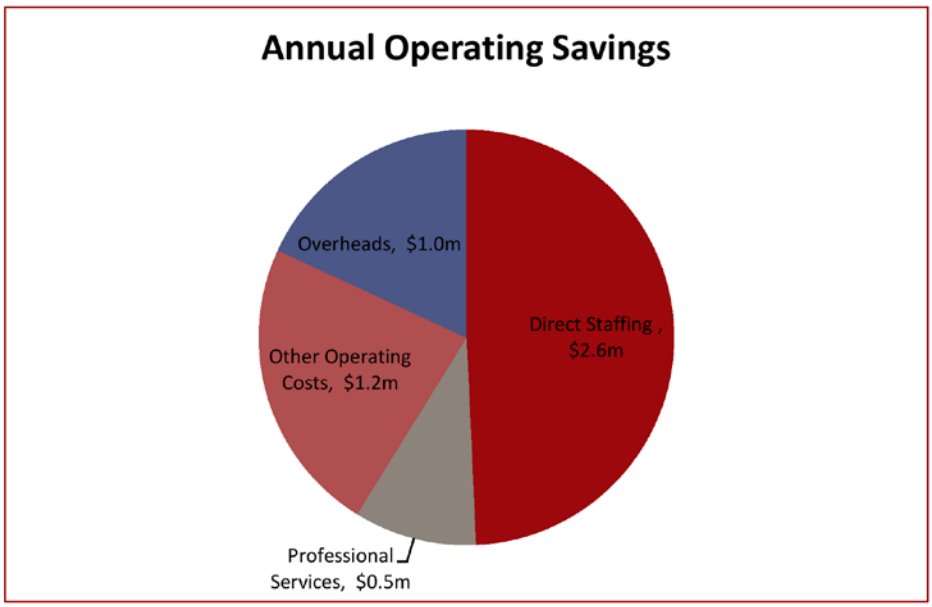
Operating Costs

The Status Quo operating costs for the three councils and a realistic level of expected savings under the CCO and ESS models are as follows:

Status Quo – Operating Costs Consolidated Water (inc Storm)	2015/16 Budget $m	Estimated CCO Savings %	Full Year CCO Savings $m	Comments
Direct Staffing Costs	14.6	18%	2.62	Reduction of 34 FTES - Assessment by MM & Cranleigh
Professional Services	2.0	25%	0.51	Cranleigh Assessment - reduction in duplication
Other Operating Costs	24.6	5%	1.23	Estimate by MM - general operating efficiencies /Procurements
Operating Costs Overhead	6.4	15%	0.96	Estimate by Cranleigh based on detailed overhead analysis
Total Operating Costs	**47.6**	**11.2%**	**5.3**	

ESS – Operating Costs Consolidated Water (inc storm)	2015/16 Budget $m	Estimated ESS Savings	Full Year ESS Savings $m	Comments
Direct Staffing Costs	14.6	3%	0.85	Represents saving of 10 FTEs - Assessment by MM and Cranleigh
Professional Services	2.0	10%	0.20	Cranleigh Assessment – reduction in duplication
Other Operating Costs	24.6	2%	0.49	Estimate by MM – general operating efficiencies /procurement
Operating Costs Overhead	6.4	0%	-	Unlikely to be any overhead savings
Total Operating Costs	**47.6**	**3.2%**	**1.54**	

Confidential



Under the CCO models the savings are expected to be achieved gradually over the first 3 years of operation. We have assumed 25% in year 1, 50% in year 2, 75% in year 3 and 100% from year 4 onwards. There will be set up and establishment costs in these early years which are covered below under Transition Costs.

Under the ESS model we have assumed savings are achieved over a two year period.

Direct Staffing

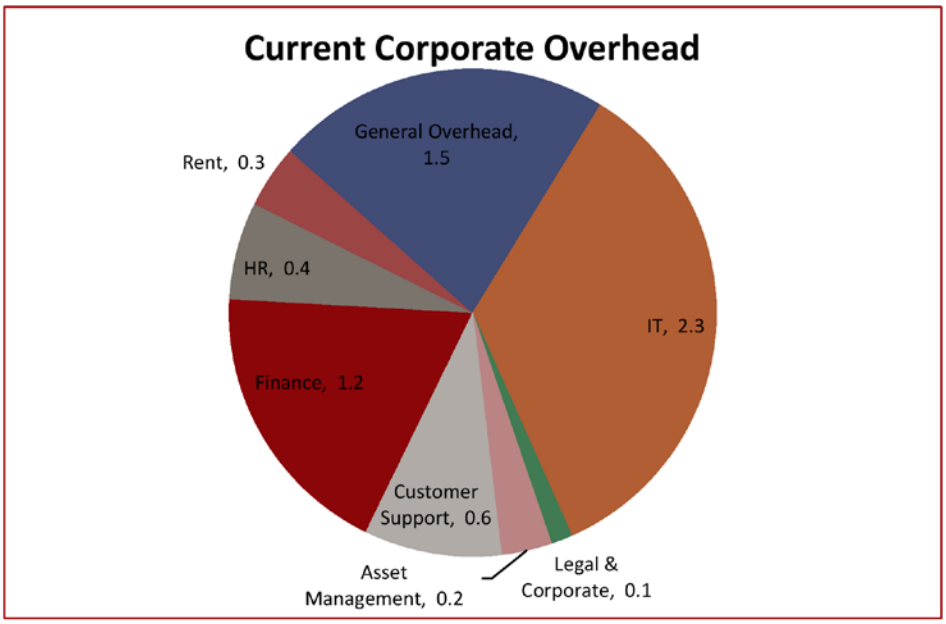
There is expected to be a reduction in the total number of direct staff. Under the CCO option, we have undertaken a detailed analysis of direct staffing an in conjunction with Mott MacDonald. Our assessment is that a realistic reduction of between 18% (34 FTEs) ($2.6m per annum) and 20% (38 FTEs) is achievable across strategy & planning, projects and operations. Current staffing levels in these 3 areas total 191 FTEs. These savings could be achieved through reorganisation of teams, reduced duplication of effort and appropriate outsourcing of some operations and maintenance activities. The modelling assumes that this would occur gradually over a three year time period.

The ESS model has fewer opportunities for efficiencies but conservatively we expect to see a reduction of 10 FTEs at the team leader / supervisor level.

Other Operating Costs

This includes a number of costs including Contracts, Services and Materials ($13.2m), Utility Costs ($7.4m), Internal Charges ($1.7m), General Administration ($1.5m) and Other Costs ($0.8m). An assessment by Mott MacDonald based on international benchmarks is that conservatively an average of 5% ($1.2m per annum) (or 7.5% in the positive case) could be saved across these cost items under a CCO and 2% under an ESS model. The savings would be achieved through general efficiencies including better procurement and reduced duplication of effort.

Confidential



Overhead Savings

The current corporate overhead charged to the water businesses of the three councils is $6.5m p.a. It comprises of information systems ($2.3m), finance ($1.2m), general overhead including governance ($1.5m), customer support ($0.6m), human resources ($0.4m), rent ($0.3m) and other costs ($0.2m).

We have made an assessment of the corporate costs required for a CCO based on a headcount of 28 FTEs, an office capable of housing around 120-130 people and the assumption that IT could be migrated across into the systems of one of the councils at a marginal cost.

It should be noted that IT is probably the largest and most uncertain of ongoing costs and will require a detailed strategic review of its own before any implementation of a CCO.

We estimate total overhead savings under a CCO are in the region of $1.0m per annum or 15%. Some overhead will remain with councils as stranded costs and this is described below.

For modelling it is assumed that the savings in CCO overheads would occur gradually over a three year period, with 25% savings in year 1, 25%, in year 2, 75% in year 3 and 100% from year 4 onwards.

Overhead services may continue to be provided by councils over the first three years of operation and gradually migrated.

In addition to this, it is assumed that councils would charge a reducing level of stranded overhead, which is described below. This will give councils time to downsize their overheads to an appropriate size. Again this should be achievable within normal staff turnover levels.

The transition and establishment costs include $1.5m for staff recruitment and redundancy costs to be prudent.

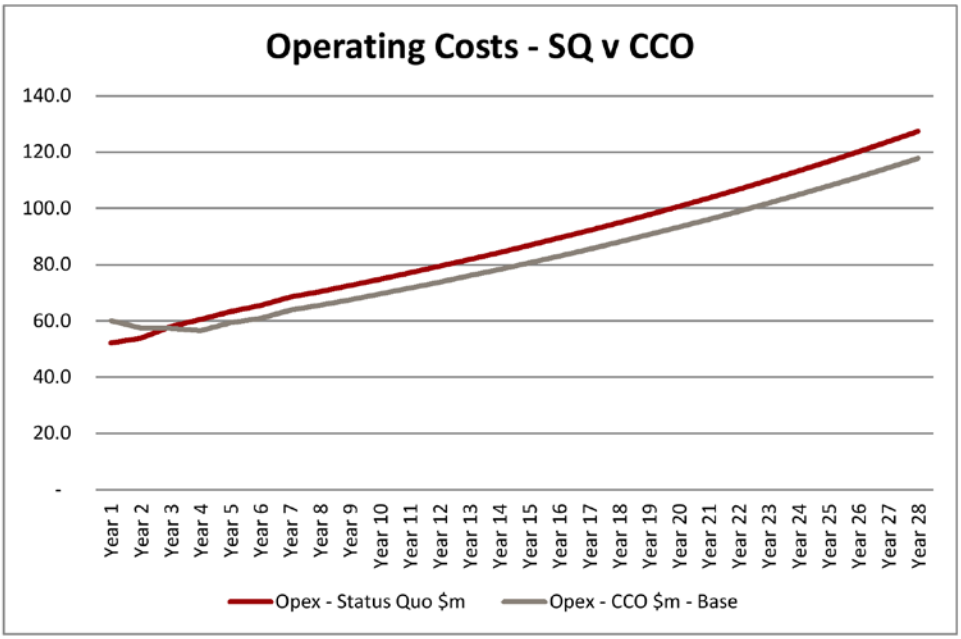
Total Operating Savings

Under a CCO model, total operating savings, before any other CCO costs, are estimated at $5.3m per annum or 11.2% of current operating costs. After taking into account ongoing council monitoring costs, stranded overheads and additional governance costs required by the CCO the net operating savings

reduces to $4.0m per annum or 6.5%. Under the positive case the net operating savings are 9.0% per annum.

Over the next 28 years in nominal terms this amounts to $153m in operating savings. Under the positive case this increases to $213m over the 28 years.

Under the ESS model the operating savings are estimated at around $1.2m per annum or 2.9% of current operating costs. Over the next 28 years in nominal terms this amounts to $64m in operating savings.



Capital Expenditure

A detailed analysis of Capital expenditure was provided by the three councils reflecting their 10 year LTPs and their 30 year infrastructure strategies. This was detailed by programme under water, wastewater and stormwater and by level of service improvements, growth demand and renewals.

These were combined and analysed by Mott MacDonald, to estimate what synergies could be achieved by combining the water business of the three councils or by managing capital expenditure jointly under an ESS. This was done in conjunction with council engineers. Particular focus was placed on determining whether duplication of effort at the council boundaries could be eliminated and whether a 'joined up' regional network could provide either cost efficiencies or better resilience of supply.

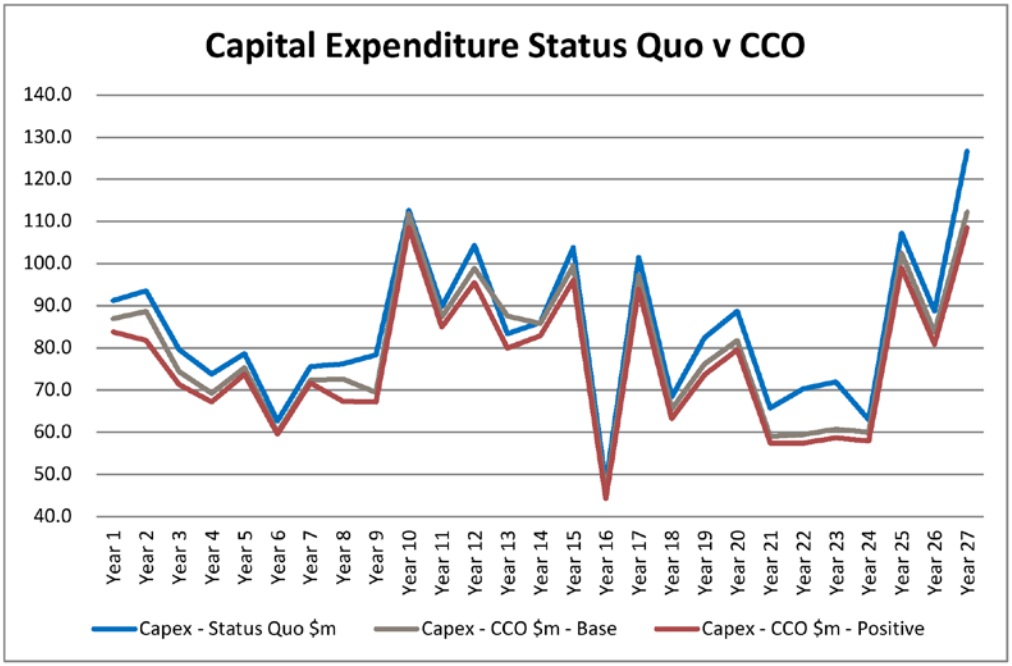
In conclusion, the Capital Expenditure synergies were relatively small given the nature of the network, i.e. a widely dispersed rural network in Waikato and Waipa and an urban network servicing Hamilton. In total, with the ability to defer some expenditure and the ability to get procure more efficiently, total capex savings over the Status Quo amount to 5.7% per annum over the 28 years, a total in nominal terms of $151m. Under the positive scenario these savings increase to $235m or 8.9%.

The key synergy saving identified by Mott MacDonald is $43m of savings coming from the connection of Peacocks to Cambridge. The pipeline would be pressurised and so will be a lot smaller than originally planned by Hamilton. The original cost for the Peacocks pipe is $103.9 million reduced to $60.7 million with the Cambridge connection (see Capex model spreadsheets).

Confidential

General efficiencies are estimated to be 4.25% under the base scenario and 7.5% under the positive scenario.

Under the ESS Model there is unlikely to be any network synergies, however combined procurement is expected to save in the region of 1.5% per annum or $40m over the next 28 years.



Note – we have excluded year 28 in above graph due to inclusion of HCC Treatment plant in Year 28 which distorts view

We have taken the Capital expenditure forecasts of the respective councils LTPO's for years 1-10 and the Infrastructure strategies for years 11-30. Some councils have not forecast expenditure of less than $1m in the year 11-30. In these cases we have made an estimate of capex based on the average spend on projects under $1m in years 1-10.

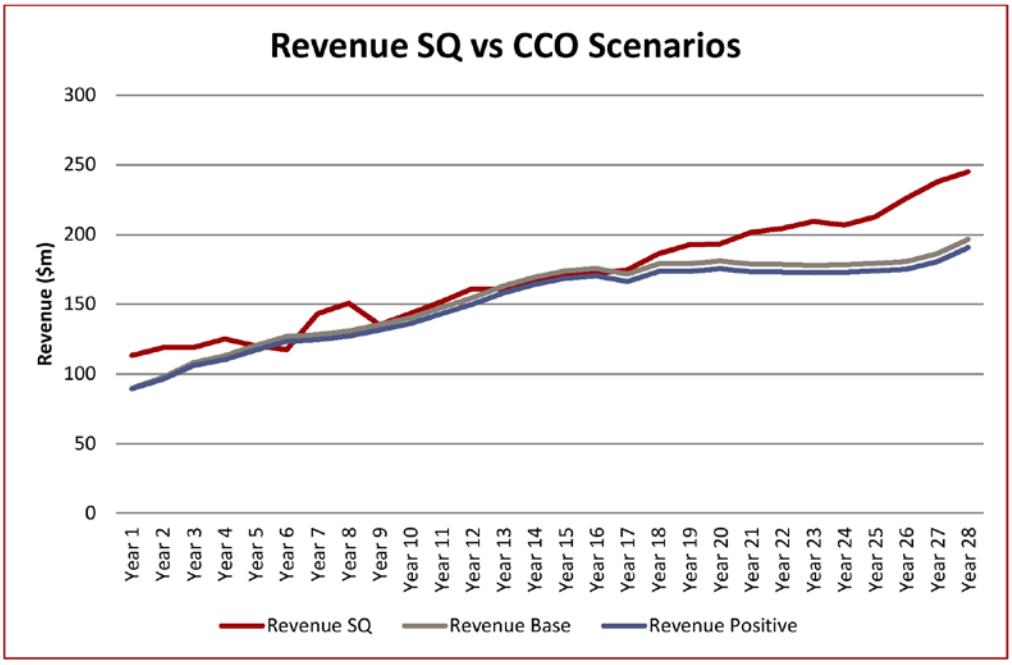
The Capex forecast are less reliable in the year 11-30 forecasts as they have not been subject to moderation and the same level of review as the LTP Capital Expenditure numbers. Hamilton has included a large water plant in year 30 to ensure visibility in its 30 year infrastructure strategy.

In terms of sensitivity of these capital expenditure forecasts a 10% change in the Capex in each council over years 11-30 impacts on the PV of savings by 2.5%.

Revenue

Water revenue comprises of general rates, targeted rates, specific water charges, development contributions and various other miscellaneous revenue. The individual councils have forecast revenue increases based on requirements to cover forecast operating costs and capital expenditure.

Confidential



All three councils have significant capital expenditure plans over the next 10 years ($764m) and are largely financing this through increases in revenue and increases in collective debt from the current level of $148m to $267m at year 10.

For modelling purposes we have separated out development contributions from other revenues. We have assumed that all development contributions received are treated as revenue.

Forecasting of Status Quo Revenue

- Years 1 – 10 Revenue

  For the Status quo we have adopted the council LTPs and separated out development contributions received.

- Years 11 – 30 Revenue
  - Development Contributions – have applied the average % of development contributions received in years 1-10 over the total growth capital expenditure. This % is then applied to forecast growth capital in years 11-30.
  - Other revenue – this was set for each council to achieve a 1% margin on total operating costs including depreciation and interest payable.
- This methodology was agreed with the Council Finance Managers.

Forecasting the CCO Revenue

Development Contributions – we have used the Status Quo revenue less the 4.25% efficiency savings to forecast DC revenues.

Other revenue has been calculated to optimise the debt position for the CCO. The revenue is based on maintaining a minimum interest cover ratio (PBT + Depreciation) / Net Interest of 2.5 times.

The net result is a reduction of $96m base and $124m positive in total revenue charged to water and wastewater customers over the first ten years and $419m base and $543m positive over 28 years.

This represents a compound growth rate over the 28 year period of between 2.2% and 2.3% p.a. compared to the status quo of 3.1% p.a.

Under the ESS model we have assumed that revenue can broadly reduced by the combined operating and capital savings achieved, namely $27m over the first ten years and $10m over the 28 years.

Operating Costs

The three councils have provided detailed operating costs for the water businesses by activity for the ten years of the LTP. These have been broken down into the following key categories:

- Direct Staffing Costs - $14.6m per annum (variable factor – 20%)
- Professional services - $2.0m per annum (variable factor – 20%)
- Other Operating Costs - $24.6m per annum
    - Includes Contract Services and Materials (variable factor 50%)
    - General Administration (variable factor – 0%)
    - Vehicle Costs (variable factor 20%)
    - Utility Costs (variable factor 20%)
    - IT and Telecommunications (variable factor 20%)
- Overheads - $6.4m per annum (variable factor 20%)

For forecasting the Status Quo operating costs we have used the consolidated council costs for years 1-10.

For forecasting operating costs for years 11- 30 we have applied the following methodology;

For each of the above lines we have made an assessment of the variable nature of these costs lines and grown each cost line by inflation and expected water volume growth. This has been done for each council.

We have used an inflation rate for years 11-30 of 2.5%, per treasury forecasts, and applied a real wage growth rate of 1.0% to direct staffing costs.

The weighted average variable cost factor is 29.4%. The cost forecasts estimated for the CCO are the base line against which CCO savings are made. The impact of a change in the average variable cost factor will not materially impact the decision. For example if the average variable costs were 40%, rather than 29.4% than the PV of savings would be slightly higher at $92m, compared to $91m.

Likewise if we relaxed the 1% real growth in wages costs and the assumed wage growth equalled inflation, then the PV of savings would be reduced slightly from $91m to $90m.

Other Key Assumptions

Discount rate

To calculate the present value of savings under the CCO and ESS models we used a nominal discount rate of 8% p.a. The current Treasury real discount rate for infrastructure projects is 7.0% p.a. Adjusting for the current risk free rate (NZ Government 10 year bonds) gives an adjusted nominal discount rate of 8% p.a. At a 9.0% p.a. discount the PV of savings would reduce from $91m to $75m.

Confidential

Terminal Value

As capex and opex savings are expected to continue beyond year 28 it is necessary to estimate those future savings as a lump sum figure at the end of year 28 in the financial model. To do this we have used the average annual estimated capex and operating savings over years 19-28 (last ten years) and divided those by the discount rate in year 29. If we excluded the terminal value from the PV of savings calculation, the PV would reduce from $91m to $71m.

Interest Rates

We have applied a conservative rate of 6.0% p.a. to projected debt in both the CCO forecasts and in years 11-28 in the Status Quo forecasts. Councils have provided their own debt calculations for the first ten years. It is assumed that the CCO will be able to borrow at the same level as councils. The single nature of the assets of a CCO attached to a secure revenue stream makes the CCO an attractive banking proposition.

We have assumed an interest rate of 4.0% for interest receivable and have assumed that would be retained in the depreciation sinking fund to help finance future capital expenditure.

Confidential

APPENDIX 11: MOTT MACDONALD ENGINEERING REPORT SUMMARY

Business Case Analysis for Water Services
Engineering Assessment and Evaluation

Mott MacDonald

Executive Summary

Key Findings

The findings from the Engineering analysis carried out as part of this review support the formation of a Council Controlled Organisation (CCO) based on the following:

- It will facilitate the ability to effectively manage and deliver the investment programme of work for the next 30 years.
- It will enable the realisation of cost savings in capital and operational expenditure.
- It will facilitate an increase level of resilience security of supply.
- It will provide a solid foundation to address the future growth and economic development challenge.
- It will provide more opportunity to strategically manage assets where there are interdependencies.
- It will provide the platform to deliver a high level of service through a centre of excellence.

While the Enhanced Shared Services (ESS) model may provide some improvement to the status quo the analysis has shown that it will fall short of delivering what is capable under a CCO model.

Analysis approach

The approach adopted to consider the case for change through the evaluation of the Status Quo, ESS and an asset owning CCO included both qualitative and quantitative analysis and evaluation along with consideration of the challenges with the delivery of water, wastewater and storm water services.

Review Work

Review of the asset management and other data provided allowed for an understanding of the differences and similarities with the delivery of the water services across the three organisations. Differences in the level of service provided and compliance were noted between the three organisations along with the associated future challenges with meeting compliance requirements. A key theme noted is the challenge with delivering a compliant service across less densely populated areas. However each of the three organisations has projects planned to improve or maintain their level of compliance within the 30 year planning horizon.

Growth and Future demand

The forecast growth in demand to 2045 is approximately a 40% increase over the current demand. The individual Councils have planned to meet the future demand, however, as a CCO there would be significant benefits around strategic planning, resilience improvements and efficient delivery of an extensive (growth focussed) capital works programme. The CCO will also allow for improved and consolidated conservation and renewals program over the status quo and ESS approach. The improvements would be realised through economies of scale, a centre of excellence and organisational independence from the parent Councils.

Confidential

Operational Costs

The combined average operational expenditure of all three councils is currently circa $47.6 million per year (based on 2015/16 projections). Given the synergies associated with activities carried out by all three councils in this area considerable opportunities exist to deliver cost savings through both the ESS and CCO models, with the most savings being made through a CCO. It was estimated that Opex savings ranging between 2 and 7.5% (exclusive of FTE savings and inclusive of project synergies) should be achievable through the formation of a CCO. The engineering analysis highlighted the following areas where cost savings could be made:

- Rationalisations and reprioritisation of routine tasks
- Rationalisation of Asset management inventory and data collection
- Consolidation of common services
- Deferment of investment through strategic solutions
- Deferment of maintenance activities

Details around the Opex savings are provided in the main business case analysis report.

Capital Costs

The engineering assessment identified under the CCO model it is anticipated that Capex savings ranging between 3.2% and 9.1% can be achieved with base Capex savings of approximately $169 million. These savings include savings from potential project synergies ($50 million).

Other benefits associated with project synergies:

- Net Capex savings of $50 million for the first 30 years for water and wastewater
- Improved resilience, better risk profile
- Consolidated water allocation
- Improved disaster management
- Savings on Resource Consent costs and compliance
- Lower monitoring cost
- Level of service improvements around pressure, security of supply and potential for providing firefighting flows.
- Capacity to meet growth and economic development.

Under the ESS model it is anticipated that Capex and Opex savings of 1.5% can be achieved, savings from project synergies are unlikely to be as significant under the ESS model.

The business case for water services assumes that a CCO would start operations at the beginning of year 3 of the 30 year forecast period and hence the business case refers to 28 year forecasts

Confidential

Capex savings anticipated for each scenario are shown in the table below:

	CCO				
	Status Quo	Max Spend	Base Spend	Min Spend	ESS
Water Supply 30 year Budget	$1,183.3M	$1,162.9M	$1,130.5M	$1,092.1M	$1,165.5M
Waste Water 30 year Budget	$1,173.0M	$1,110.0M	$1,079.0M	$1,042.4M	$1,155.5M
Storm Water 30 year Budget	$409.4M	$403.2M	$392.0M	$378.7M	$403.2M
Total 3 Water Services 30 year Budget	**$2,765.7M**	**$2,676.1M**	**$2,601.4M**	**$2,513.1M**	**$2,724.2M**
Total 3 Water Services 30 year Savings	**$0.0K**	**$89.5M**	**$164.3M**	**$252.6M**	**$41.5M**
Total 3 Water Services 30 year %Savings	**0.0%**	**3.2%**	**5.9%**	**9.1%**	**1.5%**
Total Excluding Storm 30 year Budget	$2,356.3M	$2,272.9M	$2,209.4M	$2,134.5M	$2,321.0M
Total Excluding Storm 30 year Savings	$0.0K	$83.4M	$146.9M	$221.9M	$35.3M
Total Excluding Storm 30 year %Savings	0.0%	3.5%	6.2%	9.4%	1.5%

Options analysis

An analysis considering the options (CCO, ESS and status quo) covered the services to be provided across the sub region under each scenario being; Operation and maintenance, Capital works program, renewals, network asset and growth planning and water education. The analysis showed that while the ESS model may provide improvements over the status quo, a CCO will be more strategically focussed and accountable for service delivery. Under an ESS model there is still the ability for individual Councils to influence service delivery through a short term or less strategic view. For the key benefits of; lower Capex/Opex, improved resilience, improved asset management and economic development opportunities to be realised a CCO option has been identified as the best delivery model.

Our analysis has identified that the delivery of Storm Water Services, given its association with roading and urban planning, is best delivered as a contracted service (if provided through a CCO) or remains with each individual Council if the COO option was not pursued..

Case Studies and Benchmarking

The case studies presented have provided further evidence around the improvements that can be realised through the CCO option along with the magnitude of Capex and Opex savings potential. The benchmarking analysis has shown that a consolidated CCO arrangement provides a more strategically focussed organisation that is better equipped to realise improved performance with asset management systems and improved efficiency with service delivery.

The case studies detailed for Watercare, TasWater, Scottish Water and UK organisations all show that significant savings have resulted through the establishment of CCOs or organisations with a similar structure. In these examples, target savings range between 3% and 25% for Opex and Capex. Other benefits also include:

- improved performance for the water and wastewater services,
- improved compliance,
- Reduction of customer billing compared to original forecast.

Confidential

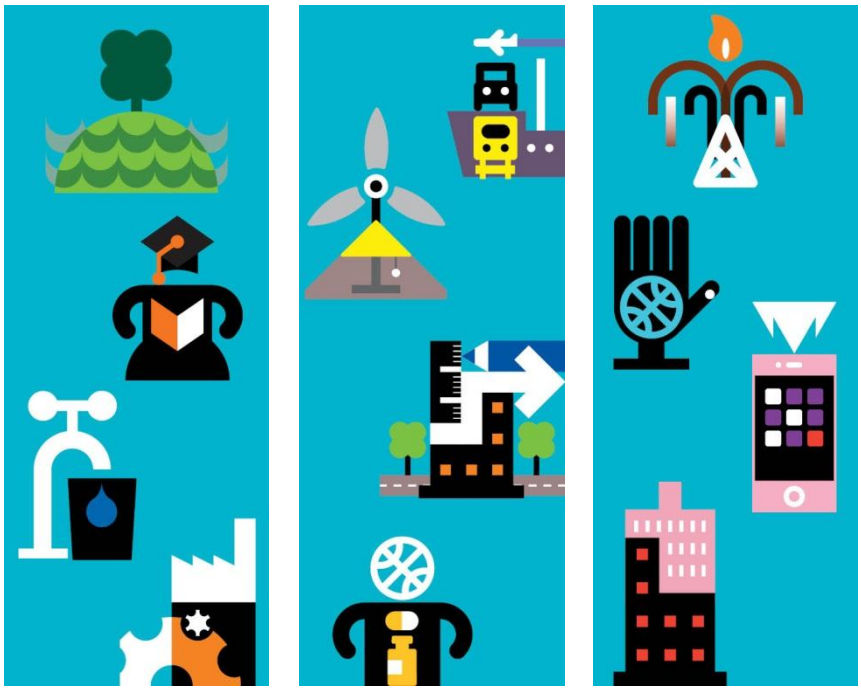
Source	Summary of Capex and Opex Savings
New Zealand – Watercare Case Study	Achieved savings of 2% of operating expenditure through efficient procurement in 2011/12.
	Achieved operating expense 4% below budget as a result of labour cost savings, lower asset operating costs and reduced other costs.
	Achieved $104million cost efficiency across the region between 2010 and 2012 (approximately 20% savings of the capital work programme).
	All savings achieved in addition to any previous savings realised by the CCOs established in the Auckland Region prior to the Auckland amalgamation (e.g. Metrowater and Manukau Water)
New Zealand – Wellington Water Case Study	Delivered over $3.8million savings in eight years.
	Wellington Water anticipated savings of $5–$7million a year.
Australia – Tasmania Case Study	Target savings of $7million per annum through standardisation of processes and procedures, removal of duplication and reduction in employee numbers (approximately 3% of total expenditure).
	All savings achieved in addition to any previous savings realised by the four water corporations established in Tasmania prior to the transition to TasWater.
Scotland – Scottish Water Case Study	Achieved 25% (£71m Opex and £494m Capex) savings within the first 4 years of their existence.
	Achieved 20% savings for Opex and 21.5% savings for Capex within the first 2 years.
	Target of 22% savings over the capital programme.
England - Benchmarking	Savings anticipated for a CCO model up to 3% per annum (this means a further 3% reduction form year Y to year Y+1) for the first 15 years, stepping down to 2% per annum for 10 years and then 1% per annum after that.
	Savings anticipated for the ESS model up to 1.5% per annum (this means a further 1.5% reduction form year Y to year Y+1) for the first 15 years, stepping down to 1% per annum for 10 years and then 0.5% per annum after that.

The Wellington Water case study has shown that while benefits can be realised under a shared service model these fall short from what can be achieved under a CCO delivery model.

Confidential

APPENDIX 12: COUNCIL IMPACTS TABLE

CCO ESTABLISHMENT IMPACT ON COUNCILS	HCC	WDC	WPDC	Total
Total Savings				
Total Savings - Years 1 -10 ($m)	52.3	28.1	26.7	107.1
Total Savings - Year 1 -28 ($m)	282.1	105.5	80.8	468.4
Indicative Water and Wastewater Customer Savings				
Year 1 -10 (% below Status Quo)	6.7%	8.7%	8.1%	
Annual Savings per Customer ($ including GST)	38	106	68	
Inputs into CCO				
Shareholding in CCO	63.6%	17.3%	19.1%	100.0%
Fixed Assets Transferred to CCO ($m July 2016)	667.1	198.7	162.6	1,028.4
Fixed Assets transferred to CCO as % of Total Council Assets	20%	12%	13%	
Debt Transferred to CCO ($m July 2016)	109.6	47.3	(4.9)	152.0
Debt Transferred to CCO as % of Total Council Debt	26.3%	70.6%	NA	
Ratio of Water Opex/Total Council Opex	17.2%	9.6%	19.3%	
Current % of Sub-Regional Water Volumes	57.6%	19.7%	22.7%	100.0%
Current % of Sub-Regional Population	57.3%	25.1%	17.6%	100.0%
Post CCO Establishment: Key Council Financial Ratios				
Debt / Revenue	194%	50%	45%	
Interest Cover	2.9	20.6	11.8	
Gearing - Debt / Equity	11%	3%	2%	
Stranded Overheads and Future Costs				
Residual Stranded Overheads - Reimbursed by CCO	Yes	Yes	Yes	
Ongoing Monitoring & Planning Costs - Reimbursed by CCO	$200,000 p.a.	$200,000 p.a.	$200,000 p.a.	$600,000 p.a.



Business Case Analysis for Water Services

Engineering Assessment and Evaluation

May 2015

Hamilton, Waipa and Waikato Councils

Waikato District Council

Waipa District Council

Hamilton City Council
Te kaunihera o Kirikiriroa

Mott MacDonald

Business Case Analysis for Water Services

Engineering Assessment and Evaluation

May 2015

Hamilton, Waipa and Waikato Councils

Mott MacDonald, L1, 23 Union Street, Auckland 1010, New Zealand
PO Box 37525, Auckland 1151, New Zealand
T +64 (0)9 374 1599 **W** www.mottmac.com

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
A	March 2015	Nasrine Tomasi Sarah Watson	Sarah Watson	Steve Couper	Working Draft
B	April 2015	Nasrine Tomasi Sarah Watson Ed Ptolomey Steve Couper	Drew Quarrier	Ed Ptolomey	Final Draft
C	May 2015	Nasrine Tomasi Sarah Watson Ed Ptolomey Steve Couper	Drew Quarrier	Ed Ptolomey Steve Couper	Final

Information Class: Standard

Contents

Executive Summary

Key Findings

The findings from the Engineering analysis carried out as part of this review support the formation of a Council Controlled Organisation (CCO) based on the following:

- It will facilitate the ability to effectively manage and deliver the investment programme of work for the next 30 years.
- It will enable the realisation of cost savings in capital and operational expenditure.
- It will facilitate an increase level of resilience security of supply.
- It will provide a solid foundation to address the future growth and economic development challenge.
- It will provide more opportunity to strategically manage assets where there are interdependencies.
- It will provide the platform to deliver a high level of service through a centre of excellence.

While the Enhanced Shared Services (ESS) model may provide some improvement to the status quo the analysis has shown that it will fall short of delivering what is capable under a CCO model.

Analysis approach

The approach adopted to consider the case for change through the evaluation of the Status Quo, ESS and an asset owning CCO included both qualitative and quantitative analysis and evaluation along with consideration of the challenges with the delivery of water, wastewater and storm water services.

Review Work

Review of the asset management and other data provided allowed for an understanding of the differences and similarities with the delivery of the water services across the three organisations. Differences in the level of service provided and compliance were noted between the three organisations along with the associated future challenges with meeting compliance requirements. A key theme noted is the challenge with delivering a compliant service across less densely populated areas. However each of the three organisations has projects planned to improve or maintain their level of compliance within the 30 year planning horizon.

Growth and Future demand

The forecast growth in demand to 2045 is approximately a 40% increase over the current demand. The individual Councils have planned to meet the future demand, however, as a CCO there would be significant benefits around strategic planning, resilience improvements and efficient delivery of an extensive (growth focussed) capital works programme. The CCO will also allow for improved and consolidated conservation and renewals program over the status quo and ESS approach. The improvements would be realised through economies of scale, a centre of excellence and organisational independence from the parent Councils.

Operational Costs

The combined average operational expenditure of all three councils is currently circa $47.6 million per year (based on 2015/16 projections). Given the synergies associated with activities carried out by all three councils in this area considerable opportunities exist to deliver cost savings through both the ESS and CCO models, with the most savings being made through a CCO. It was estimated that Opex savings ranging between 2 and 7.5% (exclusive of FTE savings and inclusive of project synergies) should be achievable through the formation of a CCO. The engineering analysis highlighted the following areas where cost savings could be made:

- Rationalisations and reprioritisation of routine tasks
- Rationalisation of Asset management inventory and data collection
- Consolidation of common services
- Deferment of investment through strategic solutions
- Deferment of maintenance activities

Details around the Opex savings are provided in the main business case analysis report.

Capital Costs

The engineering assessment identified under the CCO model it is anticipated that Capex savings ranging between 3.2% and 9.1% can be achieved with base Capex savings of approximately $169 million. These savings include savings from potential project synergies ($50 million).

Other benefits associated with project synergies:

- Net Capex savings of $50 million for the first 30 years for water and wastewater
- Improved resilience, better risk profile
- Consolidated water allocation
- Improved disaster management
- Savings on Resource Consent costs and compliance
- Lower monitoring cost
- Level of service improvements around pressure, security of supply and potential for providing firefighting flows.
- Capacity to meet growth and economic development.

Under the ESS model it is anticipated that Capex and Opex savings of 1.5% can be achieved, savings from project synergies are unlikely to be as significant under the ESS model.

The business case for water services assumes that a CCO would start operations at the beginning of year 3 of the 30 year forecast period and hence the business case refers to 28 year forecasts

Capex savings anticipated for each scenario are shown in the table below:

		CCO			
	Status Quo	Max Spend	Base Spend	Min Spend	ESS
Water Supply 30 year Budget	$1,183.3M	$1,162.9M	$1,130.5M	$1,092.1M	$1,165.5M
Waste Water 30 year Budget	$1,173.0M	$1,110.0M	$1,079.0M	$1,042.4M	$1,155.5M
Storm Water 30 year Budget	$409.4M	$403.2M	$392.0M	$378.7M	$403.2M
Total 3 Water Services 30 year Budget	**$2,765.7M**	**$2,676.1M**	**$2,601.4M**	**$2,513.1M**	**$2,724.2M**
Total 3 Water Services 30 year Savings	**$0.0K**	**$89.5M**	**$164.3M**	**$252.6M**	**$41.5M**
Total 3 Water Services 30 year %Savings	**0.0%**	**3.2%**	**5.9%**	**9.1%**	**1.5%**
Total Excluding Storm 30 year Budget	$2,356.3M	$2,272.9M	$2,209.4M	$2,134.5M	$2,321.0M
Total Excluding Storm 30 year Savings	$0.0K	$83.4M	$146.9M	$221.9M	$35.3M
Total Excluding Storm 30 year %Savings	0.0%	3.5%	6.2%	9.4%	1.5%

Options analysis

An analysis considering the options (CCO, ESS and status quo) covered the services to be provided across the sub region under each scenario being; Operation and maintenance, Capital works program, renewals, network asset and growth planning and water education. The analysis showed that while the ESS model may provide improvements over the status quo, a CCO will be more strategically focussed and accountable for service delivery. Under an ESS model there is still the ability for individual Councils to influence service delivery through a short term or less strategic view. For the key benefits of; lower Capex/Opex, improved resilience, improved asset management and economic development opportunities to be realised a CCO option has been identified as the best delivery model.

Our analysis has identified that the delivery of Storm Water Services, given its association with roading and urban planning, is best delivered as a contracted service (if provided through a CCO) or remains with each individual Council if the COO option was not pursued..

Case Studies and Benchmarking

The case studies presented have provided further evidence around the improvements that can be realised through the CCO option along with the magnitude of Capex and Opex savings potential. The benchmarking analysis has shown that a consolidated CCO arrangement provides a more strategically focussed organisation that is better equipped to realise improved performance with asset management systems and improved efficiency with service delivery.

The case studies detailed for Watercare, TasWater, Scottish Water and UK organisations all show that significant savings have resulted through the establishment of CCOs or organisations with a similar structure. In these examples, target savings range between 3% and 25% for Opex and Capex. Other benefits also include:

- improved performance for the water and wastewater services,
- improved compliance,
- Reduction of customer billing compared to original forecast.

Source	Summary of Capex and Opex Savings
New Zealand – Watercare Case Study	Achieved savings of 2% of operating expenditure through efficient procurement in 2011/12.
	Achieved operating expense 4% below budget as a result of labour cost savings, lower asset operating costs and reduced other costs.
	Achieved $104million cost efficiency across the region between 2010 and 2012 (approximately 20% savings of the capital work programme).
	All savings achieved in addition to any previous savings realised by the CCOs established in the Auckland Region prior to the Auckland amalgamation (e.g. Metrowater and Manukau Water)
New Zealand – Wellington Water Case Study	Delivered over $3.8million savings in eight years.
	Wellington Water anticipated savings of $5–$7million a year.
Australia – Tasmania Case Study	Target savings of $7million per annum through standardisation of processes and procedures, removal of duplication and reduction in employee numbers (approximately 3% of total expenditure).
	All savings achieved in addition to any previous savings realised by the four water corporations established in Tasmania prior to the transition to TasWater.
Scotland – Scottish Water Case Study	Achieved 25% (£71m Opex and £494m Capex) savings within the first 4 years of their existence.
	Achieved 20% savings for Opex and 21.5% savings for Capex within the first 2 years.
	Target of 22% savings over the capital programme.
England - Benchmarking	Savings anticipated for a CCO model up to 3% per annum (this means a further 3% reduction form year Y to year Y+1) for the first 15 years, stepping down to 2% per annum for 10 years and then 1% per annum after that.
	Savings anticipated for the ESS model up to 1.5% per annum (this means a further 1.5% reduction form year Y to year Y+1) for the first 15 years, stepping down to 1% per annum for 10 years and then 0.5% per annum after that.

The Wellington Water case study has shown that while benefits can be realised under a shared service model these fall short from what can be achieved under a CCO delivery model.

1 Introduction

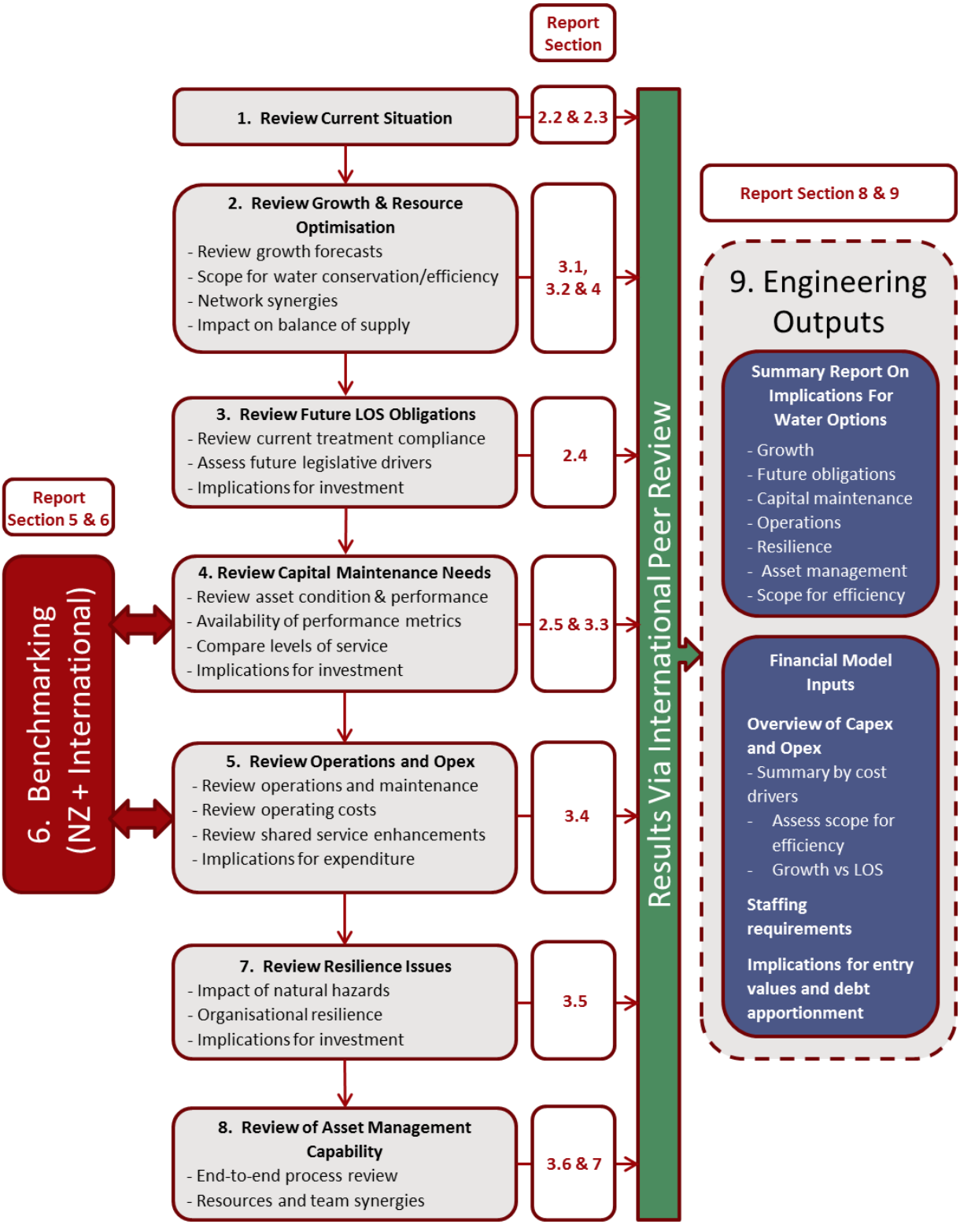
The objectives of the engineering assessment were as follows:

- Provide an analysis of existing water and waste water assets and services across each of the three communities, including:
  - Analysis of the different standards and scale of networks across each of the three communities
  - Analysis of the different levels of service provided (and underlying drivers)
  - Evaluation of the respective forecast capital works (and potential for savings)
  - Analysis of the operational implications of managing the network
- Provide an overview of the advantages and disadvantages of an enhanced shared services model, which adds additional services to the model without going as far as a CCO structure, and comparing this to the CCO structure.
- Evaluate the delivery of storm water services and whether these are appropriately delivered via the CCO structure, the parent councils or an alternative structure.
- Identify the asset-related and service issues and challenges associated with the water, wastewater and storm water services and assess the implications for future long-term investment and operating costs for both the combined entity and the individual councils.
- Utilise benchmarking (using national and international benchmarks) in order to determine the scope for efficiency in capital and operating costs whilst achieving the required service objectives.
- Provide an analysis of whether the Engineering Assessment supports the strategic case for change or no change.

The analysis work completed has been used to evaluate the differences between status quo, enhanced shared services and a full asset owning utility as an option. It identifies the asset-related service issues and challenges associated with the water, wastewater and storm water services. It incorporates an assessment of the implications for future long-term investment and operating costs for both the combined entity and the individual councils including the appropriate vehicle for the management and delivery of storm water.

This assessment should be read as an addendum to the main business case analysis. It has been used to determine the capital and operating cost inputs for the financial modelling and the economic case for change from the current water service delivery model. By defining the challenges faced jointly and individually by the councils, the assessment considers the strategic case for change or no change. Through benchmarking (using national and international benchmarks) the technical assessment also determines the scope for further efficiency in capital and operating costs whilst achieving the required service objectives.

An overview for the methodology adopted is presented below.


Report Section
1. Review Current Situation
2.2 & 2.3
2. Review Growth & Resource Optimisation
- Review growth forecasts
- Scope for water conservation/efficiency
- Network synergies
- Impact on balance of supply
3.1, 3.2 & 4
3. Review Future LOS Obligations
- Review current treatment compliance
- Assess future legislative drivers
- Implications for investment
2.4
Report Section 5 & 6
6. Benchmarking (NZ + International)
4. Review Capital Maintenance Needs
- Review asset condition & performance
- Availability of performance metrics
- Compare levels of service
- Implications for investment
2.5 & 3.3
5. Review Operations and Opex
- Review operations and maintenance
- Review operating costs
- Review shared service enhancements
- Implications for expenditure
3.4
7. Review Resilience Issues
- Impact of natural hazards
- Organisational resilience
- Implications for investment
3.5
8. Review of Asset Management Capability
- End-to-end process review
- Resources and team synergies
3.6 & 7
Results Via International Peer Review
Report Section 8 & 9
9. Engineering Outputs
Summary Report On Implications For Water Options
- Growth
- Future obligations
- Capital maintenance
- Operations
- Resilience
- Asset management
- Scope for efficiency
Financial Model Inputs
Overview of Capex and Opex
- Summary by cost drivers
- Assess scope for efficiency
- Growth vs LOS
Staffing requirements
Implications for entry values and debt apportionment

2 Review of Existing Assets

2.1 Introduction

The three organisations provided to the study team substantial data and information relating to their current operations and planning (including projected capital spend) over the next 30 years. Any relevant information for the evaluation has been reviewed, rationalised and summarised in this section.

The objective of this review was to provide an analysis of the existing water, wastewater and stormwater assets and services in order to identify similarities and differences across the three Councils. This was completed with a view to highlight potential challenges and synergies related to the implementation of an ESS or a CCO model.

More specifically, this section aims at:

- Providing a better understanding of the different standards and scale of networks across each of the three communities.
- Comparing the different targeted levels of service for each Council and assessing the level of compliance currently achieved in each of the three communities.
- Identifying operational implications of managing the network under the three options considered.
- Identifying potential synergies (and potential for savings) in terms of capital works that could result from the establishment of a CCO.

2.2 At a Glance

The three Councils included as part of the study area have different characteristics which impact on the type of water services provided:

- Hamilton City Council is classified as a Metropolitan Council under the Local Government New Zealand classification. It is an urban centre with a high population density and centralised water services.

- Waipa District and Waikato District are classified as Provincial Councils under the Local Government New Zealand classification. These two Councils service a combination of rural and provincial schemes spatially scattered within the Council boundaries. This results in a larger number of water and wastewater treatment plants (of smaller capacity) to operate for these two Councils relative to Hamilton City Council. The rural nature of these districts also means a longer length of water main and sewer per connection relative to Hamilton City Council.

Table 2.1 below provides high level information enabling a basic comparison of the three water systems included in the study area.

Table 2.1: Basic Comparison of Councils

Comparison Parameters		2013/2014 Updated Figures		
		Hamilton	Waipa	Waikato
Population	**(2013 Census)**	147,290	46,400	64,910
Water	Residential water connections	49,869	10,915	13,352
	Number of schemes serviced	1	4	12
	Industrial/commercial water connections	5,471	357	Included in res
	Average water treated (m^3/day)	56,000	24,464	18,766
	Number of water treatment plants	1	6	10
	Number of pump stations	8	6	11
	Number of reservoirs	7 operational	15	28
	Volume of water normally stored (m^3)	60,300		
	Total treated storage capacity (m^3)	102,900	25,600	17,616
	Length of water mains (km)	1,135	558.9	692
Wastewater	Residential wastewater connections	49,370	10,689	9,682
	Number of schemes serviced	1	2	10
	Industrial/commercial wastewater connections	4,818	829	349
	Average wastewater treated (m^3/day)	46,000	8767	7,964
	Number of wastewater treatment plants	1	2	9
	Number of pump stations	129	50	81
	Length of wastewater mains (km)	797	248.1	262
Stormwater	Residential stormwater connections	42,388	11,899	16,072
	Number of schemes serviced	20 catchments	6	15
	Industrial/commercial stormwater connections	4,254	1058	974
	Number of pump stations	0	0	10
	Number of detention dams / ponds / wetlands	19	7	15
	Length of stormwater mains (km)	657	141.6	108

2.3 Current Situation

2.3.1 Hamilton City Council

- **Water:** Hamilton City Council supplies water to approximately 49,869 residential properties and 5,471 industrial connections through 1,135km of pipes. Based on recent condition assessment studies mentioned in the latest Asset Management Plan, most assets are in satisfactory condition. A single water treatment plant provides “A grade “water based on New Zealand Drinking Water Standards 2005 revised 2008 (NZDWS 2005 rev 2008) to the City. The average water demand is 56MLD peaking to 90MLD during the summer period. Approximately 50% growth is anticipated by 2063. This is Hamilton’s main challenge and will require treatment plant and network upgrades to meet the future demand and cover the forecasted extent of the city. Demand management strategies are currently

being implemented: they include water restrictions during summer periods, water metering for industrial users and the establishment of a leak detection programme across the City.

- **Wastewater:** Hamilton City Council provides wastewater services to approximately 49,370 residential properties and 4,818 industrial customers through 797km of pipes. Based on recent condition assessment studies assets are in satisfactory condition. The single wastewater treatment plant servicing Hamilton City is always compliant with New Zealand health and safety legislation although the effluent quality is variable and upgrades are planned to maintain compliance levels in the future. The network is capable of conveying normal flows but some capacity issues occur during wet weather flows. These capacity issues are planned to be addressed by increasing the capacity of critical wastewater pump stations and upgrading the current WWTP (installation of new wet weather treatment facility). Other investments planned in the next 30 years are related to the 50% growth anticipated by 2063. This will require treatment plant and network upgrades to meet the future demand and cover the forecasted extent of the city. Demand management strategies are currently being implemented: they include the reduction of potable water use and the establishment of an infiltration and inflow reduction programme across the City.

- **Stormwater:** Hamilton City Council provides stormwater services to approximately 42,388 residential properties and 4,254 industrial customers through 650km of pipes. Based on recent condition assessment studies assets are in satisfactory condition. The performance of the stormwater system is currently being assessed to quantify assets capable to convey a 1 in 2 year, 1 in 5 year and 1 in 10 year storm event. Future growth is Hamilton's main challenge in terms of stormwater and will require network upgrades to meet increased levels of imperviousness and to cover the future extent of the city.

2.3.2 Waipa District Council

- **Water:** Waipa District Council supplies water to approximately 10,915 residential properties and 357 industrial customers through 559km of pipes. Waipa has a different user base than Hamilton and Waikato, with 40% of the water used going to industry. This benefits the residential users by having lower volumetric rates ($/m^3). Condition assessment studies based on installation dates returned a large number of assets with less than 10 years of theoretical remaining life. Further investigations are currently underway to provide more accurate asset condition information. The Pukerimu scheme was found to be made of poor quality PVC pipes and is currently prioritised for renewal. Six water treatment plants supply treated water to the Waipa schemes. Upgrades are planned to improve the performance of these WTPs in order to meet NZDWS 2005 rev 2008. Further upgrades and capital works will also address WTPs and network capacity issues. While some capacity issues are reported for current conditions, most of them are actually related to forecasted growth. Demand management strategies are planned in the future with the implementation of universal water metering.

- **Wastewater:** Waipa District Council provides wastewater services to approximately 10,689 residential properties and 829 industrial customers through 248km of pipes. Condition assessment studies based on installation dates returned a large number of assets with less than 10 years of theoretical remaining life. Further investigations based on CCTV and site inspections have highlighted infiltration issues in Te Awamutu and Cambridge. Renewals are planned to overcome issues related to ageing assets. Two

WWTPs treat the Waipa schemes wastewater flows. Upgrades are planned at these two WWTPs to cater for growth, meet levels of service and comply with resource consent conditions. The installation of water meters is anticipated to reduce wastewater flows.

- **Stormwater:** Waipa District Council provides stormwater services to approximately 11,899 residential properties and 1,058 industrial customers through 142km of pipes. Based on recent condition assessment studies assets are in satisfactory condition and do not require immediate replacement. Future investments are evenly split between renewals necessary to replace ageing infrastructure and upgrades required to meet growth.

2.3.3 Waikato District Council

- **Water:** Waikato District Council supplies water to approximately 13,352 properties through 692km of pipes. Based on recent condition assessment studies assets are generally young and in satisfactory condition. Further assessments are planned to be implemented to report on actual conditions and performance of water supply assets. In total, 10 WTPs supply treated water to the Waikato District schemes. Upgrades are planned to improve the performance of some of these WTPs in order to meet NZDWS 2005 rev 2008 and future demands. Further upgrades and capital works will also address current lack of storage, fire flow issues and network extensions to service growth. Demand management strategies are planned in the future with the implementation of universal water metering.

- **Wastewater:** Waikato District Council provides wastewater services to approximately 9,682 residential properties and 349 industrial customers through 262km of pipes. Based on recent condition assessment studies assets are generally young and in satisfactory condition. Further assessments are planned to be implemented to report on actual conditions and performance of wastewater assets. In total, 10 WWTPs treat the Waikato District wastewater flows. Upgrades are planned to improve the performance of some of these WWTPs in order to meet consent conditions. Further capital works include network extensions to service growth and pump station emergency storage.

- **Stormwater:** Waikato District Council provides stormwater services to approximately 16,072 residential properties and 974 industrial customers through 108km of pipes. Based on recent condition assessment studies assets are generally young and in satisfactory condition. Further assessments will be implemented to report on actual conditions and performance of stormwater assets. 2D models were developed to assess stormwater performance in critical catchments. Upgrades are planned to improve the levels of service in Raglan and to meet growth in Pokeno, Tuakau and Tamahere.

2.4 Compliance

2.4.1 Water Compliance Results

Drinking Standards NZ and water gradings were used as a common reference to compare water supply compliance results across the three Councils. It should be noted that water gradings are not compulsory, Waipa is not seeking to get their water supplies graded and is using other parameters to measure the performance of their water supply. Therefore the grading results shown below may not provide an accurate reflection on the performance of the Waipa schemes.

Some disparities can be seen across the three councils in terms of levels of compliance for water. Hamilton Council meets the Drinking Standards NZ 2005 requirements and supplies A Grade water to its customers. However the levels of compliance and grading achieved in Waipa and Waikato are variable. Some communities have either their water source and plant grades or their distribution zone grades showing unacceptable level of risk (grade E or e).Compliance issues are addressed in the Councils Long Term Plans. Each of the three organisations has projects planned to improve or maintain their level of compliance within the 30 year planning horizon.

Table 2.2 below summarises compliance 2013/14 results of each community included in the study area against the Drinking Standards NZ 2005. In this table population numbers are based on Drinking-water Standards records and may not match the 2013 census data previously used in this report.

Table 2.2: 2013/14 Drinking Standard NZ 2005 Compliance Results

Council	Community	Population	Bacteria Achieved	Protozoa Achieved	Chemical Achieved	Grading
Hamilton	Hamilton City	130,813	Yes	Yes	Yes	Aa
	Greenhill Road	17	Reporting not required			Au
	Powells Road	20	Reporting not required			Au
	SH26, Morrinsville Rd	57	Reporting not required			Au
	Ruakura/Ryburn Rd	151	Yes	Yes	Yes	Au
	Temple View	1,413	Yes	Yes	Yes	Aa
Waipa	Cambridge	13,368	Yes	**No**	Yes	Ungraded
	Karapiro Village	132	Yes	Yes	Yes	Ungraded
	Kihikihi	2,000	Yes	Yes	Yes	Ab
	Ohaupo	468	Yes	Yes	Yes	Eb
	Pukerimu Rural	3,278	Yes	Yes	Yes	Ed
	Pirongia	1,500	Yes	**No**	Yes	Uc
	Te Awamutu	9,165	Yes	**No**	Yes	Ub
Waikato	Huntly	7,210	Yes	**No**	**No**	Eb
	Rotongaro	130	Yes	**No**	**No**	Ed
	Horotiu	459	Yes	**No**	**No**	Ee
	Ngaruawahia	5,691	Yes	**No**	**No**	Ee

Council	Community	Population	Bacteria Achieved	Protozoa Achieved	Chemical Achieved	Grading
	North Western District	115	Yes	Yes	Yes	Au
	Pokeno	519	**No**	**No**	Yes	Ungraded
	Raglan	3,187	**No**	**No**	Yes	Ed
	Southern Districts	5,466	Yes	Yes	Yes	Au
	Hopuhopu	200	Yes	**No**	Yes	Ee
	Taupiri	529	Yes	**No**	Yes	Ee
	Te Kauwhata	1,410	**No**	**No**	Yes	Ed
	Whangamarino	739	Yes	**No**	Yes	Ed
	Tuakau North	823	**No**	**No**	Yes	ungraded
	Tuakau South	3,119	**No**	**No**	Yes	ungraded

Source: Annual Report on Drinking-water Quality 2013–2014 and http://www.drinkingwater.esr.cri.nz/

The Drinking Water grading system is a two-letter grading, such as Aa, Cb, Ed, etc. The capital letter (A1, A, B, C, D or E) represents the grade of the water coming into the zone (i.e. source quality and treatment) while the lower-case letter (a1, a, b, c, d or e) indicates the quality of the water received at the customer's gate. Typically, if one tends to be high (A or B), so will be the other (a or b), but any combination is possible. Table 2.3 and Table 2.4 below provide further description for each grade.

Table 2.3: Source and Plant Grading (A1 to E)

Grade	Description
A1	Completely satisfactory, negligible level of risk, demonstrably high quality
A	Completely satisfactory, extremely low level of risk
B	Satisfactory, very low level of risk when the water leaves the treatment plant.
C	Marginally satisfactory, low level of microbiological risk when the water leaves the treatment plant, but may not be satisfactory chemically.
D	Unsatisfactory level of risk
E	Unacceptable level of risk
U	Ungraded

Table 2.4: Distribution Grading (a1 to e)

Grade	Description
a1	Completely satisfactory, negligible level of risk, demonstrably high quality; meets Aesthetic Guidelines and has ISO 9001:2000 accreditation
a	Completely satisfactory, extremely low level of risk
b	Satisfactory, very low level of risk
c	Marginally satisfactory, moderately low level of risk
d	Unsatisfactory level of risk
e	Unacceptable level of risk
u	Ungraded

2.4.2 Wastewater Compliance Results

Some disparities can be seen across the three councils in terms of levels of compliance for wastewater. The Hamilton and Waipa WWTPs are generally compliant with consent conditions and only show minor breaches. However a number of WWTPs located in the Waikato District Council have shown inadequate effluent quality in their last audit.

Wastewater compliance issues are addressed in the Councils Long Term Plans. The three Councils Have projects planned to improve or maintain their level of compliance in their 30 year expenditure plan.

Table 2.5 below summarises compliance 2013/14 results of each community included in the study area based on the Three Waters Assets and Services - results of a survey of council provision NZIER 2014.

Table 2.5: 2013/14 Wastewater Compliance Results

Council	Overall Result	Scheme	Summary / Comments
Hamilton	Partial Compliance	Hamilton	Effluent quality inadequate at times. 95% of time compliant with E. coli limits. Plant upgrades currently planned to improve/maintain level of compliance in the future.
Waipa	Partial Compliance	Cambridge	Partial compliance. Future works planned will ensure more consistent compliance. The upgrades mean that the WWTP will be compliant in 2017.
		Te Awamutu	Mostly compliant. Breaches were due to either process or equipment failure. These were rectified by the operators. A plant upgrade is currently being planned.
Waikato	Partial Compliance	Meremere	Partial compliance. Effluent quality inadequate. A plant upgrade is currently being planned.
		Ngaruawahia	Partial compliance. Effluent quality inadequate. A plant upgrade is currently being planned.
		Raglan	Partial compliance. Effluent quality inadequate. A plant upgrade is currently being planned.
		Huntly	Partial compliance. Effluent quality inadequate but likely to be complying 2013/2014.
		Te Kauwhata	Full compliance
		Tauwhare Pa	Full compliance
		Maramarua	Mostly compliant. A plant upgrade is currently being planned.
		Te Kowhai	Partial compliance. Effluent quality inadequate. A plant upgrade is currently being planned.
		Matangi	Partial compliance. Effluent quantity inadequate. A plant upgrade is currently being planned.

Source: Three Waters Assets and Services - results of a survey of council provision NZIER 2014, tables 57 & 59. Waikato District Council, Waipa District Council and Hamilton City Council Annual Reports 2013/2014

2.4.3 Compliance Summary

The CCO and ESS options will provide more strategic focus on the implementation of the joined LTP's and hence should address any existing compliance issues. Unless the focus on full compliance shifts from its current position the Status Quo is likely to deliver short based on possible change in priorities.

The CCO is likely to have more strategic focus, established prioritisation along with the likelihood of an optimised capital structure.

The ESS model would require a joint LTP and strong leadership in order to address any conflicts of interest which may have an influence on prioritisation. For example water infrastructure fails in an area which has political influence. This might cause reputational issues but in accordance with the LTP and achieving compliance through prioritised investment should not attract any additional investment other than the normal repair.

2.5 Level of Service

2.5.1 Performance Metrics

The three Councils' targeted levels of service will be modified in the 2015-2025 long term plans to meet the Mandatory Performance Measures set by the Secretary for Local Government. The mandatory performance measures are set for water, wastewater and storm water. Following public consultation the Local Government rules were finalised in November 2013. They come into force on 30 July 2014 and the existing three councils have put measures in place to address the need. Local authorities have been required to incorporate the performance measures in the development of their new 2015-2025 long-term plans. The performance measures will therefore be reported against for the first time in the 2015/2016 annual reports.

This means that from 2015/2016 the metrics used to measure the performance of the three water services will be similar for each of the three Councils. Differences can be seen in the level of performance targeted from one Council to another. In most instances these differences seem to be related to the nature of each Council: for example at this stage (draft LTPs) the targeted median response time to get to site for urgent storm water call out is 1 hour in Hamilton against 2 hours in Waipa and 12 hours in Waikato. Hamilton is an urban centre that is compact and issues are faster to address when compared to Waipa and Waikato District Councils. The difference in the targeted levels of service may also provide a reflection of the current system performance for each Council. However it should be noted that some of these parameters have not been monitored in the past so the targets defined at this stage are likely to be Councils best estimates and will certainly be refined in the future.

Mandatory performance measures and level of performance targets for 2025 are summarised in Table 2.6 below.

Table 2.6: Mandatory Performance Measures

Sub Part	Performance Measure	Description	Draft 10 Year Targets		
			Hamilton	Waipa	Waikato
Water Supply	Safety of drinking water	The extent to which the local authority's drinking water supply complies with: • Part 4 of the drinking water standard (bacteria compliance criteria), and • Part 5 of the drinking water standards (protozoal compliance criteria).	• Compliance • Compliance	• Compliance • Compliance	• Compliance • 15 out 18 zones compliant
	Maintenance of the reticulation network	The percentage of real water loss from the local authority's network reticulation system (including a description of the methodology used to calculate this).	10%	12% to 20% depending on scheme	15% to 25% depending on scheme
	Fault response time	Where the local authority attends a call-out in response to a fault or unplanned interruption to its networked reticulation system, the following median response times measured: • Attendance for urgent call-outs: from the time that the local authority receives notification to the time that service personnel reach the site, and • Resolution of urgent call-outs: from the time that the local authority receives notification to the time that service personnel confirm resolution of the fault or interruption. • Attendance for non-urgent call-outs: from the time that the local authority receives notification to the time that service personnel reach the site, and • Resolution of non-urgent call-outs: from the time that the local authority receives notification to the time that service personnel confirm resolution of the fault or interruption.	 • <= 1 hr • <= 8 hrs • <= 5 days • <= 30 days	 • <= 2 hr • <= 6 hrs • <= 2 days • <= 10 days	 • <= 1 hr • <= 4 hrs • <= 1 days • <= 5 days
	Customer Satisfaction	The total number of complaints received by the local authority about any of the following: • drinking water clarity • drinking water taste • drinking water odour • drinking water pressure or flow • continuity of supply, and • the local authority's response to any of these issues Expressed per 1000 connections to the local authority's networked reticulation system.	<= 5	< = 20	< = 17
	Demand management	The average consumption of drinking water per day per resident within the territorial authority district.	<= 230L/pers/d for residential	185 to 250L/pers/d	<= 240L/pers/d
Sewerage and the treatment and disposal of sewage	System and adequacy	The number of dry weather sewerage overflows from the territorial authority's sewerage system, expressed per 1000 sewerage connections to that sewerage system.	<= 5	<= 5	<= 5
	Discharge compliance	Compliance with the territorial authority's resource consents for discharge from its sewerage system measured by the number of: • abatement notices • infringement notices	 • <= 1 • = 0	 • = 0 • = 0	 • <= 2 • <= 2

Sub Part	Performance Measure	Description	Draft 10 Year Targets		
			Hamilton	Waipa	Waikato
		• enforcement orders, and • convictions, Received by the territorial authority in relation those resource consents.	• = 0 • = 0	• = 0 • = 0	• <= 2 • = 0
	Fault response times	Where the territorial authority attends to sewerage overflows resulting from a blockage or other fault in the territorial authority's sewerage system, the following median response times measured: • Attendance time: from the time that the territorial authority receives notification to the time that service personnel reach the site, and • Resolution time: from the time that the territorial authority receives notification to the time that service personnel confirm resolution of the blockage or other fault.	• <= 1 hr • <= 8 hrs	• <= 2 hr • <= 6 hrs	• <= 1 hr • <= 6 hrs
	Customer satisfaction	The total number of complaints received by the territorial authority about any of the following: • sewage odour • sewerage system faults • sewerage system blockages, and • the territorial authority's response to issues with its sewerage system, Expressed per 1000 connections to the territorial authority's sewerage system.	<= 25	< 15	<= 25
Stormwater drainage	System adequacy	• The number of flooding events that occur in a territorial authority district. • For each flooding event, the number of habitable floors affected. Expressed per 1000 properties connected to the territorial authority's stormwater system.	• <= 1 • <= 1	• < 5 • < 10	• <= 0.2 • <= 0.2
	Discharge compliance	Compliance with the territorial authority's resource consents for discharge from its stormwater system, measured by the number of: • abatement notices • infringement notices • enforcement orders, and • convictions, Received by the territorial authority in relation those resource consents.	• <= 1 • = 0 • = 0 • = 0	• = 0 • = 0 • = 0 • = 0	• = 0 • = 0 • = 0 • = 0
	Response times	The median response time to attend a flooding event, measured from the time that the territorial authority receives notification to the time that service personnel reach the site.	<= 1 hr	<= 2 hrs	<= 12 hrs
	Customer satisfaction	The number of complaints received by a territorial authority about the performance of its stormwater system, expressed per 1000 properties connected to the territorial authority's stormwater system.	<= 5	< 10	<= 1

Source: http://www.dia.govt.nz/diawebsite.nsf/Files/Local-Government-Non-Financial-Performance-Measures-Signed-Rules/$file/Local-Government-Non-Financial-Performance-Measures-Signed-Rules.pdf

In addition to the Mandatory Performance Measures defined by Local Government, other parameters are monitored by each Council to assess the level of performance of the three water services. These parameters mainly include network performance indicators such as minimum pressure requirements or fire flow capability.

Gaps identified between the targeted levels of service and the actual system performance are addressed in the Councils Long Term Plans. The three Councils are anticipated to meet their targeted levels of service by the end of the 30 year expenditure plan.

2.5.2 Level of Service Summary

With the establishment of the Mandatory Performance Measures set by the Secretary for Local Government, all three Councils will report on the same performance metrics. This facilitates the option of moving to a CCO or EES model as common levels of service metrics will be required for these options.

Targeted levels of service will need to be harmonised across the three Councils to provide homogeneous services across the three Councils. At this stage the new level of service targets are still presented as draft targets and some parameters will be monitored for the first time this year, hence it is difficult to comment on the level of difference across the three Councils.

It should be noted that for some of the performance parameters Waipa and Waikato District Councils have defined different targeted levels of service for each of their schemes (e.g. bacteria and protozoa compliance or percentage of real water loss). A similar approach could be considered to ease the coordination of the three Councils level of service targets should a CCO or an ESS model be implemented.

3 Review of Existing Delivery - Options

3.1 Growth and Resource Optimisation

3.1.1 Growth Forecast

Based on recent population forecast studies[1], a 40% population increase is anticipated in the study area in the next 40 years. Most of the growth is planned to occur in the Waikato District (12%) and in Hamilton City (40%) in the next 40 years.

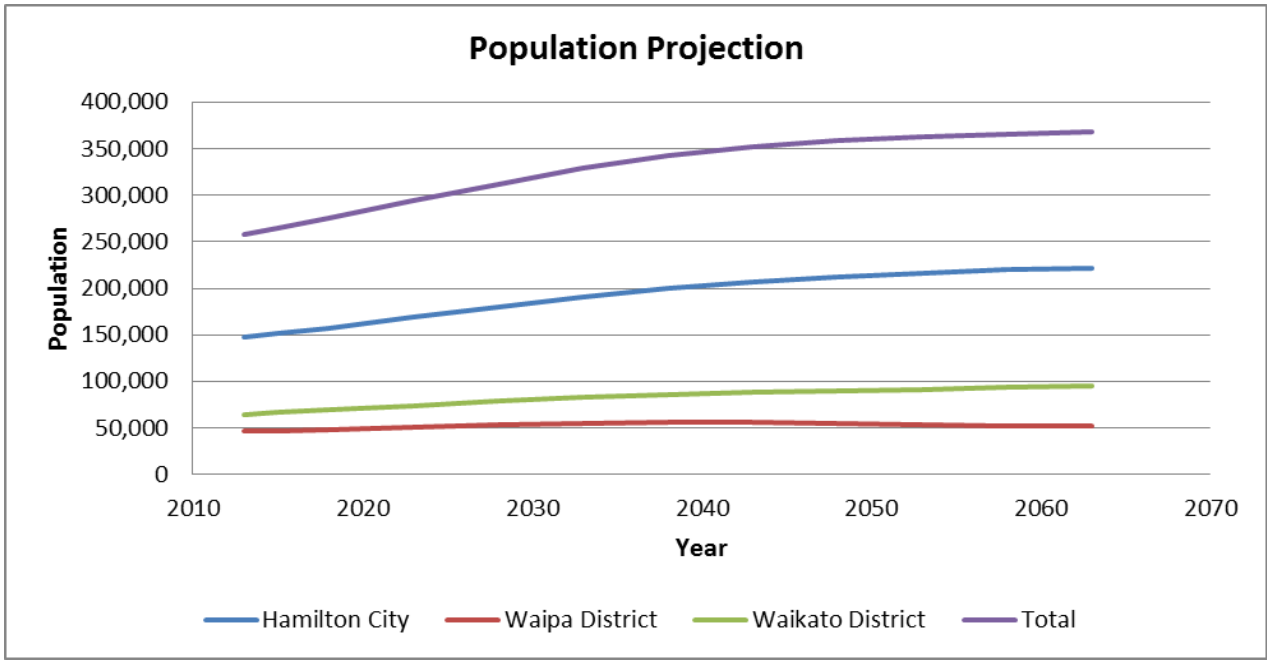
Population projections for the next 40 years are shown in Table 3.1 and in Figure 3.1 below:

Table 3.1: Population Projections

Location	2013	2018	2023	2028	2033	2038	2043	2048	2053	2063
Hamilton	147,290	157,563	168,900	180,340	190,744	199,672	207,058	212,864	216,937	221,390
Waipa	46,400	48,369	50,966	53,414	55,384	56,452	56,247	55,239	53,856	51,758
Waikato	64,910	69,126	73,861	78,513	82,733	86,078	88,456	90,266	91,867	94,862
Total	258,600	275,058	293,727	312,267	328,861	342,202	351,761	358,369	362,660	368,010

Source: Population Projections - NIDEA FP Demographic Analysis July 2014 (Medium Series)

Figure 3.1: Population Projections



Source: Population Projections - NIDEA FP Demographic Analysis July 2014

[1] Population Projections - NIDEA FP Demographic Analysis July 2014

The anticipated growth will have a significant impact on the three water services provided in the study area. Table 3.2 and Table 3.3 below detail future demands planned in the study area for water and wastewater. While most of the information was sourced from Asset Management Plans, some of the data displayed in these two tables was not readily available and had to be interpolated (interpolated values are shown in italic characters). Current values are for year 2015.

Table 3.2: Forecasted Water Demands

	Average Water Demand (m^3/day)				Peak Water Demand (m^3/day)			
	Current	2025	2035	2045	Current	2025	2035	2045
Hamilton	61,856	*71,134*[1]	*81,031*[1]	*90,928*[1]	100,000	115,000	131,000	147,000
Waipa	24,690	28,370	30,998	34,312	37,698	42,357	45,977	50,511
Waikato	20,969	24,578	27,741	29,883	30,995	36,444	41,198	44,380
TOTAL	107,515	124,082	139,770	155,123	168,693	193,801	218,175	241,891

Table 3.3: Forecasted Wastewater Flows

	Wastewater ADWF (m^3/day)				Wastewater PWWF (m^3/day)			
	Current	2025	2035	2045	Current	2025	2035	2045
Hamilton	40,003	*46,830*[2]	*57,250*[2]	*67,670*[2]	*224,640*	*263,050*[3]	*321,610*[3]	*380,170*[3]
Waipa	11,530	*13,470*[4]	*15,029*[4]	16,538	41,050	*46,723*[4]	*50,787*[4]	*55,186*[4]
Waikato	8,758	11,435	13,075	14,119	28,150	34,364	38,640	41,543
TOTAL	60,291	71,735	85,354	98,327	293,840	344,137	411,037	476,899

Note:

1. Hamilton's average potable water demand was only available for year 2013. Forecasted average water demands were extrapolated using the rate of increase in peak water demands.
2. Hamilton's wastewater average daily flows were only available for 2015, 2021 and 2061. Data was linearly interpolated between these dates.
3. Hamilton's wastewater PWWF were only available for 2013/14 conditions (139,823 m^3/day), while peak dry weather flows were available for 2021 and 2061. A wet weather factor of 4.3 was calculated based on the available data and data was then linearly interpolated between these dates.
4. Waipa wastewater flows were not available for years 2025 and 2035 and were linearly interpolated between provided horizons.

3.1.2 Summary of Growth Options

Hamilton, Waikato and Waipa must expand their network and upgrade their treatment works to meet future growth demands. As separate entities, either as the status quo or enhanced shared services, the future demand can be achieved. The timing of the investment is critical as efficiencies can be gained through bundling similar contracts or in some cases influencing the timing of the investment to maximise efficiencies. The CCO option would allow the ability to effectively manage a larger capital programme; it would also present opportunities for cost savings through economies of scale and enable strategic decisions to be made to improve resilience providing more flexibility and resilient options to meet the future demands.

3.2 Conservation Strategy

3.2.1 Water Conservation Strategy

All three Councils located in the study area have developed water conservation strategies aiming at keeping water and wastewater demand within an acceptable range. The following measures have been referenced in the Asset Management Plans:

- **Universal Metering:** Waikato and Waipa District Councils are currently rolling out the installation of meters for all their customers in order to reduce water demands (and indirectly wastewater flows). Hamilton has water meters installed for industrial customers.
- **Leak Detection:** Hamilton City Council and Waipa District Council are currently implementing a leak detection programme to reduce water losses though their networks.
- **Inflow and Infiltration Reduction:** Hamilton City Council and Waipa District Council are currently implementing an inflow and infiltration reduction programme to minimise wastewater flows.
- **Water Restrictions:** For the three Councils water restrictions (e.g. restricted time for use of residential sprinklers or sprinkler ban depending on the level of alert) have been implemented in the last five years during summer periods to reduce peak flows during the dry season.

3.2.2 Conservation Summary

The cost of water now and in the future is directly related to the availability of the raw product, the cost of treatment and transportation to the point of use. The activities which influence the future costs are detailed in the LTP's for each of the councils. All three councils have developed water conservation strategies aiming to keep demand within an acceptable level. Under the status quo these activities may all be delivered as set out in the plans. Under an ESS model there is an increased likelihood that a more strategic and hence more joined up approach will be applied to the policies and will deliver more effective solutions over time. This is mainly down to better planning and joined up thinking. Under the CCO conservation will feature as one of the top priorities, will be funded accordingly as a top priority and will be delivered through a focussed and more accountable environment. Under any of the options conservation will work, however the CCO is likely to produce a more effective solution.

3.3 Renewals

3.3.1 Hamilton City Council

Hamilton City Council's renewal plan is based on assets useful life determined through a combination of the following:

- An assets theoretical useful life as determined by the manufacturer
- Condition of the asset deteriorates to a point where it is no longer economical to maintain the asset
- When technology that the asset is based on becomes obsolete
- When the asset can no longer carry out the function that it was intended to do

Hamilton Council uses condition assessment data with industry standard life expectancy curves to forecast an assets likely end of life. The end of life forecasts are then analysed against asset capacity data to develop a 30 year renewal programme.

Condition assessments follow the methodologies described below:

- **Pipes**: sample surveys are carried out to determine the remaining strength of pipe material by core sampling surveys and visual inspections. The information obtained for each specific asset surveyed / sampled is then extrapolated across all similar assets (age and material).
- **Connections:** connections are replaced with the reticulation pipe or prior to footpath replacements.
- **Valves and Hydrants:** the budget for renewals is determined using past asset performance.
- **Treatment Plant and Reservoirs:** intensive survey work was carried out to define a 30 year renewal programme, prioritised based on staff knowledge.

Renewals are then prioritised based on assets criticality. Assets which are critical to enable the operation of the activity are renewed before failure while non-critical assets are renewed once they have failed.

3.3.2 Waipa District Council

Waipa District Council's renewal plan is mainly based on assets remaining life derived from expected life less current asset age. Based on this information a large number of assets should be renewed and historical renewal expenditures should be increased to meet the suggested levels of renewal. While Waipa considers that that their current levels of renewal are appropriate they have increased expenditure in future years (beyond year four of the LTP) to reflect renewal levels based on asset age.

Ongoing condition inspection programmes are currently carried out to further inform renewal profiles, in order to move away from renewal projections purely based on the age of the assets. Waipa plans to incorporate condition, criticality, risk and age of assets to their three water networks are maintained in the most cost effective and efficient manner.

The proposed methodology to assess asset condition may result in highlighting issues within the network that require different (most likely lower) expenditure than originally allowed for in the LTP.

3.3.3 Waikato District Council

Renewal expenditure was historically based on assets remaining life derived from expected life less current asset age. Waikato District Council has developed a condition assessment strategy to improve their detailed renewal programmes. This will be implemented as part of the next LTP 2015-25.

Waikato District Council is planning to carry out a detailed condition assessment over the next three years to provide a more accurate renewals programme. As a result a slight increase in renewals expenditure from 2018/19 is forecasted to deliver an anticipated backlog of network asset renewals identified during the condition assessment programme. However moving from expected life assessments to a more robust condition assessment may decrease expenditure overall.

3.3.4 Summary of Renewals

The asset management approach for renewals are similar for Waipa and Waikato which are based on expected asset life with condition investigations ongoing to determine the expected life span. Hamilton have a similar approach but classify useful asset life. All three councils are taking a similar approach basing the life expectancy on a measure of asset life refined through condition information. The Status Quo option would see this approach continue and could be refined through exchange of asset condition and performance information between the councils, however the separate entities use of this information may vary as there are limited strategic solutions. The ESS model will introduce more opportunities to maximise a more joined up approach but will be limited to how the joined up strategy will be able to maximise their maintenance through agreed priorities. The CCO model will offer:

- Consolidation of asset information through a consistent approach
- Ability to accommodate prioritisation from a strategic position
- Provision of more resilience through a holistic solution hence improve security of supply
- Manage maintenance more effectively
- Develop best practice (centre of excellence)

3.4 Operations and Operating Costs

3.4.1 Hamilton City Council

In Hamilton, the delivery of operational activities is determined by sourcing the most cost efficient method in which to provide the activity. Contractors and consultants Opex costs represent 12% of the total Opex costs for water, 27% for wastewater activities and 20% of Opex for stormwater.

Operational expenditure is broken down into the seven categories detailed below:

- **Operational Activities:** This includes activities required for the daily operation of the treatment plants, reservoirs and network.
- **Operational Programmes:** This includes distinct programmes of works that have been identified and developed to address specific activity issues. More specifically this covers HCC's planning, modelling, monitoring and consenting activities.
- **Variable Operational Costs:** Variable costs are those that vary with the volume of water/wastewater services provided and include energy (electricity) use, chemical use, bio solids disposal and trade waste fees.
- **Maintenance:** Maintenance is defined as the ongoing work carried out to ensure the reliable performance of the asset. Maintenance does not increase the service potential of an asset, but rather ensures that the asset provides the service for the expected amount of time. Maintenance is programmed in two ways: Reactive or Proactive.
- **Compliance:** Compliance is defined as the implementation, auditing, reporting and education of statutory and regulatory compliance of the activity.
- **Overhead:** Overheads are defined as all ongoing business expenses not including or related to direct operational activities, programmes, maintenance or compliance works associated with the activity.

- **Consequential Operational Cost:** This includes the operational expenditure associated with new assets procured through the capital works programme. The costs will be a combination of operational activities, maintenance and compliance works.

3.4.2 Waipa District Council

The majority of the maintenance and operational work is undertaken internally by Waipa District Council staff with some projects assigned to contractors.

In Waipa, operations and maintenance activities are defined as day to day activities required to deliver the agreed levels of service and to retain the assets as near as practicable to their original condition. These activities are separated from renewal and improvement activities which cover the capital works and strategic development of the asset base.

3.4.3 Waikato District Council

The majority of the maintenance and operational work is undertaken internally by Waikato District Council staff with some projects assigned to contractors.

In Waikato District Council, operations and maintenance activities are defined as the work required for the day-to-day operation of the network whilst maintaining the current levels of service. These activities are separated from renewal works, capital works and disposal activities.

3.4.4 Summary of Operations and Costs

Planned operational expenditures for the three councils are shown below. These numbers were sourced from the financial model developed by Cranleigh.

Table 3.4: Planned Operational Expenditure

		Planned Operational Expenditure ($,000,000)									
Council	Service	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
Hamilton	Water	8.7	9.7	10.0	10.0	10.4	10.7	11.0	11.5	12.7	12.4
	Wastewater	13.4	14.1	14.6	15.2	15.6	16.1	16.8	17.5	18.3	18.8
	Stormwater	2.4	2.5	2.7	2.8	2.8	3.4	3.0	3.0	3.2	3.3
	Total	**24.6**	**26.4**	**27.3**	**27.9**	**28.8**	**30.2**	**30.8**	**32.0**	**34.1**	**34.5**
Waipa	Water	5.6	5.9	6.0	6.3	7.2	7.3	7.7	7.9	8.1	8.4
	Wastewater	3.6	3.7	3.8	4.6	6.6	5.9	6.7	6.6	6.8	7.1
	Stormwater	1.7	1.7	1.8	1.8	1.8	2.2	2.1	2.2	2.2	2.3
	Total	**10.9**	**11.4**	**11.6**	**12.7**	**15.6**	**15.4**	**16.5**	**16.7**	**17.2**	**17.8**
Waikato	Water	6.2	6.5	6.8	7.0	7.3	7.6	8.0	8.6	8.8	9.2
	Wastewater	5.1	5.6	5.4	5.0	5.2	6.1	6.5	7.0	7.1	7.5

Council	Service	Planned Operational Expenditure ($,000,000)									
		2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25
	Stormwater	0.8	1.1	1.2	1.2	1.1	1.1	1.5	1.2	1.3	1.5
	Total	**12.1**	**13.2**	**13.3**	**13.2**	**13.6**	**14.9**	**16.0**	**16.8**	**17.2**	**18.1**
TOTAL	Water	20.5	22.1	22.7	23.3	24.9	25.7	26.7	27.9	29.6	30.0
	Wastewater	22.1	23.5	23.8	24.8	27.4	28.1	30.1	31.1	32.3	33.4
	Stormwater	5.0	5.3	5.6	5.8	5.7	6.7	6.6	6.4	6.7	7.1
	Total	**47.6**	**51.0**	**52.2**	**53.9**	**58.0**	**60.5**	**63.3**	**65.5**	**68.5**	**70.4**

Source: Three Councils Draft LTP 2015-25

The combined operational expenditure of all three councils is currently circa $47.6 million per year (based on 2015/16 forecast). This is split 43.1% water, 46.4% wastewater and 10.5% storm water. Given the synergies associated with activities carried out by all three councils this area offers considerable opportunities to deliver cost savings. One of the main areas is that of the reduction of labour required to do common activities. These mainly consist of reduction on FTE's which are quantified within the body of the main report. The engineering analysis highlighted the following areas where cost savings could be made:

- Rationalisations and reprioritisation of routine tasks
- Asset management of inventory rationalisation of data collection
- Consolidation of common services
- Deferment of investment through strategic solutions
- Deferment of maintenance activities

The Status quo option will not facilitate the delivery of Opex savings. The ESS option will allow the following-

- Some reprioritisation of routine tasks as limited rationalisation would be available.
- Some asset management of inventory rationalisation of data collection depending upon wither a single asset management system is adopted.
- Consolidation of common services e.g. laboratory testing through sharing.

The CCO option would allow the following:

- Rationalisations and reprioritisation of routine tasks
- Asset management of inventory rationalisation of data collection
- Consolidation of common services
- Deferment of investment through strategic solutions
- Deferment of maintenance activities

The case studies presented in Section 6 provide further insight and evidence as to where operational cost savings can be made and the associated magnitude of the savings achieved elsewhere.

3.5 Resilience

Resilience issues are specifically addressed in Hamilton's Activity Management Plan and include:

- Coping with peak demands
- Ability to provide three water services during power or telecommunication network failures
- Emergency plans for City wide events
- Preparing critical assets to meet earthquake requirements
- Ensuring availability of appropriately skilled resources (internal/external) to meet future requirements
- Addressing inaccuracies related to asset location (resulting in damaged underground infrastructure)

For the other two Councils (Waipa and Waikato) resilience essentially needs to be addressed on a "per scheme" basis as each scheme presents its own risks and may come with different solutions.

Resilience forms one of the main aspects of evidence which support the argument for a CCO model. It enables key strategic decisions to be made with the objective of a more secure supply and reduces the probability of service failure. The main argument against investing in projects improving resilience comes from the difference in measurable cost associated with failing to deliver against the cost of the capital investment to mitigate the risk. A CCO will enhance the argument to invest in resilience as more cost effective options are available through the CCO structure. For example, the construction of Matangi and Tamahare reservoirs could be removed from the current Waikato Long Term Plan. Storage and security of supply in the Waikato Southern Districts would be provided from Hamilton's planned Hillcrest and Fairfield 24ML reservoirs which have sufficient capacity to cover for Southern District additional demand. This would result in net capital savings in the region of $3.8million and net operational saving through reductions in inspections and maintenance in the region of $18,400 per year.

The development of improved systems focussed from a Water Utility perspective along with a disciplined work force of water professionals working under a utility model with effective risk management plans is likely to improve the resilience of the service provided when compared to the status quo. For example the standardisation or improved system responses and operational procedures to certain events along improved sharing of knowledge and experiences will provide for better outcomes associated with, for example, a toxic shock to a treatment plant.

The ESS model could facilitate limited resilience schemes. The main challenge with the ESS model is the ownership of the assets should a rationalisation option be available. The splitting of costs around resilience is difficult and prioritisation around risk and failures needs very strong leadership.

The status Quo will only enhance resilience within the councils existing boundaries and limitations identified with their LTPs.

3.6 Centre of Excellence

The three councils all have similar wide ranges of services which they provide to the public. The services which include transport, roads, housing and water all require a considerable common expertise to manage and improve their performance including a level of asset management expertise. We have detailed and highlighted the key role asset management and benchmarking has in enabling the delivery of sustainable efficiencies and effective working in sections 6 and 7 within the report.

The EES and CCO model will enable a centre of excellence to be developed.

Areas identified as high potential where high skill levels and competencies can be developed are:

- Project Management
- Procurement
- Asset management
- Water education
- Treatment plant and network operations

The later sections within this report set out how asset management and best practice can deliver efficiencies and more effective businesses. This will be more achievable from a fully focussed and accountable CCO. We believe that the CCO could provide services back to the three councils from the centre of excellence. This has been done effectively in the Scottish Water model similar to that which is being considered. The ESS model could deliver a similar service delivering a centre of excellence through a Programme Management Office type set up where key skills competencies and support is provided from a central hub. This is unlikely to perform as well as the CCO model as centre of excellences tend to be driven strategically.

Through the implementation of a CCO and associated centre of excellence, career development and job opportunities are likely to improve. This has been noted across the case studies as being a significant positive outcome from the rationalisation process for both the management teams along with professional (technical and operations) staff being better recognised for their skills. It has also provided the ability to further develop their profession as part of a larger team focussed on the delivery of water services to customers which provides better career prospects (and staff retention) along with attracting more interest from the employment market. Recognition of water utility services as a critical sector in the community is important as it raises the profile of the sector and highlights the importance of the resource and associated services to society.

4 Project Synergies

A workshop was organised with engineering representatives from Hamilton City Council, Waipa District Council and Waikato District Council. This workshop aimed at identifying potential capital works synergies should a CCO be formed to manage the three water services in the three Councils named above.

The synergies described below provide a high-level overview of potential projects that could lead to some saving or a better level of performance for the three water services provided by the three Councils. This list of synergies is not exhaustive and is likely to be conservative. Project synergies will be one of the first things that need to be considered should a CCO be established. The CCO will need to come up with a detailed master plan analysis comparing delivery options in order to produce a joint LTP that can provide further savings, efficiencies and improved levels of service.

Project synergies are less likely to occur under the ESS and very unlikely to occur under the status quo conditions. In both cases project synergies require Councils to find an agreement on how to share project costs, project management, asset ownership etc. This represents a real obstacle to any potential collaboration between Councils. From our knowledge Wellington Water (and previously Capacity) have kept LTPs separate until now, at this stage there is no indication leading to think that the ESS will put together a common plan in the near future.

4.1 Study Area

The study area was focused around the Hamilton urban centre. Isolated schemes such as Raglan, northern Waikato District communities and other distant small satellite supplies were excluded from the extent of this analysis. The schemes considered during the engineering evaluation are listed in Table 4.1 below.

Table 4.1: Schemes considered in Engineering Assessment

Scheme	Council	Scheme	Council
Hamilton City	Hamilton City Council	Waikato Southern Districts	Waikato District Council
Cambridge	Waipa District Council	Ngaruawahia	Waikato District Council
Pukerimu	Waipa District Council	Taupiri/Hopuhopu	Waikato District Council
Te Awamutu	Waipa District Council	Huntly	Waikato District Council
Kihikihi	Waipa District Council		

4.2 Documents Considered

The documents considered as the base information to determine the capital works programme defined for each Council are listed in Table 4.2 below

Table 4.2: Documents Considered

Council	Documents
Hamilton	10 year plan
	Draft water and wastewater master plans
	Draft Activity Management Plans
	Draft 30 year infrastructure strategy plan
Waikato	10 year plan
	MWH 50 year long term strategy plan
	Draft Activity Management Plans
	Draft 30 year infrastructure strategy plan
Waipa	Draft Activity Management Plans
	Draft long term plans
	Draft 30 year infrastructure strategy plan
	MWH report on Cambridge and Hamilton wastewater options

4.3 Water Synergies

4.3.1 Water Storage for Waikato Southern Districts

The Southern Districts of Waikato are located east of Hamilton City. Water is sourced from Hamilton's water network through multiple bulk supply points before being supplied to customers. Waikato District Council are planning to build two reservoirs, one in Matangi (350m^3) and one in Tamahere (1,200m^3) to increase their storage capacity and improve security of supply.

Hamilton is also planning to increase their storage capacity in the eastern side of the city by constructing two additional reservoirs in Fairfield/Ruakura and in Hillcrest. Both reservoirs will have a 24ML capacity.

If water services were to be managed by a single CCO, the construction of Matangi and Tamahare reservoirs could be removed from the current Waikato Long Term Plan. Storage and security of supply in the Waikato Southern Districts would be provided from Hamilton's planned Hillcrest and Fairfield 24ML reservoirs which have sufficient capacity to cover for Southern District additional demand.

Benefits include:

- Net capital savings in the region of $3.8million
- Net Opex savings in the region of $18,400 per year
- Level of service improvements around pressure, security of supply and potential for providing fire flows.
- Capacity to meet growth and economic development.

4.3.2 Hamilton Airport and Titanium Park Water Supply

Hamilton International Airport is located in the Waipa District, south of Hamilton's urban centre. It is currently supplied from the Pukerimu water treatment plant. Significant developments are anticipated in this area, this includes the development of the Titanium Park that is currently under construction. An average flow of approximately 85m^3/d is currently supplied to the Airport but the demand in this area is planned to increase to 600m^3/d and to reach 1,200m^3/d ultimately. Waipa District Council is currently planning to upgrade the existing 150 mm pipe supplying the Airport from Pukerimu WTP.

If water services were to be managed by a single CCO, investigations should be carried out to service the Airport from the Hamilton water network. Based on the information gathered from Waipa District Council and Hamilton City Council the proposed infrastructure would run from Hamilton South reservoir and the proposed reticulation in Peacockes to the current supply point at the Airport. The pipe alignment should follow existing roads as no runway crossing is possible at this stage. At this stage, fire flow is planned to be provided onsite by developers.

Benefits associated with servicing the Airport from Hamilton include:

- Net capital savings of $0 for current 30 year plan. Future savings of $3.1million is achievable within the 30 year plan should this incorporate the delivery of 1,200m^3/d from Hamilton South reservoir to the airport.
- Net Opex savings of $0
- Improved resilience.
- Improved water quality.
- Increased economic development opportunities.

4.3.3 Northern Area Treatment Plant / Supply

Hamilton City Council has a new water treatment plant planned in the north of Hamilton with a water intake from the Waipa River. This water treatment plant is required to supply future developments in the north of Hamilton. The timing to build this new WTP varies depending on the increase in water demand and on the water conservation strategy that Hamilton will implement. Based on current forecasts, the Northern WTP may be required as soon as 2040 if nothing is done to reduce the demand. It may be postponed as far as 2056 with the implementation of significant water demand management intervention. At this stage the cost to install meters has been included in the 30 year investment programme and the installation of the Northern WTP has been assumed to occur in years 2044 and 2045 of the programme.

As part of a CCO, the proposed water treatment plant could help servicing schemes in Waikato and Waipa. The construction of a northern water treatment plant would free up some capacity at the existing Peacockes water treatment plant (Hamilton) which could then be used to service Waipa and Waikato District schemes.

This would allow some savings on the planned $19M water treatment plant upgrades required by Waipa District. However an allowance for bulk water connections needs to be made. The bulk infrastructure

required would include a pipe from the southern part of Hamilton (Peacockes) to Pukerimu, Te Awamutu and Cambridge. Waipa water allocation would need to be transferred to HCC. This option would also work to supply the Airport and could provide the water demand required in Waipa.

This option also allows connecting some of the Waikato schemes (Ngaruawahia, Huntly and Hopuhopu) to Hamilton. This represents an additional average demand of approximately 8,000m^3/day by 2045. This would eliminate the need of further expansion/upgrades to the Waikato plants located in Huntly and Ngaruawahia.

There may be a need to set out changes to the timing of the current investments as the Northern WTP currently planned for 2045 by HCC depending on the capacity that can be provided from the Peacockes WTP (Hamilton existing WTP) and the need for improved resilience and better gradings in Waipa and Waikato. This has not been taken into consideration in this high-level study.

There will be some asset disposal costs for the smaller plants. In this scenario Alpha St (Cambridge), Parallel Rd (Pukerimu), Te Tahi (Te Awamutu), Huntly and Ngaruawahia water treatment plants would be decommissioned. These may be compensated by potential incomes resulting from selling land where treatment plant will be decommissioned.

The Karapiro water treatment plant would be kept as a strategic site, as its water allocation is calculated based on a different catchment (upstream of the Karapiro Dam).

Other benefits include:

- Net capital saving of $-1.2million
- Net Opex saving of $300,000 per year
- Improved resilience better risk profile– supply / algae
- Improved level of service – water quality
- Consolidated water allocation
- Improved disaster management
- Significant economic development
- Savings on Resource Consent costs and compliance
- Lower monitoring cost
- Lower operational costs
- Level of service improvements around pressure, security of supply and potential for providing firefighting flows.
- Capacity to meet growth and economic development.

4.4 Wastewater Synergies

Waipa District Council has planned a $24M upgrade for their Cambridge wastewater treatment plant. Further upgrades of this wastewater treatment plant could be considered to supply Peacockes growth cell and other growth forecasted in the south of Hamilton (e.g. Hamilton Airport).

In this scenario, the southern Peacockes storage planned by HCC in their 30 year plan could also be removed. The Te Awamutu WWTP would be maintained in the short term and consolidated into Cambridge in the longer term if this option is beneficial.

This option would free up some capacity at the Pukete wastewater treatment plant (located in the north of Hamilton) which could be used to service Huntly and Ngaruawahia in the longer term. At this stage this was not considered as the cost to connect rising mains from Huntly and Ngaruawahia is significantly greater (approximately $50M) than the cost estimated by Waikato District Council to upgrade the existing treatment plants (approximately $2M). The connection of Huntly and Ngaruawahia should be further investigated in a detailed study as this would result in the potential decommissioning and sale of the Huntly and Ngaruawahia plants and would provide improved levels of service for these two schemes.

To estimate the potential Capex savings resulting from the wastewater project synergies it was assumed that the Peacockes interceptor (estimated at $103.9 million in the Hamilton LTP) would be replaced by a pressurised pipe to the Cambridge Upgraded WWTP. A total pipe length of approximately 23km and an internal pipe diameter of 750mm were considered. A unit cost of $1,750/m derived from the Watercare planning cost estimate database was used for cost estimates. This results in a total pipe cost of approximately $40 million. An allowance of approximately $5.7 million for a new pump station and an additional $15 million to further upgrade the Cambridge WTP to treat the Peacockes flows were included in the cost estimates. Given the proposed alignment (rural roads, no river crossing) this should cover the cost for the proposed connection. A large portion of Watercare's work is not rural which is accounted for in their planning rates. Therefore the rates were not inflated any further.

Benefits are:

- Net capital savings of $47million
- Net Opex savings of $-200,000
- Improved Levels of service and environmental compliance
- Economic benefits and growth around the airport (wet industries – airport as central transport hub)
- Environmental benefits and improvements to river water quality
- Future benefit could supply small schemes not included in the above (Waikato Southern Districts)
- Improved energy efficiency and energy recovery with anaerobic digestion
- Opportunities for reuse
- Improved biosolids management
- Lower monitoring cost

4.5 Stormwater Synergies

No significant capital works synergies could be identified for storm water services in the study area.

4.6 Summary of Synergies

A single CCO would enable more strategic approach to meet the needs of Southern Districts additional demand. The solution would also bring service improvements around pressure, security of supply and potential for providing firefighting flows as well as meeting growth and economic development demands.

If water services were to be managed by a single CCO, investigations should be carried out to service the Airport from the Hamilton water network. Based on the information gathered from Waipa District Council and Hamilton City Council the proposed infrastructure would run from Hamilton South reservoir and the proposed reticulation in Peacockes to the current supply point at the Airport. The pipe alignment should follow existing roads as no runway crossing is possible at this stage. At this stage, fire flow is planned to be provided onsite by developers.

Benefits associated with synergies:

- Net Capex savings of $49.6million for the first 30 years for water and wastewater
- Net Opex savings of $118,400 per year for water and wastewater
- Improved resilience better risk profile – for example supply / algae
- Consolidated water allocation
- Improved disaster management
- Savings on Resource Consent costs and compliance
- Lower monitoring cost
- Level of service improvements around pressure, security of supply and potential for providing firefighting flows.
- Capacity to meet growth and economic development.

Detailed Capex estimates and assumed expenditure programmes for water, wastewater and stormwater are available in Appendix C.

5 Business Case Options

5.1 Background

The Councils are jointly seeking a detailed and robust business case to build on the findings of the previous analysis[2] and provide a detailed evaluation and set of recommendations in respect of establishing a CCO or an enhanced services model for the delivery of water services across the Hamilton, Waikato and Waipa districts. This report considered the advantages, disadvantages and measurable benefits associated with the status quo, enhanced shared services and the CCO options from an analysis of the engineering aspects. For completeness the ownership of storm water is also considered.

5.2 Overview of Options- Engineering

There are three possibilities being considered as part of this detailed analysis business case. These consist of:

- **Status Quo:** Current model operates as separate sub region water service departments with a moderate shared service
- **Enhanced Shared Services:** Would still operate from an accountability point of view as separate sub region water services. These would be expanded from the current position to include operations and maintenance, Capital works Programme, renewals, Network Asset & Growth Planning and Water Education. It is envisaged that one council region is likely to lead the enhanced integrated approach. The main report will cover the likely structure, governance and workings.
- **CCO:** Would see a formation of an integrated entity with full responsibility for delivering the water services throughout the three regions.

5.3 Comparisons of Options

This assessment considers the option of developing an enhanced shared services (ESS) model to deliver the water services across the sub region. This would provide an alternative to moving to a full CCO Utility and would have to provide tangible benefits over the current status quo.

As part of the organisational design workshop it was agreed that the ESS model would not involve moving to a CCO with ownership from each Council. The organisation would essentially be virtual and as such would need to be operated through one of the existing Council entities. Hamilton city, as the geographic centre and largest organisation is therefore likely to be the home for the ESS team.

The proposed structure for the ESS option is presented as part of the business case analysis with the key difference to the CCO model being the ownership of the assets (they would remain with each of the

2 Waikato Water, A report to the Waikato mayoral forum on the future delivery options, April 2014 ; Waikato Sub Region -3 Waters Shared Services High Level assessment, March 2013 ; A Strategic Review of Opportunities Arising from Shared Services Relating to the Water and Wastewater Activities of Territorial Authorities in the Waikato Region.

Councils under ESS). The ESS team would therefore deliver a range of services across the three Council organisations.

5.3.1 Services Provided By Enhanced Shared Services.

Based on the organisational design workshop the services to be provided by an enhanced shared services team would extend to:

- **Operation & Maintenance (O&M):** All O&M work could be undertaken by a larger team (and/or contracted out under the management of the ESS team) providing the services across the sub region. Currently trade waste and laboratory services are delivered in this way.

- **Capital works program:** Delivery of the capital works programme across the three Councils and potentially considering integration of the network infrastructure between organisations where appropriate and where agreement can be reached. A centre of excellence can be established to provide a greater level of project management support and other expertise to deliver the 30 year investment programme.

- **Renewals:** Planning for and delivery of renewals across the networks and treatment plants for each of the three Councils. The challenge will be to ensure that there is sufficient renewals-funding for each network and potentially limited ability to cross subsidies.

- **Network Asset and growth planning:** This would include the ESS team working with each of the Councils to understand and develop growth plans and the future capital works programme as well as manage demand across the networks. This would require effective consultation and dialogue across each of the Councils to obtain buy in and where possible align growth plans and agendas so that longer term savings and improvements to resilience could be realised.

- **Water education:** Continuing public and stakeholder awareness of water education issues as part of the ESS arrangement.

In Table 5.1 below we have presented the potential advantages and disadvantages of the activities proposed for the ESS team against both the status quo and the CCO model and in Table 5.2 we have presented the potential advantages and disadvantages of the activities proposed for the CCO team against both the status quo and the ESS model. The CCO model would deliver all services.

Table 5.1: Potential Advantages for the ESS Model

Activity	Advantages over the Status quo –	Disadvantages over the Status quo	Advantages over CCO	Disadvantages over CCO	Comments
O & M	Procurement - greater purchasing power, Larger more specialised team through a centre of excellence	Potential conflicts of interest across the 3 councils leading to a difference in the level of service provided. May be difficult to align systems – e.g. H&S	Individual Councils may feel they still retain an acceptable level of control in the decision making process	Potential miss alignment of agendas through greater Council influence over the O&M programme and associated variation in LOS and costs	ESS would likely provide an improvement on Status quo but the model is likely to throw up some challenges with ensuring that the management team can align agendas and deliver a consistent LOS across the sub region
Capital works program	Better coordination of programme and improved procurement of designers and contractors. Better project management support	Prioritisation of delivery may be an issue. Potential for mis-aligned priorities across the 3 organisations	Greater sense of council / community involvement with capital delivery	Individual Councils could disrupt the delivery through changes in funding.	As with the Wellington Water arrangement there are likely to be improvements with ESS over Status quo with the delivery of the capital works programme through a centre of excellence, however the management of individual Council priorities and expectations as well as working with 3 different systems may present challenges
Renewals program	Planned and agreed funding for renewals. Ability to compare and benchmark against each Council	ESS may need to work with multiple systems to deliver to 3 organisations.	No obvious advantages	Renewals programme could be disrupted if any of the Councils decide to restrict spending on renewals.	There will still be the ability for individual councils to restrict funding to their renewals programme under the ESS model, whereas under CCO renewals funding is likely to be financially independent of the Councils
Network Asset and growth planning	Potentially able to identify synergies, improve resilience and realise cost savings through combining network infrastructure.	Each council may perceive that they lose some community / stakeholder engagement.	Individual Councils may feel they have a greater influence over the planning process.	Influence and self-interest from individual councils that may be counterproductive to a more resilient and cost effective network longer term.	Potentially improvement with planning over Status quo, however there will be challenges with aligning agendas for each Council. The CCO model is likely to provide a longer term focus at a sub-regional level providing improved resilience and potentially lower cost.
Water education	Great level of expertise and ability to provide material to community	Engagement may seem more centralised and less personal	Greater influence from individual Councils around the educational program	Less appreciation for long term water issues, less resource to undertake the water education program.	Water education is not likely to suffer under any of the models given that it is currently centralised as a shared service at present.

Table 5.2: Potential Advantages for the CCO Model

Activity	Advantages over the Status quo –	Disadvantages over the Status quo	Advantages over ESS	Disadvantages over ESS	Comments
O & M	Procurement – More strategic approach, greater purchasing power, Larger more specialised teams through a centre of excellence.	Cost associated with aligning systems – e.g. H&S diversion of resources.	Address the risk that Individual Councils may feel they can still retain an acceptable level of control in the decision making process	Potential miss alignment of agendas through strategic prioritisation individual council may feel disadvantaged.	CCO would provide an improvement on Status quo due to more focus on prioritised activities. Model may throw up some challenges with ensuring that the management team align agendas.
Capital works program	Better coordination of programme and improved procurement of designers and contractors. Better project management support	Initial agreement of Prioritisation of delivery may be an issue due to emerging issues. Potential for mis-aligned priorities across the 3 organisations	Joined up strategic approach with clear definition of ownership and operation.	Individual Councils may feel they are losing control and may prolong agreement of prioritisation of delivery.	As with Watercare there are likely to be improvements with CCO over Status quo with the delivery of the capital works programme through a centre of excellence, however the management of emerging issues may present challenges.
Renewals program	Planned, prioritised and agreed funding for renewals. Ability to work strategically through one system.	May be harder to obtain buy in from each individual council to strategic plan.	No obvious advantages	Renewals programme may not be flexible enough to address emerging issues.	The ability for individual councils to restrict funding to their renewals programme under the CCO model is removed through financially independent of the Councils
Network Asset and growth planning	Strategic ability to identify synergies, improve resilience and realise cost savings through combining network infrastructure.	Each council may perceive that they lose some community / stakeholder engagement.	Full prioritisation of investment including funding and timing to enable growth.	Prioritisation may in the short term lead to councils not meeting their original LTP growth and resilience targets.	Strategic planning over Status quo, with aligned agendas for each Council. The CCO model is likely to provide a longer term focus at a sub-regional level providing improved resilience and potentially lower cost.
Water education	Great level of expertise and ability to provide material to community	Engagement may seem more centralised and less personal	Greater strategic influence from a joined up accountable organisation.	Transition may temporary lead to less resource to undertake the water education program.	Water education is not likely to suffer under any of the models given that it is currently centralised as a shared service at present. However EES and CCO are likely to provide a more centralised approach.

Considering the above qualitative analysis and the themes which have identified a CCO as a better mechanism for delivering the water services across the sub region we provide the following assessment against each of the key themes.

- **Capital works programme:** The ESS model may provide an improvement over the status quo for the delivery of the capital works program. This would have to be enabled through joined up asset planning, managed through improved project management with support of the centre of excellence which would enable implementation of best practice. The major doubt associated with the EES is that there will still be potential for individual councils to take a short term view and modify priorities of programmes from a political agenda or reactive behaviours instead of proactive. A step towards more centralised ESS would be the development of a joint LTP. The CCO model provides a better arrangement for delivering the 30 year capital works programme through a jointly developed LTP and centralised accountability.

- **Realisation of Capex & Opex savings:** The ESS model may well provide some Opex and Capex savings through having a centre of excellence, greater purchasing power, jointed plan coupled with more management support. One of the biggest challenges is the joint ownership of assets. This requires complex agreements and some form of joint venture to overcome the legal difficulties. The CCO model overcomes the legal difficulties and provides the platform to deliver the savings through joined up long term planning and implementation. Potential for different Council organisations to modify their funding arrangements creating a difference in prioritisation in across the sub region. In addition there may be greater compliance costs if there is no alignment of systems such as H&S and other operational tools and procedures.

- **Improved resilience and security of supply:** The current status quo model has not met the existing compliance requirements. In order to maintain the Status quo the current three councils will have to increase their commitment to address the root causes of failure. The ESS model is likely to provide only a marginal improvement to resilience and security of supply over the status quo given the difficulties with aligning all three Council agendas over time to develop an integrated sub regional water and wastewater network. This would be more easily achieved under a CCO arrangement through the joint organisation accountability of compliance.

- **Growth and economic development:** The ESS model is unlikely to be better than a CCO model with delivering improved outcomes for growth. The funding will still be tied to the individual Council organisations and there will likely be constraints and differences in terms of prioritisation across the 3 Councils which could lead to internal conflict as opposed to a unified organisation delivering on the growth requirements for the sub region. The CCO with the increased capability to fund and offset investment over a greater number of years is a better model to deliver the economic growth.

- **Asset management:** The ESS model should allow for a centre of excellence and a greater level of skill for the strategic management of assets, however there is no evidence that this would be any better than a CCO model. What is evident is that highly skilled asset management organisations delivering

best practice maintain and attract and expand on competent staff. A key enabler of the CCO and EES would be one asset management system. This raises maintenance and operational difficulties which need to be addressed in order to integrate systems within each Council which may have a range of different systems and tools (e.g. software, AM systems and procedures, H&S systems) associated with them.

- **Level of service improvements:** The ESS model has the potential to provide an improvement to the status quo through the development of a centre of excellence and a greater focus on water, however given the internal differences, prioritisations and funding allocations there may be substantial variation across the sub region with the LOS provided. This is less likely to be the case under a CCO arrangement.

Our assessment of the ESS model is that it will fall well short of the benefits that can be provided through a CCO model where the assets are owned or vested into the CCO. Based on the evidence and information provided by the Capacity Infrastructure Services, (now Wellington Water) arrangement which is effectively an enhanced shared services CCO – indications are that full integration is more likely to provide the gains.

5.4 Delivery of Storm Water Services

The delivery of Storm Water services has been considered under both the ESS and CCO model. Storm water services are essentially a public good service where the revenue to provide the service is collected via the land rates and cannot (in the most part) be directly associate with individual properties.

The planning for storm water services is closely aligned with urban planning and the roading network planning – these activities are planned to remain with the three Councils. In addition, based on the capital works evaluated as part of this study no synergies around storm water network planning were identified by the team.

The capital works programme for storm water infrastructure is also aligned with roading works across the sub region.

It is acknowledged that the storm water services provided by Hamilton City are largely urban based as opposed to Waipa and Waikato where the services are mainly rural. In addition we understand that Waikato Regional Council (WRC) is both a storm water asset owner and regulator of these services. Given that WRC is not part of this evaluation and the requirement to align the planning for storm water infrastructure to roading and urban development along with the inherent difference between the water and wastewater service provision, our assessment is that the storm water services currently provided across the sub region, can continue to be provided on a stand-alone basis through each of the Council organisations. This has been the conclusion elsewhere including for many of the case studies sighted (Watercare, TasWater & across the state of Victoria in Australia, Scottland and England).

Renewals and O&M aspects however could potentially be ring fenced as a service that could be provided by a CCO either on contract or mandated through the organisations constitution. The latter may prove

difficult as detail around the definition of the level of service to be provided will be hard to quantify and more difficult to modify in the future.

A contract arrangement for the provision of storm water O&M services and the implementation and delivery of a renewals and/or improvement programme could be set out for the CCO to deliver. This arrangement would not change the nature or structure of the CCO but may simply impact on the head count and the range of services to be provided.

Capital works for growth, once planned and defined by the individual Councils (and where these were not part of a roading or other development contract) could also be delivered by the CCO centre of excellence and given that this work will not have the inter connections that the water and wastewater networks may have it would be easier to deliver the programme to individual Councils with specific funding attached to each project and minimal need to align agendas.

The provision of the services would essentially be cost neutral through the CCO.

Given the above we recommend that as part of forming a CCO:

- Each Council considers contracting their storm water O&M and renewal services to the CCO on the basis that it will provide the same or better level of service for the same or better cost. A model form of contract could be developed for this service provision that is agreed between each of the Councils and the CCO.

- Each Council consider aspects of their storm water capital works programmed that can be delivered by the CCO as the capital works programme progresses and where Storm water capital works are not associated with a roading project or other development works they are delivered on a cost neutral basis by the CCO capital delivery team.

- Each Council retains the planning for storm water infrastructure in house as part of their urban and roading network planning.

6 Case Studies and Benchmarking

6.1 Watercare

6.1.1 Introduction

Watercare was originally established in 1991 as a wholesale provider of water and wastewater services to various councils in Auckland.

At a later date Auckland City Council and Manukau City Council formed their own CCOs to manage retail water and wastewater services (MetroWater 1997 and Manukau Water 2006).

After the amalgamation of Auckland's local authorities and regional council into a single Auckland Council in 2010, Watercare became the single entity responsible for providing water and sewerage services within the Auckland Council boundaries. Watercare provides water and wastewater services to around 1.4 million people in the Auckland region.

Each day, Watercare supplies around 370 million litres of drinking water to the people of Auckland and treats around 350 million litres of wastewater and trade waste. The company draws water from around 30 sources, treats it and delivers it to homes and businesses via a vast network of pipes. It also collects, treats and disposes of wastewater, including trade waste from industry.

6.1.2 Savings since Establishment

Watercare was looking at achieving operating expenses of at least 5% below budget. For 2011/12, the company reported that they achieved an actual operating expense of 4% below budget as a result of labour cost savings, lower asset operating costs and reduced other costs including professional fees and general overheads. Efficient procurement represented an achieved savings of 2% of operating expenditure.

Between November 2010 and July 2012 Watercare achieved $104 million cost efficiency across the region. This equates to approximately 20% savings based on the capital work programme. As reported in their 2011/12 Annual report.

Changes to volumetric price of water since their amalgamation show overall significant cost savings with a range from a 5% increase at Manukau City to a 61% decrease at Rodney District rural and towns.

In 2013/14 Watercare sourced all of its medium and long-term borrowing from Auckland Council, saving $250,000 in interest costs.

It should be noted that the savings highlighted above were made in addition to any previous savings achieved by the CCOs established in the Auckland Region prior to the Auckland amalgamation (e.g. Metrowater and Manukau Water).

6.2 Wellington Water

6.2.1 Introduction

Prior to 2004, the three water services in the Wellington Region were provided by four Councils and one bulk water authority (Greater Wellington Regional Council).

Capacity Infrastructure Services (Capacity) was established in 2004 as a shared service council controlled trading organisation, jointly owned by the Hutt and Wellington city councils. The objective was to provide high quality, safe and environmentally sustainable services with a focus on asset management planning and contracted service delivery.

In 2008 Upper Hutt City Council contracted Capacity to manage its water, stormwater and wastewater services and assets.

On November 1, 2013, Capacity's ownership was restructured with Hutt, Porirua, Upper Hutt and Wellington City Councils all becoming equal shareholders.

Capacity merged with Greater Wellington Regional Council's water supply group on 19 September 2014 to form Wellington Water. Wellington Water manages water, stormwater and wastewater service delivery in the Wellington region.

Five local authorities are joint and equal owners of Wellington Water (Greater Wellington Regional Council, Hutt, Porirua, Upper Hutt and Wellington City Councils). A representative from each authority sits on the regional Wellington Water Committee and a board of five independent directors governs the organisation.

Ownership of the three water assets remains with Councils who retain final decisions on all investment matters and set their own policies, control rates and user charges. Councils also keep on consulting with their ratepayers through their long term plans and set levels of service and investment to achieve three waters outcomes. Wellington Water acts as an advisor assisting Councils to achieve their targeted levels of service and outcomes and ensuring consistency across the Wellington Region.

6.2.2 Wellington Water Committee

As mentioned above, Wellington Water Committee has a total of five members appointed by each of the local authorities owning Wellington Water (Greater Wellington Regional Council, Hutt, Porirua, Upper Hutt and Wellington City Councils). The Chairperson and Deputy Chairperson are elected by the Committee once all members have been appointed.

The terms of reference adopted by Wellington Water Committee[3] specify that the Committee should strive to make all decisions by consensus. In the event that a consensus on a particular matter before the

3 Wellington Water Committee Terms of Reference http://www.gw.govt.nz/assets/council-reports/Report_PDFs/2014.327a3.pdf

Committee is not able to be reached, each member of the Committee has a deliberative vote. In the situation where there is an equality of votes cast on a matter, the Chairperson does not have a casting vote and therefore the matter subject to the vote is defeated and the status quo is preserved.

The terms of reference also detail the Committee responsibilities as follows:

Governance oversight responsibilities:

Governance oversight of Wellington Water Limited and of the network infrastructure for the delivery of bulk water, water reticulation, wastewater and stormwater services in the areas of the four cities. This is detailed through a number of stated shareholders requirements (a list of these requirements is available in the terms of reference referred to in footnote 3).

Shareholders' responsibilities

To the extent that each Shareholder delegates its relevant powers to the Committee member it appoints, the Committee will provide a forum for the Shareholders to meet and exercise their powers in relation to Wellington Water Limited.

6.2.3 Scale

The scale of Wellington Water is summarised below:

- population of approximately 400,000 people
- 140,000 water connections
- 2,500 km of water mains
- 2,200 km of wastewater mains
- 1,700 km of stormwater pipes
- 140 employees
- Management of combined annual asset work programmes of approximately $180 million

6.2.4 Objectives

Wellington Water has four primary objectives:

- To operate as a cost effective, resilient and successful business, returning benefits to their shareholder councils and their communities.
- To build a reputation for reliability, excellence, effectiveness, efficiency, courtesy and integrity, and as an organisation where people want to work.
- To develop and deliver sustainable and integrated service delivery and management of their clients' assets.
- To ensure the people of the Wellington region have safe reliable drinking water, effective wastewater collection and treatment, clean harbours, healthy streams and protection from flooding.

6.2.5 Target Savings

The following savings were identified in Capacity's 2009/2010 Annual Plan:

- Achieved savings of $391,000 on costs for services for Wellington City Council (90% of target savings)
- Committed to an ongoing reduction in costs of $737,000 per year.

In Capacity's 2009/2010 Annual Plan, Peter Allport shared his concernes with the structure of the organisation to this date (these should be addressed by the implementation of Wellington Water in 2014):

"We continue to discuss the benefits of sharing services with Greater Wellington and the other councils in the region. It may not be necessary to amalgamate councils to share services and achieve significant cost savings, as is evidenced by the shared services approach we are already taking across a large portion of the Wellington region.

However, it is clear to me that we have reached a plateau in cost and service delivery improvement. We are unlikely to achieve, without further fundamental structural changes, increased integration and network standardisation. Just adding network components to what we already do without accompanying information systems and operational standards integration and rationalisation will not deliver the reduced costs and further quality improvement being sought."

Peter Allport - Chairman

The following savings were identified in Capacity's 2011/2012 Annual Plan:

- Delivered over $3.8million savings to its shareholding councils in eight years
- It was estimated that coordinating water services from the four councils in the Wellington region and the greater Wellington Regional Council bulk water distribution services in one entity would deliver in the vicinity of $5–$7million a year.
- Another option was to coordinate water services from the four councils in the Wellington region and to keep the greater Wellington Regional Council bulk water distribution as a separate entity. It was estimated that this option would deliver in the vicinity of $2 million a year.

Discussions with management staff at Capacity prior to the Wellington Water integration identified a number of short comings of this Shared Services model over an asset owning CCO being;

- Difficulties with alignment of interests between the Councils
- Political interference from individual Councils typically focussed on the short term
- Funding uncertainties and the requirement to often secure funding on a project by project basis
- Lack of a single common LTP and strategy across the region
- Differences with systems and procedures across the Councils

6.3 TasWater

6.3.1 Introduction

Tasmania is an island state of Australia that is located 240 kilometres to the south of the Australian mainland. The state has a population of 507,626 (as of June 2010 census), almost half of which resides in the Greater Hobart precinct, while the other half is spread over approximately 68,000 square kilometres.

Prior to 1 July 2009, water and sewerage services were provided by 29 Councils and 3 bulk water authorities. As a result of significant reform of Tasmania's water industry, four Corporations were formed and commenced trading on 1 July 2009. Between July 2009 and July 2013 water and wastewater services were managed by:

- Three Regional Corporations: Ben Lomond Water, Cradle Mountain Water and Southern Water. These corporations were owned by local government councils within their respective regions.
- One shared services business: Onstream, owned by the three Regional Corporations.

On their commencement, the three Regional Corporations managed the transfer of some $2 Billion in water and sewerage assets from the previous ownership by 29 councils, and also the transfer of approximately 615 staff.

The three Regional Corporations focused on:

- Delivering the Compliance Implementation Plans agreed with industry's major regulators:
  - in 2008 twenty three towns used to be on permanent boil water notices
  - 2007/2008 “State of the Industry” reported that none of the 78 wastewater treatment plants fully complied with its licence.
- Introducing a new billing system: prior to 2009 there used to be multiple water and sewerage tariff structures.
- Water conservation: 54,000 water meters were installed in southern Tasmania for the first time as well as others in unmetered areas of the state

6.3.2 TasWater: Moving to a Single Corporation

In September 2011, the Board Chairman initiated discussions with owner councils about the potential benefits that could ensue from a single state-wide water and sewerage corporation. After a series of reviews, council owners in all regions agreed to move to a single corporation that merged the four corporations initially established in 2009.

Specific governance arrangements were agreed that are now largely incorporated in the Water and Sewerage Corporation Act 2012 (Tas), the new constitution and the new Shareholders' Letter of Expectation. The new corporation was registered as a proprietary limited company under Corporations Act 2001 (Cth) on 5 February, 2013.

6.3.3 TasWater

TasWater was formed on 1 July 2013. It is a state-wide corporation owned by 29 local councils. TasWater is the second largest business in Tasmania with a total revenue of approximately $234 million per year (2013/14) and an estimated asset value of approximately $2.7 billion.

The scale of TasWater is summarised below:

- annual turnover of $234 million
- total assets $2.7 billion
- over 200,000 water connections
- over 178,000 sewerage connections
- 6,380 km of water mains
- 4,288 km of gravity mains, 380 km of rising mains and 728 sewer pump stations
- 788 employees
- combined annual capital expenditure approximately $100 million

6.3.4 Objectives

The objectives for TasWater prescribed in the Water and Sewerage Corporation Act are to:

- efficiently provide water and sewerage functions in Tasmania
- encourage water conservation, the demand management of water and the reuse of water on an economic and commercial basis
- be a successful business, and to this end
  - operate its activities in accordance with good commercial practice
  - deliver sustainable returns to its members
  - deliver water and sewerage services to customers in the most cost efficient manner

6.3.5 Priorities

The key priorities defined by TasWater in their 2015/17 corporate plan are:

- Improving safety performance and developing a zero harm culture;
- Building a comprehensive 10 year asset management plan that provides the foundation for ongoing infrastructure investment program;
- Transition of customer charges to target tariffs by the end of FY2020 with the majority at target by the end of FY2018;
- Targeted improvements in water quality and wastewater compliance;
- Improvements in trade waste influent quality through management of consents and contracts including implementation of a consistent pricing and compliance regime;
- Further improvements in customer service outcomes and experiences;
- Investments in increasing employee capability and underpinning business systems;
- Delivering target distributions to owner councils of $30 million in 2014-15, $31.2 million in 2015-16 and $32.4 million in 2016-17.

6.3.6 Target Opex Savings

By merging into a single CCO, TasWater is anticipating savings of approximately $7million per year through the standardisation of processes and procedures, the removal of duplication and a reduction in employee numbers (TasWater reduced their number of employees from 842 to 788 FTE). Their total expenditure being $234million in 2014, this represents target savings of approximately 3%.

Based on the 2013/2014 Annual report, TasWater identified that $5M savings were achieved during their first year of existence.

6.3.7 Target Capex Savings

TasWater plans to deliver approximately $100M in capital works each year. TasWater is currently under the process of building a comprehensive 10 year asset management plan that will provide a detailed investment program for the years to come.

At this stage the capital works program will be geared towards addressing compliance objectives until 2019. Projects to 2014-15 are weighted towards addressing water quality, while 2015-16 onwards is weighted towards wastewater initiatives. Subsequent to 2019, it is anticipated that the focus of the Capital Works program will shift towards renewals for the remainder of the ten year period.

6.4 Scottish Water

Case Study: Formation of a single water authority (Scottish Water) from council ownership yielding in excess of 25% (£71m Opex and £494m Capex) savings within the first 4 years of existence.

6.4.1 Introduction

With a population of in excess of 6 million Scotland's water customers are spread over 78,789 square kilometres 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 it 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 this 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.

The higher compliance levels were mainly brought about by the introduction of two pieces of legislation namely 'The Water Supply (Scotland) Regulations 2001' and 'The Urban Wastewater Treatment Scotland Amended Regulations 2003 Act'. 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.

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.

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 programme set out investments of £2.3B over 4 years from 2002 to 2006. The efficiency challenge was set to deliver the Capital programme 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.

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.

6.4.2 Capex Savings

In order to achieve the capital saving required a review of the 3 previous water authorities Capital Programmes 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:

- Rationalisation of the assets
- Rationalisation of working practices
- Strategic review of investment beyond the current 4 years
- Engagement of the Supply chain partnerships to deliver programmes of work
- Regulatory challenge- Level of quality and approach.
- Organisational change- Asset ownership operating model

6.4.2.1 Rationalisation 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.

6.4.2.2 Rationalisation of working practices

A review of working practices saw rationalisation of IT systems with preferred software being adopted for ‘Scottish Water’ model delivering savings in license monies. 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 to ensure savings were realised through a controlled supply chain.

6.4.2.3 Strategic review of investment beyond the 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.

6.4.2.4 Engagement of the Supply chain partnerships to deliver programmes of work

One of the biggest areas to yield economies of savings and compliance was through the supply chain. Engaging delivery partners to deliver programmes 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 alliance which consisted of clients/contractors/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.

6.4.2.5 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.

6.4.2.6 Organisational change- Asset ownership model

A significant organisational 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 organisational 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.

6.4.3 Opex Savings

This area saw quite a significant change in working practices, where people worked and how people worked.

- Refinement of operational areas
- Re-organisation of line management
- Rationalisations and reprioritisation of routine tasks
- Reduction in staff through redeployment and natural waste

- Asset management of inventory
- Consolidation of common services

6.4.3.1 Refinement of operational areas

Rationalisation 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 rationalisation of operators both in water and wastewater all contributed to a reduction in operating costs.

6.4.3.2 Re organisation of line management

Following on from the refinement of operational areas was the re alignment of line management. This saw a significant rationalisation 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 became the general manager of the west region Scottish Water. More refinements were made as the company matured.

6.4.3.3 Rationalisations and reprioritisation of tasks solely aimed at compliance

A review of working practices initially form a desk top study driven from the need to cut 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.

6.4.3.4 Reduction in staff through redeployment and natural waste

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 were compensation in terms of a lump sum was available.

6.4.3.5 Asset management of inventory – Information was significant

What became obvious from the early stages of the formation of Scottish Water was that the previous companies although they collected similar data did this through varies different sources and different ways. Rationalisation of how and in particular why data was being collected was undertaken the latter bring savings. 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.

6.4.3.6 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 were savings could be made. 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 and Scottish Water saved on administration. In order to realise other potential areas of savings and assess the level of savings possible the rationalisation 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.

6.5 England

6.5.1 Overview

The model of water utility ownership in England is now very different to that in New Zealand. In the past though there were broad similarities. We have included England as a valuable source of benchmark information because of this historical similarity and the extensive data sets/benchmarks available that have been independently assured and scrutinised by the regulator. The potential transition from regional municipality (status quo) to CCO for three water services shares several similarities with the transition from Local Authorities to privatised monopolies which occurred in England and Wales in 1989.

Since English companies are privately owned and can (and do) make profits from the water and sewerage services they provide, companies are strictly regulated by a non-ministerial branch of the government. This regulator, 'Ofwat', has collected large volumes of performance information from companies, according to strict guidelines since 1989. The net result of this ownership structure is that the model is often used for best practice comparisons across the globe. In particular, the private ownership brought a clear focus on delivering efficiencies and the strict regulatory regime brought a clear focus on performance improvement. The two together, ensured that companies did not focus on one at the expense of the other. Whilst the private ownership and regulatory involvement is not a suitable model for all countries, and significant efficiencies and performance improvements can certainly be achieved without these parameters, many elements of the English model are suitable for benchmarking purposes since they highlight the scale of improvement that can be achieved through economies of scale.

In particular we aim to use this benchmarking analysis to provide evidence relating to:

- The potential magnitude of performance/service improvements that could be achieved through greater council consolidation
- The potential magnitude of capital efficiencies that could be achieved through greater council consolidation
- The potential magnitude of operational efficiencies that could be achieved through greater council consolidation

- The potential magnitude of capital delivery (i.e. project-related) efficiencies that could be achieved when operating in a more consolidated council structure

6.5.2 Historical Development of Water Utilities in England

In 1945 there were more than 1,000 bodies involved in the supply of water and approximately 1,400 bodies responsible for sewerage and sewage disposal. Most of these bodies were local authorities and planning for water resources was a highly localised activity, with little co-ordination at either a regional or national level[4].

After the war, new legislation was implemented that aimed to consolidate water authorities so that they could benefit from economies of scale and to provide funds for investment in rural areas.

The Water Resources Act 1963 led to further changes, which were in response to a severe drought in 1959 and flooding events in 1960. The Act recognised the importance of a co-ordinated approach to water resource planning and was intended to make sure that existing and future water resources were adequately conserved.

The Water Act 1973 established 10 new regional water authorities. These authorities were responsible for managing water resources and supplying water and sewerage services on a fully integrated basis. These authorities took over control of the services that local authorities had previously been supplying. The area that each water authority covered was broadly based on river catchment areas.

The Water Act 1973 required the regional water authorities to operate on a cost recovery basis. Capital to meet the necessary investment was raised by borrowing from central government and from revenue for the services provided. Central government set financial constraints and performance aims for each authority.

Although the restructuring had some improvements, it was difficult for water authorities to invest significantly in their assets. Additionally, the structure of the authorities meant that they were responsible for both discharging treated water into the environment and also monitoring discharges into the environment – both their own, and that of others. At the same time during this period increased environmental demands were made on the water industry, both with the public in favour of higher standards, and from more stringent European legislation.

The ten publicly owned water and sewerage authorities were privatised in 1989. Privatisation was achieved by transferring the water supply and sewerage assets, and the relevant staff, of the ten existing regional water authorities into limited companies (the water and sewerage companies).

To protect the interests of customers and the environment, three separate, independent bodies were established to regulate the activities of the water and sewerage companies. These were:

4 www.ofwat.gov.uk

- the National Rivers Authority (now the Environment Agency) – as the regulator for the environment
- the Drinking Water Inspectorate – as the regulator of drinking water quality
- the Director General of Water Services (now Ofwat) – as the economic regulator

It is the final of these regulators, Ofwat, that sets prices (i.e. determines how much money companies can charge customers for the services) and this is the principal reason that the economic regulator collected so much benchmark information.

6.5.3 Company Size and Key Attributes

The consolidation of thousands of local, publically-owned, bodies into effectively 10 large Water and Sewerage Companies (termed 'WaSCs') and 8 smaller Water only Companies (termed 'WoCs') means that English companies are very large by international standards, even though England as a whole is relatively small. The following table summarises key features relating to company size from some of the water utilities in England and Wales.

Table 6.1: Sample of water utility company size

		Attributes of Company Size								
Company	Type of Company	No. of Employees*	Total Connected Properties Table 2, Line 1	Population Table 2 Line 20	Domestic Props Connected to Sewerage System Table 3 Line 1	Number of properties connected for water supply only Table 4 Line 6	Number of properties connected for water and sewerage services Table 4 Line 7	Number of properties connected for sewerage services only Table 4 Line 8	Total length of mains (km) Table 11 Line 14	Total length of sewers Table 16 Line 14
Anglian Water	WaSC	4,000	2,074,700	4,388,330	2,649,400	283,736	1,790,903	858,537	37,633	44,135
Bristol Water	WoC	500	510,500	1,162,940	NA	510,533	NA	NA	6,670	NA
Dee Valley Water	WoC	170	122,004	265,193	NA	122,004	NA	NA	1,959	NA
Northumbrian Water	WaSC	2,933	1,949,400	4,338,390	1,228,500	800,122	1,149,191	87,314	17,008	29,868
Portsmouth Water	WoC	235	30,389	659,550	NA	303,891	NA	NA	3,270	NA
Sembcorp Bournmouth Water	WoC	350	201,610	437,600	NA		NA	NA	2,822	NA
Severn Trent Water	WaSC	3,100	3,425,400	7,673,610	3,901,800	318,414	3,106,944	794,836	46,712	54,747
Southern Water	WaSC	2,092	1,057,020	2,341,236	1,875,290	89,353	967,666	907,622	13,658	21,712
South East Water	WoC	749	886,300	1,988,000	NA	886,305	NA	NA	14,283	NA
South West Water	WaSC	1,227	783,500	1,671,350	700,900	88,618	694,924	6,022	15,101	9,328
Thames Water	WaSC	4,700	3,611,281	8,667,330	5,772,557	65,726	3,545,555	2,016,963	31,453	68,359
United Utilities	WaSC	5,300	3,207,000	6,865,850	3,209,600	105,155	3,101,867	107,777	42,476	43,887
Welsh Water	WaSC	3,000	1,387,000	2,925,570	1,402,700	121,881	1,265,125	137,575	27,172	18,522
Wessex Water	WaSC	2,000	583,031	1,257,380	1,180,787	60,580	522,451	658,336	11,509	17,443
Yorkshire Water	WaSC	2,500	2,227,400	4,851,160	2,217,700	111,183	2,116,229	101,449	31,071	31,154

WoC - Water only Company
WaSC - Water and Sewerage Company

Source: Data taken from individual company Annual Returns submitted to the regulator

Portsmouth Water and Dee Valley Water are the most comparable to the size of the New Zealand councils under consideration in this review. These two companies are, however, WoCs. They therefore have no responsibility for sewerage or stormwater services. Southern Water and Wessex Water are perhaps also useful for comparison purposes since they represent the smallest of the England and Wales WaSCs. In reality though most of the information analysed in this section of the report represents normalised data or industry averages so the discrepancy in size of the companies between England and New Zealand is less of an issue. In the context of the options being considered in this Engineering Assessment therefore, we have made the following broad assumptions:

- Status quo/current situation is broadly equivalent to the England and Wales Local Authorities pre-1973
- CCO is broadly equivalent to the England and Wales water authorities established in 1973 and the subsequent privatised monopolies post-1989
- The Enhanced Shared Services option (ESS) is perhaps somewhere between the two; sharing some of the characteristics of status quo/pre-rationalisation/privatisation and some of the characteristics of the CCO/post rationalisation/privatisation model.

Given the significant differences between private and public utilities these assumptions and generalisations listed above can only ever be applied for making broad comparisons. Despite this, the England and Wales model is still useful for benchmarking purposes in the context of this study since the data is of such high quality and longevity.

The following table summarises some of the key attributes of the companies in England and Wales other than those directly related to size. It is important to consider attributes such as these in this Engineering Assessment because some of the variations in metrics, benchmark information and company performance will be a function of the different regime in which the companies operate.

Table 6.2: Key ownership and operating parameters at an industry level for England and Wales

	England					
	WaSCs		WoCs		All	
	Average	Total	Average	Total	Average	Total
Ownership Model	9 private WaSCs based on catchment areas. 10 WaSCs if Welsh Water is included		8 WoCs based on historic water companies			
Funding	RPI +/- K Customer bills					
Regulators	Strong regulators that drive efficiency and performance: - Ofwat - Environment Agency - Drinking Water Inspectorate					
Outsourcing/Insourcing	Most WaSCs and WoCs outsource Engineering/Capital Delivery					
Average no.of employees	3,206	28,852	463	3,238	2,006	32,090
FINANCE						
Customer charges						
Water bill per customer	£ 186		£ 160		£ 174	
Sewerage bill per customer	£ 224		N/A		£ 224	
Turnover						
Turnover (m GBP)	£ 989m	£ 8,905m	£ 107m	£ 750m	£ 603m	£ 9,655m
Profit						
Profit (m GBP)	£ 205m	£ 1,842m	£ 14m	£ 100m	£ 121m	£ 1,942m
Expenditure						
Capital maintenance - water (m GBP)	£ 126m	£ 1,130m	£ 34m	£ 238m	£ 85m	£ 1,368m
Operational expenditure - water (m GBP)	£ 183m	£ 1,645m	£ 52m	£ 363m	£ 126m	£ 2,008m
Capital maintenance - sewerage (m GBP)	£ 177m	£ 1,592m	N/A	N/A	£ 177m	£ 1,592m
Operational expenditure - sewerage (m GBP)	£ 172m	£ 1,551m	N/A	N/A	£ 172m	£ 1,551m
CLEAN WATER						
Assets						
Clean water connections (Nr)	2,191,411	19,722,701	554,586	3,882,103	1,475,300	23,604,804
Length of clean water mains (km)	262,283	29,143	53,785	7,684	316,068	19,754
Distribution Input						
Distribution Input (Ml/d)	1,244	11,199	363	2,540	859	13,739
Meter penetration						
Measured households	710,154	6,391,382	212,253	1,485,773	492,322	7,877,155
Unmeasured households	1,235,432	11,118,890	326,234	2,283,640	837,658	13,402,530
Percentage measured households of total		37%		39%		37%
Leakage						
Leakage (Ml/d)	301	2,713	70	488	200	3,201
Leakage (%)		24%		19%		23%
SEWERAGE						
Assets						
Length of sewers (km)	35,746	321,713	N/A	N/A	35,746	321,713
Sewerage connections (Nr)	2,550,939	22,958,447	N/A	N/A	2,550,939	22,958,447
Volumes						
Volume wastewater returned (Ml/d)	1,051	9,455	N/A	N/A	1,051	9,455
Volume domestic (Ml/d)	993	8,940	N/A	N/A	993	8,940
Volume trade effluent (Ml/d)	57	515	N/A	N/A	57	515
Faliures						
Gravity sewer collapses (Nr)	325	2,928	N/A	N/A	325	2,928
Unsatisfactory intermittend discharges (Nr)	32	285	N/A	N/A	32	285
Sewer blockages (Nr)	16,191	145,723	N/A	N/A	16,191	145,723

Note: At the time of writing this report £1 equivalent to $1.97 NZ

6.5.4 Benefits Delivered

There are many success stories relating to the model of utility ownership and structure in England and Wales. As discussed above, generally speaking the changes that occurred pre- and post- 1989 in England and Wales are broadly equivalent to the New Zealand options under consideration here of status quo and CCO respectively. The benefits delivered in England and Wales after 1989 therefore could represent, at least at a high level, the potential benefits that changing to a CCO structure may produce. Some of the key benefits delivered after 1989 in England and Wales include[5]:

- Industry leakage levels decreased[6] from 4781 Ml/d just after consolidation in 1992 to 3414 Ml/d over a period of 10 years to 2002. This represents an improvement of nearly 30%
- The percentage of metered households increased over a period of 10 years from circa 2% just after consolidation in 1990 to almost 20% in 2000.
- The number of serious pollution incidents across the industry decreased over a 10 year period from 37 shortly after consolidation in 1995 to 19. This represents an improvement of nearly 50%.
- The number of written complaints across the industry decreased[7] over a period of 10 years from 160,000 just after consolidation in 1993 to 140,000 in 2003.
- The number of billing contacts across the industry decreased[16], over a period of 10 years, from circa 19,000 to circa 15,000.

Since privatisation, the regulatory framework in England and Wales has allowed the companies to invest about £85 billion in maintaining and improving assets and services. This is equivalent to more than £3,500 for each household in England and Wales at no additional cost to the taxpayer. At the same time, the regulatory framework has ensured that bills for customers are more than £100 lower than they would otherwise have been.

This high level review demonstrates that the potential change from status quo to a CCO model could bring about significant performance improvements. The potential nature and scale of these will be discussed in more detail in the following sections.

6.5.5 Summary

The water utility framework in England and Wales is quite different to that in New Zealand. Companies are relatively large, privately owned and heavily regulated. Prior to privatisation water utilities were publically owned, small and regional. The changes that have occurred since privatisation (i.e. performance improvement and efficiency generation) are therefore relevant to this project. They can provide an indication of the nature and scale of any potential improvements consolidation to a CCO or ESS may bring. For this particular benchmark region (England and Wales) we have provided evidence that since

5 www.ofwat.gov.uk

6 Security of supply, leakage and the efficient use of water 2002-03 – Ofwat

7 Levels of service for the water industry in England & Wales 2002-2003 report

consolidation and privatisation companies have delivered:

- Significant performance improvements (circa 80-90%) across all four sub-service areas in the 25 years since privatisation. Year on year, average performance improvement levels in the years following consolidation were circa 7%
- Company-level capital efficiencies in the region of 1-3% per annum at an industry level
- Company-level operational efficiencies in the region of 0-3% per annum at an industry level
- At a project level - significant Capex and Opex efficiencies (sometimes up to 25% of total scheme costs) in project delivery through the use of innovation, intelligent procurement and the utilisation of existing assets

It is important to note that the values quoted here for performance and efficiency improvement represent the 'low hanging fruit' in the years following consolidation (perhaps 10-15yrs following a change in model). After this time it is likely that further performance improvement and efficiency gains will be more modest. It is unlikely therefore that there is a linear relationship with the values quoted herein and their sustained effect.

Given the different drivers between the countries these values should not be used as absolute values in the decision making process supporting the potential move to a CCO model. However, they do provide relative indications and guidance regarding the scale and scope of potential improvements and they could therefore be used to determine frontier or stretch performance over the coming years if consolidation occurs in New Zealand.

6.6 Benchmark Cost and Performance

6.6.1 Introduction

Benchmarking is the process of comparing processes and performance metrics from one's own organisation with best practice from similar organisations. Performance benchmarking is becoming more of a 'top of mind' topic for organisations that manage infrastructure. This section along with Appendix A provides an overview of benchmarking as a concept in relation to the case studies and where appropriate describes specific benchmarking examples.

The performance benchmarking is useful for assessing the scope and scale of service benefits that could be delivered through the different utility models. The financial benchmarking is useful for assessing the scope and scale of efficiency benefits that could be delivered through the different utility models.

6.6.1.1 Strengths of Benchmarking

Benchmarking can be a powerful tool in supporting decision making and conducting technical assessments. When utilised appropriately with assumptions and data limitations fully integrated into the benchmarking methodology, the results can indicate the potential scope for performance improvement and efficiency savings. Benchmarking can also identify areas of best practice and 'frontier' performance. It is

particularly powerful for high-level assessments of scale; for example, identifying where a particular organisation is reporting performance 10 or 15% behind another company or organisation. It is less useful for more granular or 'bottom-up' comparisons; for example, it would be difficult to use benchmark information to determine if a company should target 127 sewer overflow incidents or 164 on an annual basis. However, for decision support purposes, it can be an effective tool for activities such as target setting, high level comparisons of company performance, top-down assessments of financial efficiency as well as being useful in the identification of best practice.

6.6.1.2 Benchmarking Limitations

There are, however, inevitable limitations with benchmarking. In particular, benchmarking will almost never produce/represent a like-for-like comparison. Business processes are complex. They have multiple dependencies and 'touch-points' with people, systems as well as other data sets. The likelihood therefore of two data points, from two different organisations, have been reported using two identical business processes, is extremely low. This places some limitations on the value of benchmarking.

As a topical example, in the water sector in England, the publically owned regional authorities were privatised in 1989. At this time the regulator 'Ofwat' was formed to protect the interests of customers. There followed two decades of increased investment and improved performance. During this time the regulator relied heavily on the performance information sent from the companies in order to determine which companies were performing best, which companies needed to 'catch-up' and by how much. This situation culminated in 2009 with companies asserting that the regime was burdensome and that Ofwat was making decisions (often resulting in millions of pounds in penalties for some companies) based on benchmark data that could never represent a like-for-like comparison. In 2011 a national report into the sector[8] agreed with this assessment and the regulatory regime began to change. Now, in 2015, companies in England and Wales still collect KPIs (Key Performance Indicators) and 'benchmark' data. However, companies now collect and report a much more restricted data set. Ofwat only compares performance across companies for a handful of key measures (e.g. leakage, customer satisfaction) and most of the performance reporting is intra-company rather than inter-company; i.e. a company compares its performance with itself using historical trends rather than against other companies.

Nevertheless, despite the limitation of comparisons never truly being like-for-like, benchmarking and benchmark information is still an important consideration in any decision making process. It can provide a valuable sense of scale and scope (e.g. the order of magnitude of efficiency savings or performance improvement expected) as well as being crucial to the identification of best practice and process improvement. In order to utilise benchmarking and benchmark data in this manner, and mitigate the impacts of any unsuitable and inappropriate comparisons, the following need to be considered:

- Where possible the range of benchmark information should be as large as possible
- It should be drawn from as many sources as possible (e.g. national and international)
- Benchmarks should be drawn from the largest data set possible
- Any assumptions utilised in collecting/reporting the data should be documented

8 'Review of Ofwat and consumer presentation on the water sector'. Report for Secretary of State and Welsh Minister by David Gray.

- Any significant exclusions/inclusions to the reported numbers and the information behind them should be fully documented
- Normalisation should be applied wherever feasible (e.g. normalising a metric to the length of main)
- Consideration of 'special factors' (e.g. availability/non-availability of abundant/cheap water resources vs. leakage targets. Historical practice that needs time to unwind – e.g. widespread use of inappropriate pipeline materials)

6.6.2 Choice of Benchmarking Data

For this particular commission, and in line with the framework described above, we have conducted benchmarking in targeted areas using information from a wide range of sources. This will provide a robust picture of the type of information available for benchmarking, the purpose and value of that information as well as presenting the results of any suitable benchmarking pertinent to this particular project.

6.6.2.1 Using Benchmarks to Identify Potential Improvements

We can use the information from this national and international benchmarking analysis to determine where there is scope for performance and efficiency improvements. Our preliminary analysis of the structure and performance of other water utilities both nationally and internationally has shown that a consolidated, larger and more focused organisation may be able to realise performance and efficiency improvement in the following areas:

- Improved environmental performance
- Improved customer satisfaction
- Increased operational (Opex) efficiency
  - People
  - Power
  - Chemicals
- Increase capital (Capex) efficiency
  - Identification of synergies within capital programmes
  - Better understanding of risks of issues to prioritise and rationalise investment
  - Intelligent batching and delivery of capital schemes
  - Better access to innovative and forefront delivery resources

6.7 Benchmarking Summary Savings

The table below summarises Capex and Opex savings identified as part of the case studies and benchmarking work:

Table 6.3: Summary of Capex and Opex Savings

Source	Summary of Capex and Opex Savings
New Zealand – Watercare Case Study	Watercare achieved savings of 2% of operating expenditure through efficient procurement in 2011/12.
	Watercare was looking at achieving operating expenses of at least 5% below budget. For 2011/12, the company achieved an actual operating expense that was 4% below budget as a result of labour cost savings, lower asset operating costs and reduced other costs including professional fees and general overheads.
	Watercare achieved $104million cost efficiency across the region between November 2010 and July 2012 – this is approximately 20% savings based on the capital work programme from 2011/12 Annual report.
	These savings were achieved in addition to any previous savings realised by the CCOs established in the Auckland Region prior to the Auckland amalgamation (e.g. Metrowater and Manukau Water)
New Zealand – Wellington Water Case Study	Capacity delivered over $3.8million savings to its shareholding councils in eight years.
	It was estimated that coordinating water services from the four councils in the Wellington region and the greater Wellington Regional Council bulk water distribution services in one entity (Wellington Water) would deliver in the vicinity of $5–$7million a year.
Australia – Tasmania Case Study	Target savings of $7million per annum through the standardisation of processes and procedures, the removal of duplication and a reduction in employee numbers. Total expenditure was $234million in 2014. This represents a total saving of approximately 3%. First year achieved $5M savings.
	TasWater plans to deliver approximately $100M in capital works each year.
	TasWater reduced number of employees from 842 to 788 FTE.
	These savings were achieved in addition to any previous savings realised by the four water corporations established in Tasmania prior to the transition to TasWater.
Scotland – Scottish Water Case Study	Scottish Water achieved 25% (£71m Opex and £494m Capex) savings within the first 4 years of their existence.
	Within the first 2 years 20% savings for Opex and 21.5% savings for Capex.
	Target of 22% savings over the capital programme.
England - Benchmarking	For a CCO model Capex (inclusive of synergies) and Opex (inclusive of FTE reduction) up to 3% per annum (this means a further 3% reduction form year Y to year Y+1) for the first 15 years, stepping down to 2% per annum for 10 years and then 1% per annum after that.
	For the ESS model Capex (inclusive of synergies) and Opex (inclusive of FTE reduction) up to 1.5% per annum (this means a further 1.5% reduction form year Y to year Y+1) for the first 15 years, stepping down to 1% per annum for 10 years and then 0.5% per annum after that.

Appendix A gives further detail and evidence on benchmarking in relation to delivering savings.

7 Asset Management Capability

7.1 Why Asset Management is key

The benchmarking section has highlighted the relative scale of efficiencies and performance improvement that has been delivered in other countries and water utilities over the world. There are many individual mechanisms by which other companies have achieved significant performance and efficiency improvement. Some of these methods/approaches are easier to apply and embed in larger organisations where roles can be dedicated to a particular function rather than shared.

This section of the report focuses on the potential benefits of improving an organisation's Asset Management capability. Although companies have adopted many approaches over the world to drive efficiency and performance improvements, a significant number of these approaches (if not all of them) could be argued to be the result of practices founded on improved and best practice Asset Management.

The most recent and internationally recognised definition of Asset Management is:

"The coordinated activity of an organisation to realise value from assets."

Source: International Standard - ISO55000

Utilising this definition it is clear why improving Asset Management capability is fundamental to the delivery of improved financial, environmental and customer performance.

This section on the report is intended to provide further detail on how, at a system and process level, a consolidated CCO might realise some of the improvements described in preceding sections of the report. It will also summarise the potential benefits, utilising experience from other countries that a change in Asset Management approach might bring to a CCO. This is timely and relevant since the consolidation of the three councils will inevitably lead to a change in Asset Management approach by organic change whether there is an internal drive for such a change or not. There is therefore opportunity here, since organisational change is likely to be occurring anyway, to make either small iterative changes to, or even large scale changes to, existing Asset Management frameworks. Either approach will yield benefits to a CCO or consolidated organisation.

7.2 Benefits of Asset Management

The Institute of Asset Management defines the benefits of good asset management as[9]:

- A reduction in the total costs of operating assets
- A reduction in the capital costs of investing in the asset base
- Improved operating performance of assets (reduce failure rates, increase availability etc.)
- Reduced potential health impacts of operating the assets

9 'An Introduction to Asset Management - A simple but informative introduction to the management of physical assets By Robert Davis'

345904///1/B 07 April 2015
P:\Auckland\NZL\01 Projects\345904 - Waikato CCO Business Case Analysis\04 Working\Template 1 (Document Type)\02 Documents\Deliverables\150505_EngineeringAssessment_Final.docx

- A reduction in the safety risks of operating the assets
- Minimising the environmental impact of operating the assets
- Maintaining and improving the reputation of the organisation
- Improved regulatory performance of an organisation
- Reduced legal risks associated with operating assets

It is important to consider the individual and combined asset management capability of the three councils in question. This is because some of the performance improvements and efficiencies highlighted in the preceding sections are only achievable with the specialist, focused, high-calibre analysis and decision making abilities prevalent in organisations with mature Asset Management capabilities. In particular, many of the efficiencies described above would not be possible without a dedicated Asset Management function to conduct the analysis and support the investment decision framework. Such Asset Management functions are only really feasible and economic in larger organisations with larger programmes (by way of example, some companies in England and Wales may have in excess of 200 people working in solely dedicated Asset management team who have a remit to effective plan and prioritise investment). Going forward therefore, one of the less tangible benefits of the proposed consolidation of councils will be the potential for Asset Management capability to improve further. This will produce a cascade effect related to company and financial performance which is detailed in Appendix B.

8 Inputs for Financial Model

8.1 Assumptions

8.1.1 Capital Cost Estimates Savings

In order to maximise synergies, the ownership of assets, how they will be operated and the costs associated with these tasks must be established. The CCO option addresses all of these points as the ownership, operation and costs will sit within CCO, A joint LTP will set out prioritisation and leadership and accountability is well defined through the very nature of its structure.

The ESS model does not fully address the key enabler of ownership and will only go part of the way to addressing the operation and costs, Given this the OPEX and CAPEX savings associated with the measurable synergies are short of those achievable through the CCO.

Capital costs were adjusted based on engineering analysis. The following assumptions were made:

- **Compliance:** All savings would be made through synergies which would provide more effective solutions. No savings would be obtained by reduction in service. It should be noted that as New Zealand does not have a regulator there is no regulatory business plans against which savings can be measured.

- **CAPEX Estimates:** Capital cost estimates required for the establishment of the synergies described in Section 4 were estimated based upon Watercare planning cost database when no other information was available. A large portion of Watercare's work is not rural which is accounted for in their planning rates. Therefore the rates were not inflated any further. Pipe costs were estimated from their diameter and pipe length. Pipe diameters were selected to ensure head losses remain smaller than 3m/km when year 2045 peak flows need to be conveyed (peak wet weather flows were considered for wastewater). Pipe lengths were estimated from the distance taken along roads. Shorter alignments may be possible subject to further investigations.

- **Timing of CAPEX:** Timing for capital expenditures was maintained from the three Councils' existing long term strategy plans as much as possible. Further analysis may show benefits in bringing forward or delaying some of these projects but this was not taken into consideration in this analysis.

- **Estimate for CCO savings:** Based on findings summarised in the benchmarking section, cost savings ranging between 1.5% and 7.25% for CCO and 1.5% for ESS were applied to all capital projects to take into consideration efficiencies related to the establishment of these two models. These savings were applied in addition to the identified project synergies.

- **Exclusions:** Capital cost estimates do not take into account savings on consenting resulting from a lower number of treatment plants as these costs are variable and not easy to identify based on the information provided from the three Councils. Capital cost estimates do not take into consideration potential incomes resulting from selling land where treatment plant will be decommissioned. The cost of asset disposal (such as disposal of small water and wastewater treatment plants) was not included.

The capital cost estimates should provide sufficient contingency and provide basis to identify minimum cost savings based on the information available at the time of this report. A detailed master planning exercise should be carried out to identify potential savings and other supply options with more precision.

8.1.2 Operational Cost Estimate Savings

Evidence of savings within the Operational costs have shown that a significant part of this lies in the reduction of FTE's through -

- Refinement of operational areas
- Re-organisation of line management
- Rationalisations and reprioritisation of routine tasks
- Reduction in staff through redeployment and natural waste
- Asset management of inventory rationalisation of data collection
- Consolidation of common services e.g. laboratory testing
- Deferment of investment through strategic solutions
- Deferment of maintenance activities

The main elements of operating costs are Labour, Power and Chemicals. The current Shared Services arrangement has rationalised the power supplier and the chemical supplier. Although there may be further work which could be done to try and gain further savings through a more collaborated ESS model these will be limited.

The CCO option will enable the FTE rationalisation and hence reductions to take place. It will also address asset ownership and operation to allow the savings through the synergies to be made.

Operational costs were adjusted based on Section 6.6 findings.

Based on findings summarised in Section 6 cost savings ranging between 2% and 5% for the CCO and 1.5% for ESS were applied to operational costs other than staff related costs to take into consideration efficiencies anticipated from the establishment of a CCO. These savings include operational cost savings identified as part of the project synergies and exclude any FTE reduction which is detailed within the main business case analysis report.

8.2 Model Input

The business case for water services assumes that a CCO would start operations at the beginning of year 3 of the 30 year forecast period and hence the business case refers to 28 year forecasts.

Detailed Capex estimates and assumed expenditure programmes for water, wastewater and stormwater are available in Appendix C.

Table 8.1: Estimated CAPEX Savings under each Option

		CCO			
	Status Quo	Max Spend	Base Spend	Min Spend	ESS
Water Supply 30 year Budget	$1,183.3M	$1,162.9M	$1,130.5M	$1,092.1M	$1,165.5M
Waste Water 30 year Budget	$1,173.0M	$1,110.0M	$1,079.0M	$1,042.4M	$1,155.5M
Storm Water 30 year Budget	$409.4M	$403.2M	$392.0M	$378.7M	$403.2M
Total 3 Water Services 30 year Budget	**$2,765.7M**	**$2,676.1M**	**$2,601.4M**	**$2,513.1M**	**$2,724.2M**
Total 3 Water Services 30 year Savings	**$0.0K**	**$89.5M**	**$164.3M**	**$252.6M**	**$41.5M**
Total 3 Water Services 30 year %Savings	**0.0%**	**3.2%**	**5.9%**	**9.1%**	**1.5%**
Total Excluding Storm 30 year Budget	$2,356.3M	$2,272.9M	$2,209.4M	$2,134.5M	$2,321.0M
Total Excluding Storm 30 year Savings	$0.0K	$83.4M	$146.9M	$221.9M	$35.3M
Total Excluding Storm 30 year %Savings	0.0%	3.5%	6.2%	9.4%	1.5%

Table 8.2: Assumed Savings

Assumed CCO savings	
Minimum Capex savings	1.50%
Base Capex savings	4.25%
Maximum Capex savings	7.50%

9 Conclusions and Recommendations

The findings from the Engineering analysis carried out as part of this review support the formation of a CCO based on the following:

- It will facilitate the ability to effectively manage and deliver the investment programme of work for the next 30 years.
- It will enable the realisation of cost savings in capital and operational expenditure.
- It will facilitate an increase level of resilience security of supply.
- It will provide a solid foundation to address the future growth and economic development challenge.
- It will provide more opportunity to strategically manage assets where there are interdependencies.
- It will provide the platform to deliver a high level of service through a centre of excellence.

Hamilton, Waikato & Waipa must expand their network and upgrade their treatment works to meet future growth demands. The CCO option would allow the ability to effectively manage a larger capital programme; it would also present opportunities for cost savings through economies of scale and enable strategic decisions to be made to improve resilience providing more flexibility and resilient options to meet the future demands.

The CCO option will provide more focus on the implementation of the LTP and hence should address the existing compliance issues. The CCO is likely to have more focus, established prioritisation along with the likelihood of better long term borrowing. This is based on the establishment of a business which will capitalise and depreciate its assets over a longer period and hence have steady long term focussed delivery.

All three Councils located in the study area have developed water conservation strategies aiming at keeping demand within an acceptable level. Under the CCO conservation is likely to feature as one of the top priorities and to be funded accordingly. Water conservation strategies will be delivered through a focussed and more accountable environment.

All three councils are taking a similar approach basing the life expectancy on a measure of asset life refined through condition information. The CCO model will offer:

- Consolidation of asset information through a consistent approach
- Ability to accommodate prioritisation from a strategic position
- Provision of more resilience through a holistic solution hence improve security of supply
- Manage maintenance more effectively
- Develop best practice (centre of excellence)

The combined average operational expenditure of all three councils is currently circa $47.6m per year (based on 2015/16 projections). Given the synergies associated with activities carried out by all three councils in this area considerable opportunities exist to deliver cost savings quantified within the body of the main report. The engineering analysis highlighted the following areas where cost savings could be made:

- Rationalisations and reprioritisation of routine tasks
- Asset management of inventory rationalisation of data collection
- Consolidation of common services
- Deferment of investment through strategic solutions

- Deferment of maintenance activities

Resilience forms one of the main aspects of evidence which support the argument for a CCO model. It enables key strategic decisions to be made with the objective of a more secure supply and reduces the probability of service failure. A CCO will enhance the argument to invest in resilience as more cost effective options are available through the CCO structure. This would result in capital savings in the region of $49.6 million and operational saving through reductions in inspections and maintenance in the region of $118,400 per year.

A single CCO would enable more strategic approach to meet the needs of Waikato and Waipa additional demand. The solution would also bring service improvements around pressure, security of supply and potential for providing firefighting flows as well as meeting growth and economic development demands.

Benefits associated with project synergies:
- Net Capex savings of $49.6million for the first 30 years for water and wastewater
- Net Opex savings of $118,400 per year for water wastewater
- Improved resilience better risk profile– supply / algae
- Consolidated water allocation
- Improved disaster management
- Savings on Resource Consent costs and compliance
- Lower monitoring cost
- Level of service improvements around pressure, security of supply and potential for providing firefighting flows.
- Capacity to meet growth and economic development.

The case studies detailed for Watercare, TasWater, Scottish Water and UK organisations all show that significant savings have resulted through the establishment of CCOs or organisations with a similar structure. In these examples, target savings range between 3% and 25% for Opex and Capex. Other benefits also include:
- improved performance for the water and wastewater services,
- improved compliance,
- reduction of customer billing compared to original forecast.

The financial model inputs resulting from the engineering assessment are summarised below:
- Under the CCO model it is anticipated that Capex savings ranging between 3.2% and 9.1% can be achieved. Opex savings ranging between 2 and 7.5% (exclusive of FTE savings and inclusive of project synergies) should be achievable
- Under the ESS model it is anticipated that Capex and Opex savings of 1.5% can be achieved.

Appendices

Appendix A. England Benchmarking

A.1 Benchmarks Available

It is a requirement of water utility company 'Licences' that they furnish the regulator with sufficient information in order to enable the regulator to fulfil its duties. Over the years, up until recently, this has manifested in the collection of company performance information every year into a regulatory report called the 'June Return'. As its name suggests, this information was published in June; although in practical terms the June Return contained so much data companies started compiling it from the very end of the reporting year (31st March/1st April).

At its peak the June Return comprised over 60 tables and over 3000 individual data points that were submitted to the regulator every year. Information reported varied from water efficiency, the number of supply interruptions, Health and Safety statistics, variances in capital expenditure from plan, length of sewer, CO_2 emissions, customer satisfaction and the number of sewer flooding incidents to name just a few. The regulator used this information in order to ensure that customers were adequately protected, that companies were fulfilling their statutory duties and that the investment levels the regulator approved (collected via customer bills) were delivering the services companies promised to their customers. The metrics in the June Return were therefore deliberately designed to be transparent, practical and functional. In particular they were utilised because they could be used to clearly indicate the intrinsic performance of the company.

It is beyond the scope of this report to include detail of all the June Return information available; there is simply too much information and too many benchmarks. Therefore, we have summarised the benchmarks available from the England and Wales June Return in two different ways:

- We have highlighted some key metrics/benchmarks from the June Return that we consider useful for the purpose of this study. These metrics provide meaningful information about the scale of performance improvement that can be achieved from consolidated water utilities. This analysis is summarised in Section A.2 below.
- We have utilised the breadth of information contained in the June Return, along with data from other countries, to develop a 'best practice utility scorecard'. This scorecard highlights the coverage and type of metric that utilities should consider reporting in order to make robust business decisions and focus company resources in appropriate areas.

A.2 Value of Benchmark Information – Performance Improvement

Some of the benchmark information available from the English and Welsh water utilities is very granular. It goes down to individual metric level and sometimes has many years of historical reporting. This makes it ideal for trending company performance over time. As noted above, it is not feasible to provide benchmark information for the entire June Return. We have therefore focused the benchmarks we have analysed for this study around a particular suite of metrics in the June Return.

The English and Welsh water utilities have a rigorous data set of what are called 'service metrics'. These measures were/are used by the regulator in order to confirm that companies are delivering the service levels they promised their customers. The regulator places a lot of scrutiny on these measures and the

expenditure associated with delivering them. This is because in some areas of expenditure (e.g. Capital Maintenance where 'named' schemes cannot necessarily be planned in advance) it was/is theoretically possible for companies not to invest (i.e. not to invest Capex) and keep the financial rewards of this strategy whilst still delivering the service levels agreed (at least for a time due to the natural lag between investment and performance improvement/detriment). The regulator therefore scrutinised the service measures very carefully every year in order to confirm that companies were adequately investing in their infrastructure and delivering the service levels promised.

We have singled out the service measures as useful for benchmarking purposes because they have a long reporting history, they have been independently assured, companies collected/reported all the data as consistently as possible using prescribed methods and many of these measures are collected internationally in some form or other. The data is therefore reliable, accurate and complete enough to enable conclusions to be drawn about the scale of potential performance improvement that could be achieved through consolidation and economies of scale within water utility organisations.

For conceptual and accounting purposes water utilities in England and Wales report performance in what are termed 'sub-services'. There are four of these sub-services:

- Water Non-Infrastructure (potable water 'above ground' or 'process')
- Water Infrastructure (potable water 'below ground' or 'network')
- Sewerage Non-Infrastructure (wastewater 'above ground' or 'process')
- Sewerage Infrastructure (wastewater 'below ground' or 'network')

Below we provide analysis of the service metrics in each of these areas.

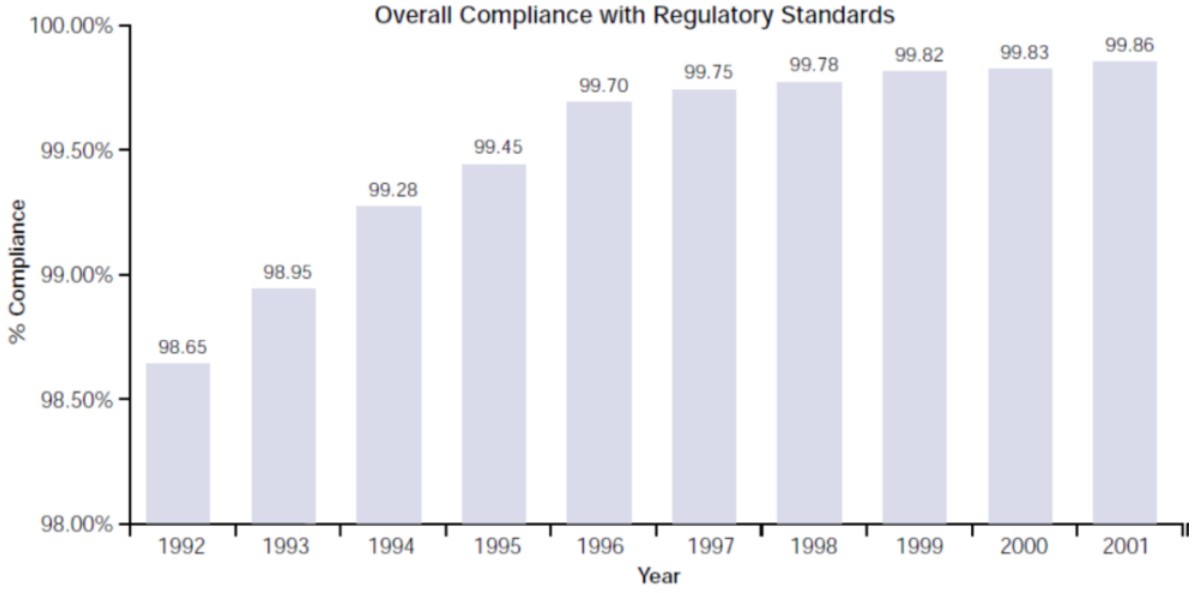
A.2.1 Water Non-Infrastructure

Compliance with drinking water quality standards is perhaps the most important benchmark routinely used in the water industry in England and Wales. The benchmark information provided below summarises the trend in performance of companies in England in Wales over time. Figure 9.1 below shows the overall compliance with the standards, specified in the Water Quality (Water Supply) Regulations 1989, over a ten year period. The improvement is best seen in Figure 9.2, which shows the decreasing number of breaches of the standards. The improvement since 1992 is mainly due to significant reductions in the number of breaches of the total coliform and faecal coliform standards at water treatment works and in service reservoirs, and of the iron, lead and THM standards in zones. Shortly after privatisation and consolidation the industry reported 50,476 breaches of water quality standards. After a 10 year period, the number of breaches fell significantly to 4,054. This represents an approximately 90% performance improvement over the period. Year on year the average performance improvement was 10%.

The principal reasons for the performance improvement over the period were two-fold. Firstly, the companies in England and Wales were/are subject to strict regulation regarding drinking water quality. This is ultimately driven from Europe but is locally/nationally enforced and codified by the drinking water quality regulator. Poor performance carries severe reputational and financial penalties. Secondly, there

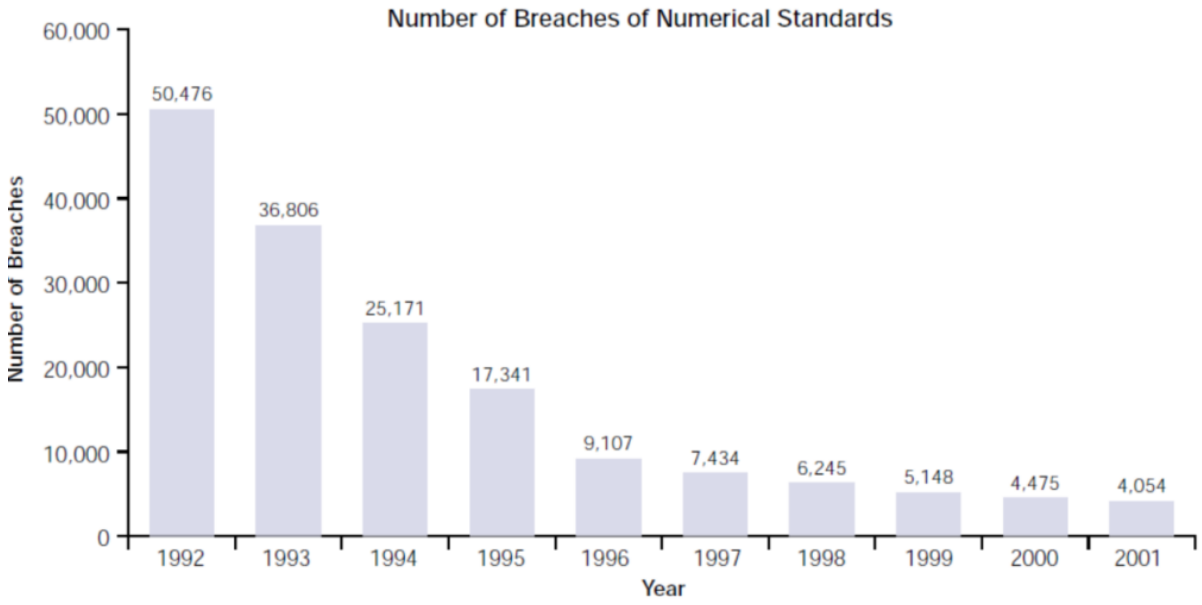
was a general need and desire from all stakeholders that the relatively poor performance in terms of drinking water quality in relation to the public Local Authorities improved. It is unlikely that New Zealand will adopt the same regulatory regime as England and Wales (although the regulatory framework may gradually evolve over time) so this may soften the scale of performance improvement that a CCO could deliver. However, New Zealand also demonstrates a general need and desire by stakeholders to improve the performance of drinking water quality. Therefore, the benchmark with England and Wales is certainly relevant for assessing the potential scale and magnitude of service improvement that could be delivered. Indeed, the consolidation of councils with different levels of service, resources and expertise will necessitate, and almost organically lead to, a focus on performance improvement since the CCO will represent a 'blend' of relative performance.

Figure 9.1: Overall Compliance with Regulatory Standards



Source: Drinking Water 2001 PART 1 Overview of Water Quality in England and Wales

Figure 9.2: Number of Breaches of Numerical Standards



Source: Drinking Water 2001 PART 1 Overview of Water Quality in England and Wales

We can therefore utilise this analysis to draw three broad conclusions regarding the options currently under consideration for this particular study:

- Consolidation of local councils from the current status quo to a CCO or ESS model will likely lead to performance improvements in water non-infrastructure performance.
- Due to the different factors driving change between the two countries, a 10% year on year improvement in the years following consolidation is not an absolute target/value. However, it could represent the maximum or 'frontier' performance following consolidation.
- The ESS model will likely produce more modest performance improvement. There is no equivalent of an ESS model in England and Wales but utilising expert judgement a performance improvement of approximately 5% per annum in the years following service consolidation should not be unreasonable

A.2.2 Water Infrastructure

The proportion of the population affected by low pressure and supply interruptions are the two key service metrics in the Water Infrastructure sub-service. The benchmark information provided below summarises the trend in performance of companies in England in Wales over time. We have analysed data from the years immediately following consolidation of the public Local Authorities in England and Wales in order to be able to draw a valid parallel between the current/status quo option and the CCO model.

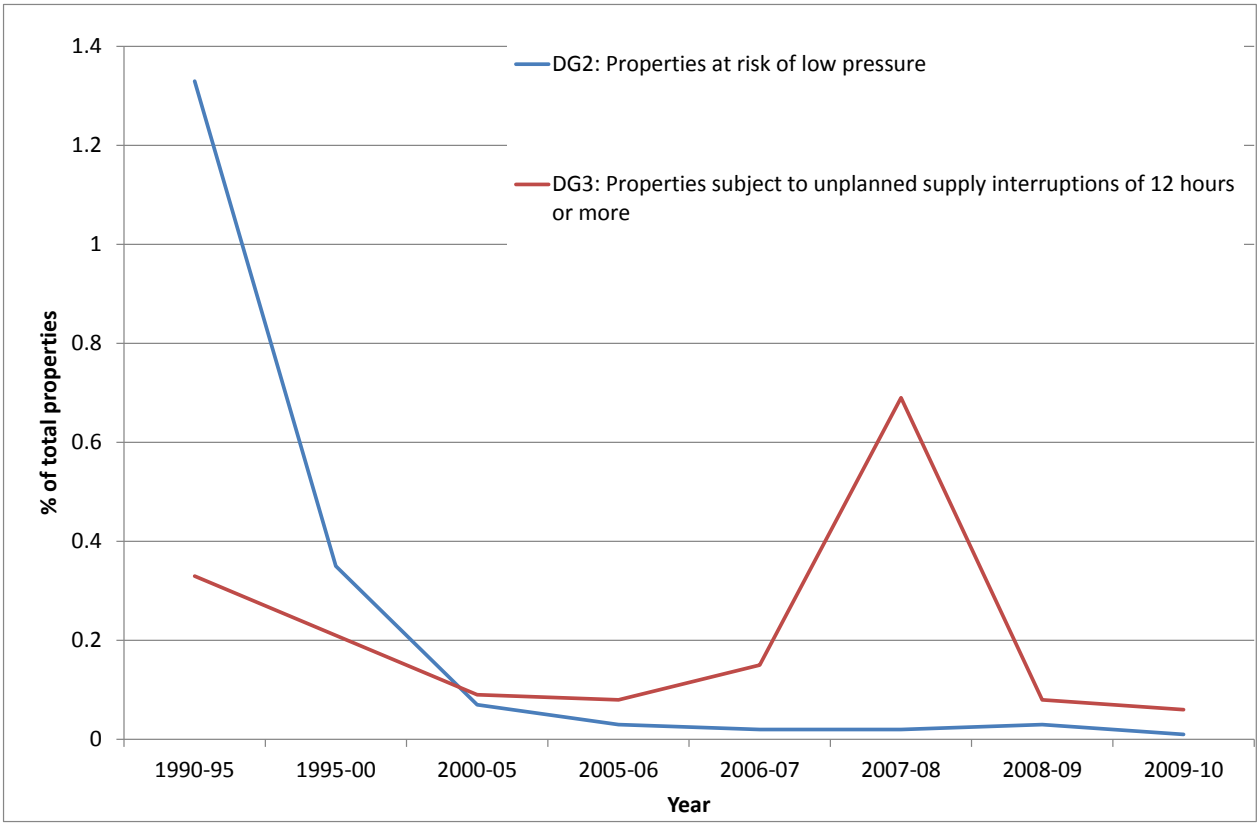
The improvement in performance achieved over 20 years is significant. In terms of supply interruptions, for example, the industry in England and Wales achieved an approximately 80% performance improvement over the 20 year period following consolidation. The industry data for supply interruptions includes the impact of some devastating floods in Gloucestershire in 2007-08 where many thousands of customers had their supplies interrupted due to the flooding of a large water supply works. In terms of low pressure, the industry in England and Wales achieved an approximately 90% performance improvement over the same 20 year period. In the first AMP (Asset Management Period – a period of 5 years) following consolidation, performance improved almost 75%.

Again these improvements were the result of two key drivers; a regulatory drive and a general requirement to improve performance following the rather poor and inconsistent performance of the multiple Local Authorities.

We can utilise this analysis regarding water infrastructure to draw three broad conclusions relating to the options currently under consideration:

- Consolidation of local councils from the current status quo to a CCO or ESS model will likely lead to performance improvements in Water Infrastructure performance.
- Due to the different factors driving change between the two countries, a 75% performance improvement in 5 years is not an absolute target/value for the years following consolidation. However, it could represent the maximum or 'frontier' performance potentially achievable following the move to a more consolidated structure.
- The ESS model will likely produce more modest performance improvement. There is no equivalent of an ESS model in England and Wales but utilising expert judgement a performance improvement of approximately 25-30% over the first several years following service consolidation should not be unreasonable.

Figure 9.3: Pressure and Interruption Performance



A.2.3 Sewerage Non-Infrastructure

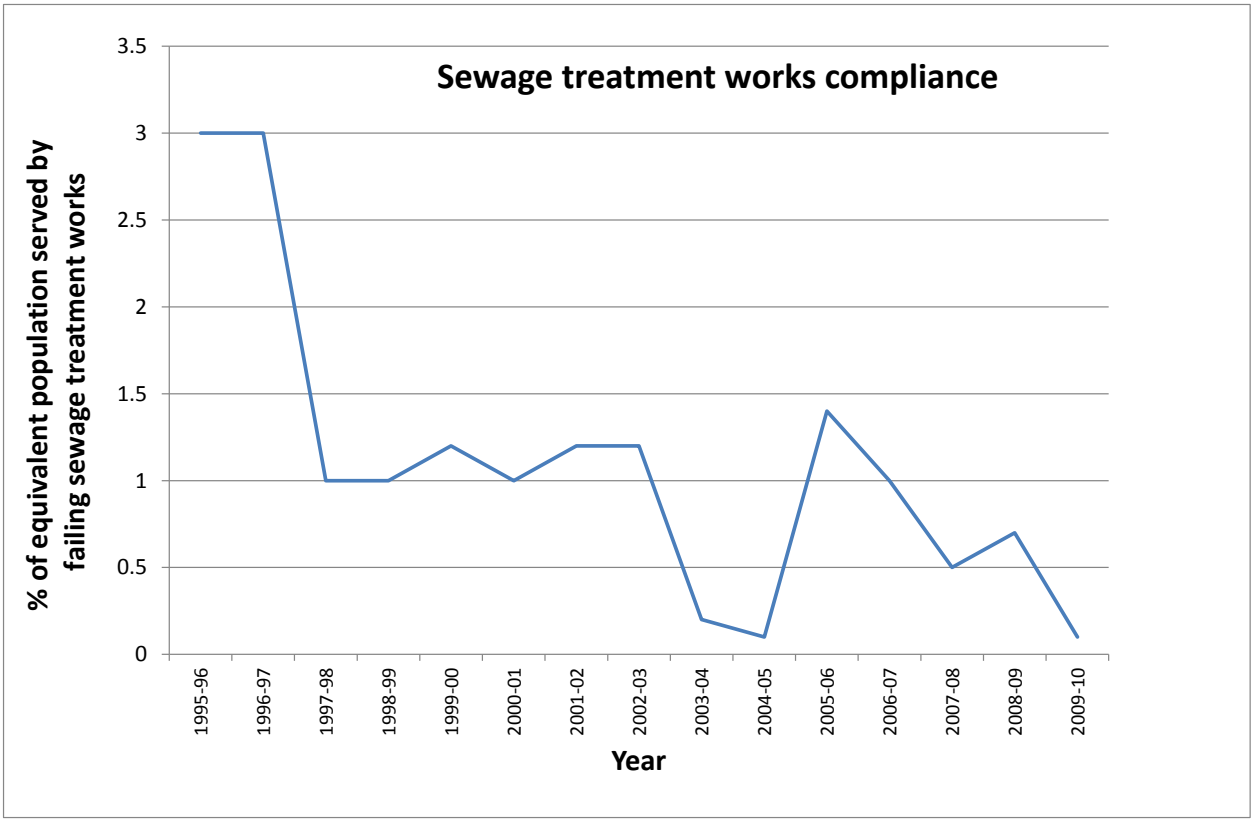
The population equivalent served by treatments works in breach of their numeric consent (e.g. BOD, COD, and SS) is a key service metric for the Sewerage Non-Infrastructure sub-service. We have analysed data from the years soon after consolidation of the public Local Authorities in England and Wales in order to be able to draw a valid parallel between the current/status quo option and the CCO model. The benchmark information provided below summarises the trend in performance of companies in England in Wales over a 15 year period. The improvement in performance achieved is significant; the industry achieved over a 90% performance improvement. Year on year, the average industry performance improvement over the 15 year period following Local Authority consolidation was 7%..

Again these improvements were the result of two key drivers; a strict regulatory framework with severe financial penalties and a general need to improve performance following the rather poor and inconsistent performance of the multiple, public Local Authorities.

We can utilise this analysis regarding Sewerage Non-Infrastructure to draw three broad conclusions relating to the options currently under consideration:

- Consolidation of local councils from the current status quo to a CCO or ESS model will likely lead to performance improvements of the various wastewater treatment plants involved.
- Due to the different factors driving change between the two countries, a 7% performance improvement year on year is not an absolute target/value for the years following consolidation. However, it could represent the maximum or ‘frontier’ performance potentially achievable following the move to a more consolidated structure.
- The ESS model will likely produce more modest performance improvement. There is no equivalent of an ESS model in England and Wales but utilising expert judgement a performance improvement of approximately 3-4% per annum in the years following service consolidation should not be unreasonable.

Figure 9.4: Sewage Treatment Works Compliance



A.2.4 Sewerage Infrastructure

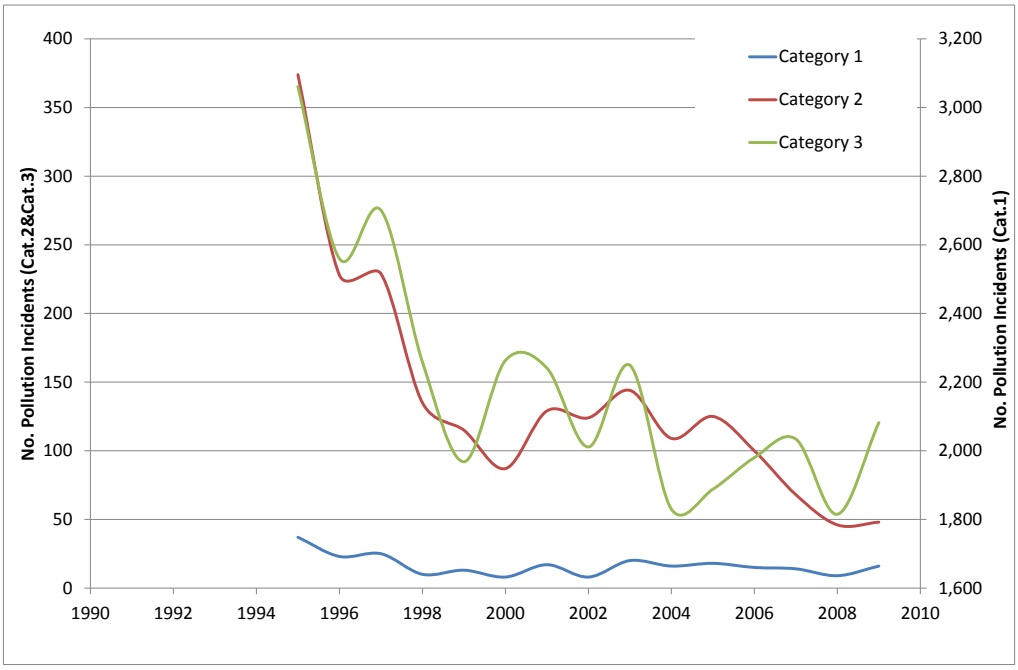
Pollution incidents are another key service metric with a robust industry data set for England and Wales The trend of performance improvement for the number of pollution incidents is highlighted below. We have analysed data from the years soon after consolidation of the public Local Authorities in England and Wales in order to be able to draw a valid parallel between the current/status quo option and the CCO model. The service metric for Sewerage Infrastructure is split into three different categories depending upon the severity of the pollution incidents. Category 1 is the most severe and Category 3 the least. The improvement in performance achieved over 15 years is significant. In terms of Category 2 incidents, for example, the industry achieved an approximately 80% performance improvement over this period. Year on year, the average industry performance improvement for Category 2 pollution incidents over the 15 year period is 6%.

These improvements were the result of two key drivers; a strict regulatory framework with severe financial and reputational penalties, as well as a general need to improve performance following the rather poor and inconsistent performance of the multiple, public Local Authorities.

We can utilise this analysis regarding Sewerage Non-Infrastructure to draw three broad conclusions relating to the options currently under consideration:

- Consolidation of local councils from the current status quo to a CCO or ESS model will likely lead to performance improvement of the sewerage infrastructure manifested by issues such as flooding from outfalls, pumping stations etc.
- Due to the different factors driving change between the two countries, a 6% performance improvement year on year is not an absolute target/value for the years following consolidation. However, it could represent the maximum or ‘frontier’ performance potentially achievable following the move to a more consolidated structure.
- The ESS model will likely produce more modest performance improvement. There is no equivalent of an ESS model in England and Wales but utilising expert judgement a performance improvement of approximately 2-3% per annum in the years following service consolidation should not be unreasonable.

Figure 9.5: Sewage Infrastructure Compliance



A.2.5 Summary of Benchmark Performance Improvement

In 1989 the small, publically owned Local Authorities were consolidated into larger organisations and privatised. Although the potential change from the current status quo model to a CCO model is not a like-for-like comparison since full privatisation is not being considered, there are enough parallels between countries to use the experience of the water utility sector in England and Wales to provide benchmark information relating to what a CCO model may achieve in terms of performance improvement.

The analysis and benchmark information provided above demonstrates the significant performance improvement that has been achieved in England and Wales since the regional municipalities were consolidated into large private companies. Before privatisation performance was inconsistent between Local Authorities; some councils had relatively good performance, some relatively poor. The consolidation allowed resources to be pooled, best practice to be shared and more consistent performance to be achieved. The strict regulatory regime created a pace of change that was unparalleled due to the severe financial and reputational penalties levied on companies. Since the potential move to a CCO model will not create the same regulatory framework the benchmarking information provided above cannot be used in absolute contexts. However, the performance improvements described above were also the result of a need for change driven by internal and external stakeholders; this is applicable to the potential change to a CCO or ESS structure. Therefore, the benchmark information from England and Wales can be utilised to draw conclusions about the relative scale (rather than absolute values) of improvement that may be delivered in a CCO or ESS structure.

A.3 Best Practice Utility Scorecard

We have conducted a thorough analysis of all the benchmark information available in the June Return. We have then compared this information with the scope of benchmark information available internationally for sewerage services. Where we identified similarities between June Return benchmarks and international benchmarks we have included them, along with our rationale, in a 'Best Practice Utility Scorecard'. This scorecard is intended to represent the best practice in terms of management and business reporting for the sewerage service. Following greater consolidation (either via enhanced shared services or via CCO model) the scorecard presented below highlights the type of KPI/metric that should be collected and reported in order to focus management attention in the right areas so that efficiencies and performance improvements can be delivered.

The scorecard is divided into five quadrants representing the complete sewerage utility value chain:

1. Reliability of Assets and Infrastructure
2. Environmental Performance
3. Customer Service
4. People
5. Financial/Capital Delivery

For the purposes of this study, quadrants one and two are most relevant. We have therefore included these below as Table 9.1 and Table 9.2 respectively.

Table 9.1: Best practice utility scorecard – reliability

Ref No	Metric	Units	Value to Company
1.1	Length of sewer replaced per 1,000 miles/km	Miles/km	Determines if capital maintenance activities are taking place effectively
1.2	Cost per mile/km of sewer renewed	$	Capital expenditure associated with capital maintenance
1.3	Percentage of collection system replaced annually	%	Determines if capital maintenance activities are taking place effectively
1.4	Length of sewer cleaned per 1,000miles/km	Miles/km	An indicator of whether there is effective capital maintenance. It also shows if proactive and preventative maintenance is being conducted
1.5	Percentage of sewer length annually inspected by CCTV	%	Proactive determination of the structural condition of the sewerage network
1.6	Unplanned OR planned maintenance in $ or % of budget	%	A measure of the reliability and integrity of the sewerage network structure and equipment as well as the cost of unplanned corrective activities undertaken by employees
1.7	Average daily OR max daily OR flow per customer	%	A measure of the sewage load sent into the sewer network for treatment

Table 9.2: Best practice utility scorecard – environmental

Ref No	Metric	Units	Value to Company
2.1	Net Greenhouse Gas Emissions OR Operational power consumption/MG	ktCO2e OR KW/MG	Examining the environmental footprint of the utilities. It has a link to power consumption OR Determines how much power is used to treat a single mega-gallon)
2.2	Number of CSO overflows	nr	Gives an indication of the potential impact of the untreated sewage on the receiving water bodies
2.3	Annual Sewage Backups due to hydraulic capacity and SSO's	nr	Gives an indication of the potential impact of the untreated or partly treated sewage on the environment
2.4	Discharge permit compliance	%	Reporting the degree to which the discharges from the sewerage system meet with the compliance requirements of the environmental regulator

These benchmarks are important for the purpose of this study because they represent a comprehensive review of international best practice as well as succinctly summarising some of the key information available in the June Return. Following potential council consolidation these benchmarks may represent the type and quantity of metrics that the combined entity may wish to collect.

A.4 Value of Benchmark Information – Potential Efficiency Gains

As well as a large data set of performance benchmarks, the water utility sector in England and Wales also collects a significant amount of financial information. Much of this is commercially sensitive so cannot be presented here. However, Ofwat does collect, analyse and perform financial benchmarking on the companies in England and Wales in order to determine which are the most efficient and which are the least efficient. Companies which are determined to demonstrate poor efficiency by the regulator are challenged to 'catch-up' to the frontier company using a complex suite of financial incentives. The nature of these incentives is not relevant for this study so will not be discussed further. However, the efficiency information on which Ofwat base these decisions are relevant because it shows the scale of efficiencies companies in England and Wales have achieved since Local Authorities were consolidated and privatised.

As discussed above, generally speaking the changes that occurred pre- and post- 1989 in England and Wales are broadly equivalent to the options under consideration here for New Zealand. Pre-privatisation the England and Wales Local Authorities were similar to the New Zealand current or status quo option. Post-privatisation the consolidated water utilities in England and Wales were broadly similar to the new Zealand CCO option (notwithstanding the fact that the CCO option does not include full privatisation). The ESS model is between the two. The efficiencies achieved in England and Wales after 1989 therefore could represent, at least at a high level, the potential efficiencies that changing to a CCO structure may deliver.

For absolute clarity we have structured this efficiency analysis into three sections:

- General levels of capital efficiency that could be delivered utilising the combined industry experience of the England and Wales water utility sector since consolidation and privatisation.

- General levels of operational efficiency that could be delivered utilising the combined industry experience of the England and Wales water utility sector since consolidation and privatisation.
- Specific examples of project-related efficiencies that could potentially be delivered by the CCO utilising focused examples of schemes that have been delivered in the England and Wales water utility sector since consolidation and privatisation.

A.4.1 Capital Efficiency

As part of the price control process (every five years in England and Wales) Ofwat sets capital (and operational) efficiency targets for the water companies. The regulator utilises a combination of historical analysis and econometric modelling (including modelling outside of the water sector) in order to determine the future scope for efficiency within each company. The regulatory focus on efficiency came about because the numerous public Local Authorities were deemed inefficient, and indeed, one of the driving forces behind privatisation in 1989 was the need to improve the efficiency of the sector.

Typically the capital and operational efficiency targets set by the regulator post-1989 were challenging but achievable. In more recent years as well, these challenging efficiency targets have been set against a back drop of economic instability. Nevertheless the industry in England and Wales has continued to achieve efficiencies better that the assumptions set by Ofwat at the price control. This has translated into enhanced returns for shareholders (i.e. profit) since privatisation, but perhaps more importantly for the purpose of this study, it has translated into real bill reductions for customer. At the 2009 price control, bills reduced by approximately 2% at an industry level. During the recent 2014 price control, bills for customers reduced a further 5% at an industry level.

Every five years the regulator in England and Wales compiles a suite of efficiency information called the 'Cost Base'[10]. The Cost Base is a comparative tool used to assess relative efficiency in the procurement and delivery of capital projects, by comparing company estimates of capital works unit costs for a representative range of standardised capital projects. In effect, this means that the regulator is comparing Company A and against Companies B, C and D for the costs associated with delivering capital schemes such as: replacing inlet screens, extending sludge treatment facilities, providing screens on an overflow, replacing pumps or replacing filters etc. It is therefore a unit cost comparison. The last time this information was collected by the regulator was in 2009. This information is summarised in Figure 9.6 by sub-service. It is important to note that efficient companies earn 'rewards' in this approach so this is represented by a positive number. The inefficiencies are therefore indicated by negative numbers.

10 'Cost base feedback report: December 2009 – Ofwat'

Figure 9.6: Industry capital efficiency information based upon delivery of a suite of standard capital projects

	Water		Sewerage	
	Infrastructure	Non-infrastructure	Infrastructure	Non-infrastructure
Simple mean	+0.4%	-2.8%	+0.6%	-0.5%
Most efficient	+17.6%	+8.6%	+15.8%	+13.2%
Least efficient	-17.4%	-15.4%	-10.2%	-11.1%
Standard deviation	+10.5%	+6.2%	+8.6%	+8.5%

Source: 'Cost base feedback report: December 2009 – Ofwat'

The 'simple mean' is perhaps the most useful analysis in the context of this report. It shows that in 2009 (which represents data from the preceding five years) the industry average capital efficiencies set were in the range -2.8% to +0.6%. As highlighted above, the companies in England and Wales have consistently achieved the Ofwat efficiency targets.

Similar information on capital efficiency targets based upon unit costs is also available for capital enhancement schemes (i.e. improving performance) as well as capital maintenance (i.e. maintaining performance). The information below is taken from the 2002-03 Ofwat efficiency summary report[11].

Table 9.3: Capital Efficiency Targets

Water service				Sewerage service			
Infrastructure		Non-Infrastructure		Infrastructure		Non-Infrastructure	
Capital Maintenance	Capital Enhancement	Capital Maintenance	Capital Enhancement	Capital Maintenance	Capital Enhancement	Capital Maintenance	Capital Enhancement
8%	12%	7%	10%	7%	10%	5%	8%

Source: Water and sewerage service unit costs and relative efficiency 2002–2003 report – Ofwat

The magnitude of change in standard capital costs between price reviews is also a useful source of efficiency information[12] (see Table 9.4 below). Ofwat analysis shows that standard costs for the England and Wales water utility industry, when corrected by inflation, have exhibited decreasing unit rates from price control to price control over the 10 year period from PR94 (the 1994 price control) to PR04 (the 2004 price control). These decreases have tended to be around 10-20% at each successive price control. In effect this analysis therefore shows that every five years the industry unit costs are decreasing 10-20% in absolute terms for the standard projects. On top of these absolute reductions Ofwat also apply an efficiency catch-up in line with Figure 9.6 above.

11 'Water and sewerage service unit costs and relative efficiency 2002–2003 report - Ofwat'

12 'Water & Sewerage Services Price Control 2015-21 - Draft Determination – Annex L Cost Base Efficiency Analysis July 2014 – Utility Regulator Water'

Table 9.4: Percentage change in capital unit costs between price controls

Service Area	PR94 – PR99 % Change	PR99 – PR04 % Change
Water Infrastructure	-10%	-20%
Water Non-Infrastructure	-20%	-13%
Sewerage Infrastructure	-10%	-18%
Sewerage Non-Infrastructure	-15%	-30%

Source: Water & Sewerage Services Price Control 2015-21 - Draft Determination – Annex L Cost Base Efficiency Analysis July 2014 – Utility Regulator Water'

Summary

In 1989 the small, publically owned Local Authorities were consolidated into larger organisations and privatised. Although the potential change from the current status quo to a CCO model is not a like-for-like comparison since privatisation is not being considered in New Zealand, there are enough parallels between countries to use the experience of the water utility sector in England and Wales in order to provide benchmark capital efficiency information relating to what a CCO or ESS model may achieve.

Before privatisation efficiency was considered to be poor in the Local Authorities. Following consolidation and privatisation, challenging capital efficiencies have consistently been delivered. Further detail and case studies will be provided below regarding some of the methods companies have utilised to achieve these efficiencies. Some relate to project delivery (e.g. innovative building practices) others relate the maturity of the asset management approach in water sector in England and Wales (Section 7).

We can therefore utilise these analyses regarding capital efficiency targets set by the regulator to draw three broad conclusions relating to the options currently under consideration:

- Consolidation of local councils from the current status quo to a CCO or ESS model will likely lead to capital efficiency gains
- Due to the different factors driving change between the two countries, it is not appropriate to draw conclusions about an absolute value of capital efficiency benefit that can be expected. However, utilising the information provided above it is possible to conclude that following embedment and refinement once the new operating model is implemented, 'frontier' or 'stretch' capital efficiency targets of up to 3% per annum are not unfeasible.
- The ESS model will likely produce more modest efficiency. There is no equivalent of an ESS model in England and Wales but utilising expert judgement, an efficiency of approximately 1-1.5% per annum in the years following service consolidation should not be unreasonable.

A.4.2 Operational Efficiency

Prior to privatisation water utilities in England and Wales were also considered inefficient in terms of operational efficiency. One of the key drivers behind the consolidation of the Local Authorities was the need for the operational costs associated with the provision of water services to become more efficient. It was thought that private companies, with the approval to make profit after services had been delivered to customers, would bring a clear focus to operational efficiencies. Comparing the current (or status quo) model in New Zealand and CCO model with experience and case studies from England and wales pre- and post- privatisation should therefore enable conclusions to be drawn about the scale of operational efficiencies that consolidation may bring out.

As described above, in England and Wales the regulator set ambitious operational efficiency targets for each company at every price control period. One of the key reasons the sector has become so efficient in England and Wales is that the model of price-cap regulation allows companies to keep the rewards of outperformance. The targets set are therefore achieved.

Ofwat utilises econometric models to determine efficiency targets. Historical analysis of company's operational expenditure also forms a key part of the analysis. In these models all companies are compared against each other and companies are ranked according to how efficient Ofwat determine them to be. There are different models for different functional units (e.g. sewage treatment, sludge treatment etc.) and companies are allowed 'special factors' if they think their costs are abnormally high or atypical in a particular area.

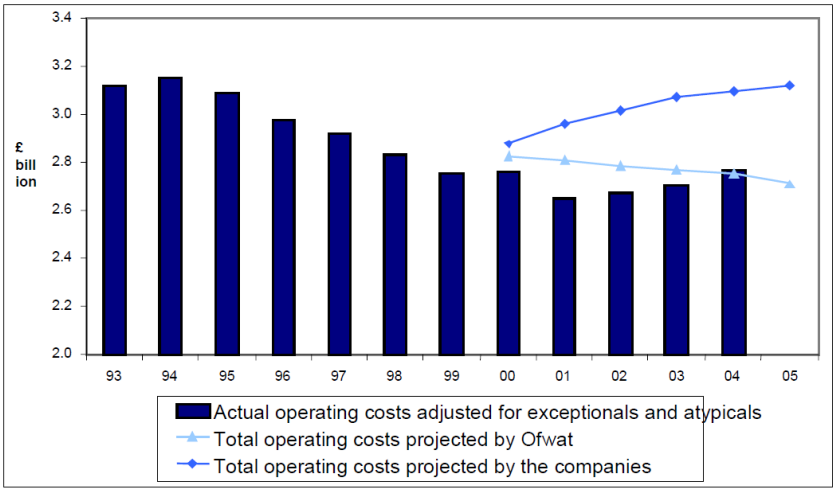
We have compiled and analysed a range of efficiency information from the England and wales water sector and summarised these in the table below.

Table 9.5: England and Wales Opex Efficiency

Reference	Opex Efficiency Cited
'RD 12/03 PR04 - Scope for efficiency improvement in the water and sewerage industries - report for Ofwat by Europe Economics'	"….the scope for the reduction in real base service operating and capital maintenance expenditure in addition to RPI is within the range 1.5-3% p.a. for water and 1.75%-3.25% p.a. for sewerage. For comparison, in 1999 our final assessment for 2000-05 was 2.5%-3.5% for base operating costs for water and sewerage."
Chapter 10 – Efficiency and Outperformance PR04 - Ofwat publication	"The scope for efficiency improvements is around 2.4% a year for operating expenditure and 3.6% a year for capital maintenance."
Investigation into opex productivity trends and causes in the water industry in England and Wales: 1992-93 to 2002-03. Main report - final	"The average rate of opex productivity growth for WaSCs has been in the range 1.7% - 1.9% per annum over the period 1992-93 to 2002-03
Investigation into evidence for economies of scale in the water and sewerage industry in England and wales. Stone and Webster 2004	"Industry opex has declined in real terms by about 2.3% per anum on average over the sample period, while total operating costs have increased in real terms by around 0.2% per annum on average"
Water and sewerage service unit costs and relative efficiency 2002–2003 report - Ofwat	"Since the 1994 review, companies have significantly outperformed our expectations about how efficient they could become. Our 1994 allowance for operating expenditure included company specific catch-up assumptions of between 0 – 2.5% per annum plus a continuing efficiency of 1% per annum. Companies are also responding positively to the efficiency incentives of the 1999 review. Our 1999 assumptions for opex included company specific catch-up assumptions of between 0 – 3.5% per annum plus a continuing efficiency of 1.4% per annum."
The Development of the Water Industry in England and Wales - Ofwat	"When comparing 1998-99 with 2003-04, the largest savings have been made in general and support expenditure. These are mainly comprised of administrative staff costs, the operating costs of vehicles, and the maintenance of buildings, land and equipment. Companies have also made savings in labour costs with a reduction of £15 million in real terms (4%) since 1998-99. The cost of materials and consumables have reduced by £8 million in real terms, (approximately 6%). The cost of power is broadly the same as it was in 1998-99 as rising power costs have been offset by greater energy efficiency."

The real reduction in operating costs following consolidation of the water market is highlighted in the graph below.

Figure 9.7: Industry operating costs 1993-2005 (2003-04 prices)



Source: The Development of the Water Industry in England and Wales - Ofwat

These improvements in operational efficiency were the result of two key drivers; a strict regulatory framework with severe financial and reputational penalties for inefficiency, as well as a general need to improve efficiency performance following the rather poor and inconsistent performance of the multiple, public Local Authorities. Rising Opex costs post 2001 are the result of increased power and chemical costs.

Summary

In 1989 the small, publically owned Local Authorities were consolidated into larger organisations and privatised. Although the potential change from the current status quo to a CCO model is not a like-for-like comparison since privatisation is not being considered in New Zealand, there are enough parallels between countries to use the experience of the water utility sector in England and Wales in order to provide benchmark Opex efficiency information relating to what a CCO model may achieve.

Before privatisation efficiency was considered to be poor in the Local Authorities. Following consolidation and privatisation, challenging operational efficiencies have consistently been delivered. Further detail and case studies will be provided below regarding some of the methods companies have utilised to achieve these efficiencies.

We can therefore utilise this data on Opex efficiency to draw three broad conclusions relating to the options currently under consideration:

- Consolidation of local councils from the current status quo to a CCO or ESS model will likely lead to operational efficiency gains
- Due to the different factors driving change between the two countries, it is not appropriate to draw conclusions about an absolute value of operational efficiency benefit that can be expected. However, utilising the information provided above it is possible to conclude that following embedment and refinement once the new operating model is implemented, 'frontier' or 'stretch' operational efficiency targets ranging from 0-3% per annum are not unfeasible for a CCO.
- The ESS model will likely produce more modest efficiency. There is no equivalent of an ESS model in England and Wales but utilising expert judgement, an efficiency of approximately 0-1.5% per annum in the years following service consolidation should not be unreasonable.

A.4.3 Capital Delivery Efficiencies

The evidence presented above has therefore highlighted how companies in England and Wales are set challenging capital and operational efficiency targets. These targets are routinely met and out-performed by the companies and are of a similar nature to the synergies outlined in section 4.

There are many mechanisms by which companies achieved these efficiency targets ranging from rationalisation of resources to the 'buying power' of large organisations. In the remainder of this report we will focus on two mechanisms by which companies have delivered efficiency; via project efficiencies in delivery and by high-calibre risk-based asset management and decision making.

The consolidation of the water utility market in England and Wales in 1989 led to many wide-reaching changes; not just the privatisation of companies. Of relevance to this project, and of particular relevance in relation to efficiencies achieved through capital delivery, other pertinent changes were:

- Companies became larger - regional authorities merged together to form a single larger utility.
- Companies became focused on efficiency – shareholders and business owners expected profit from the money they invested in water utilities. One of the key ways companies delivered this is though efficiency.
- Performance improved – the tripartite regulation focused the companies on delivering real improvements for customers and the environment (see earlier Section)
- Best practice asset management became important – with a larger asset base comes larger data sets and more complex planning. This enabled, as well as drove, the development of best practice asset management.
- Specialisms developed – larger companies with more assets have more people resources. Individual employees no longer had shared responsibilities; they could, and needed to in order to support the complexities of the system, become bespoke specialists in project delivery, asset management, procurement etc.
- Effective procurement – focused utilities that are consolidated with large capital programmes have more effective buying power. Companies were able to negotiate extremely competitive rates for services and resources.
- Intelligent delivery – larger capital programmes enable intelligent delivery and intelligent delivery yields efficiency savings. For example, 'smart' batching, DFMA (Design for Manufacture and Assembly) and 'productisation'.

The following sections are used to highlight case studies of best practice efficiency in capital delivery for the water utilities in England and Wales. These best practice case studies cannot be used directly as like-for-like comparisons given the different utility models. However, these case studies do show the scale of efficiency and performance improvement that could potentially be achieved by larger consolidated organisations like a CCO or ESS. It is unlikely that any of the savings and benefits described below would have been realised if the utilities were still small, publically owned regional municipalities. The efficiencies quoted in this section of the report are therefore similar to the Capex synergies discussed earlier sections of the report but are drawn directly from example in England and Wales.

For absolute clarity it is important to note that the efficiencies quoted below are described on a scheme by scheme basis (i.e. at a project level). They are therefore at a much more granular level that the industry level capital efficiencies described above in Section A.4.1. For example, In England and Wales a **company** may have a capital efficiency target of 5%. This will be allocated across the whole programme (often several thousand projects) for both water and wastewater according to risk and opportunity. On a **project** basis therefore the company level efficiency target may translate into a **project** efficiency of 20%, 30%, 2% or even -4% for example, depending upon the attributes of a particular project.

A.4.4 Anglian Water – Boston to Covenham water transfer

Covenham to Boston was an Anglian Water Services project. The scheme comprised a new 500mm diameter pipeline 61 km in length from Covenham Water Treatment Works (WTW) to Boston. The aim of the project was to eliminate the supply deficits in Boston and Bourne Planning Zones (15 MLD) in addition to providing resilience to West Pinchbeck WTW. BIM (Building Information Modelling) software was used extensively throughout the project. Anglian Water set a 19% efficiency target on the capital cost for the delivery of this scheme. These efficiency savings were achieved and key to the success was:

- Optioneering investigated utilising existing assets and this resulted in efficiency savings of £10m
- Developing and utilising standard products in the pipeline design including standard air valve and washout fittings provided Anglian Water with £1.5m savings
- Efficient pipeline longitudinal section production led to a saving of £20K compared to traditional production methods.

A.4.5 Anglian Water biosolids quality programme

Anglian Water provides sewage treatment for over 5 million people in the east of England and currently recycles over 90% of its treated sludge to local farmers. Anglian Water was looking for approaches that would further increase treated sludge quality to safeguard this outlet as well as to reduce costs through increased renewable energy generation.

In this particular example, detailed feasibility and scenario planning by a range of Engineering and Asset Management specialists determined that the best solution was a change in Anglian Water's original five site strategy solution to a four site solution; providing greater capacity for the same capital cost but with an operating expenditure saving of £3 million per annum.

A.4.6 Grafham water treatment works resilience

The Grafham resilience scheme was an Anglian Water project. The scheme comprised a new main site (Diddington) with a 40Ml reservoir, 82Ml/d pumping station and associated ancillaries and nine separate satellite sites. The aim of the project was to provide resilience to the existing Grafham treatment works. BIM software was used extensively throughout the project.

The extensive optioneering works to prove the reverse flow solution and the efficiencies generated using BIM allowed the project team to realise and outperform the 19% efficiency target set by the client. In particular, the use of existing assets resulted in efficiency savings of £27m.

A.4.7 Yorkshire Water - Graincliffe water treatment works upgrade

Graincliffe water treatment is a 60Ml/d three stage water treatment plant which had experienced recent bacti failures. The solution was to design and construct a chlorine contact tank of 3,800m^3.

To shorten construction time, make significant cost savings and reduce key safety risks, use was made of prefabricated materials. These systems were constructed off site, delivered by low-loader and installed directly resulting in additional time savings. This solution achieved a saving of £128,000 against target.

A.4.8 Postwick water treatment works – additional source

Postwick water treatment works (WTW) was a new 7.5Ml/d WTW on the outskirts of Norwich. The scheme was intended to provide supply resilience to the Norwich area following a severe drought that took place several years before. The client demanded a 25% capital efficiency saving for the project.

Utilising a combination of offsite manufacture, reduced on-site time, extensive BIM modelling and innovative sequencing the 25% efficiency target was achieved.

Appendix B. Asset Management

The following sections briefly describe the frameworks by which Asset Management capability can be assessed. We then provide a summary of best-practice Asset Management utilising the amalgamated information from all of the various standards and frameworks. Finally we provide some examples of the qualitative and quantitative benefits that improved Asset Management capability may deliver.

B.1 Assessing Asset Management capability

There are many ways that an organisation can assess its Asset Management capability. They are all applied to different degrees all over the world and some sectors prefer one approach over another. However, in essence the principles behind all of the frameworks are similar.

B.1.1 Capability frameworks

There are several Asset Management capability frameworks commonly in use across the infrastructure sector today. In particular the following frameworks are commonly used:

- **Asset Management Assessment (AMA or AMPAP)** was developed in 2007 by Mott MacDonald for the UK water research body UKWIR. This work pre-dated the development of PAS55, focused on planning processes and incorporated the principles of the Common Framework, a water-sector risk-based approach to Capital Maintenance planning (see Section B.3 below). As with other standards and capability frameworks, there are differing maturity levels and high level criteria defining best practice that are then broken down into further detail.
- **International Infrastructure Management Manual** is an Asset Management framework commonly utilised in Australia and New Zealand. It too is based upon maturity indices and many of the concepts in this framework have been utilised in the recently published ISO standard on Asset Management.
- **Publically Available Specification 55 (PAS55)** is an established framework for assessing Asset Management capabilities. It is used in many sectors and seeks to set out the key tenets and criteria for good Asset Management practice in order to enable an organisation to achieve its objectives through the effective and efficient management of its assets. The PAS55 assessment framework largely focuses on the management of physical assets Maturity levels vary from 1 to 4 and generally a maturity level of '3' achieves certification.
- **International Standard ISO55000** is the most recent Asset Management standard and has been developed utilising many of the key concepts from PAS55 and the IIMM. They key difference between this standard and others is that the ISO applies to any organisational asset; not necessarily just physical assets.

B.2 Best practice Asset Management

There are therefore multiple standards and frameworks that define what best practice Asset Management is. Each framework has its own suite of strengths and weaknesses in terms of application and effectiveness. However, there are many commonalities between them all. In particular, the key messages and key concepts are very similar.

This section of the report is used to summarise what Asset Management best practice might represent at a high level. The purpose of this summary is to sign-post the individual councils (and the potential combined entity) to areas where they believe there may be room to grow and expand current capabilities further. It is important to consider areas where there may be scope to improve capability further because the journey of organisation on an expanding capability path will inevitably lead to environmental and financial performance improvement given the holistic and end-to-end nature of Asset Management as a process.

The table below summarises the key tenets of best practice Asset Management and it is based upon the capability frameworks and standards described above.

Table 9.6: The key tenets of best practice Asset Management

High-level area	Description
Context of the organisation - Asset Management policy and strategy	·The organisation's external context, can include issues such as social and cultural, political, legal, regulatory, financial, technological, economic and environmental factors. ·Alignment of organisational objectives with asset management objectives. ·Stakeholders' needs and expectations should be documented and communicated. ·The organisation should define (or review) the boundaries of the Asset Management system, and establish its scope.
Leadership, enablers, authorities and responsibilities	·Top management can demonstrate leadership with respect to Asset Management by supporting Asset Management improvement activities and ensuring Asset Management is given the same level of stature within the organisation as quality, safety etc. ·The Asset Management policy is a short statement that sets out the principles by which the organization intends to apply Asset Management to achieve its organisational objectives. ·The responsibilities and authorities of key functions should be defined. This should include both internal and outsourced roles and responsibilities
Planning, risk management, lifecycle activities	·The organisation should determine the actions that are necessary for addressing risks when planning for its Asset Management system. ·The organisation should develop an Asset Management plan(s) to define the activities that will be implemented and the resources that will be applied to meet the Asset Management objectives and consequently the organisational objectives.
Support, resources, competence, communication, information requirements, documentation	·During the development and implementation of the Asset Management system, including the Asset Management objectives and Asset Management plan(s), the organisation should determine the required resources. ·Competency in Asset Management should be addressed at all levels of the organisation in a way that ensures alignment between roles and levels and not just for those considered to be Asset Managers. ·Persons working under the organisation's control should have appropriate awareness of the organisation's Asset Management system and activities. ·Asset Management activities carried out by the organisation should be communicated to relevant stakeholders periodically, in a coordinated way, as an integral part of the organisation's Asset Management activity and Asset Management system. ·The organisation should determine the information needs related to its assets, Asset Management and its Asset Management system. ·In establishing its documented information needs, the organisation should consider the identification and definition of documented information that will be managed and maintained over the life cycle, taking into account its period of responsibility for the assets.
Operation, change management, maintain, outsourcing	·The organisation should establish operational planning and control processes in order to support the effective delivery of the activities contained within the Asset Management plan(s). ·Internal or external changes affecting assets, Asset Management or the Asset Management system can impact on the organisation's ability to achieve its Asset Management objectives. ·When outsourcing activities influence the achievement of the Asset Management objectives, these should be part of the Asset Management system, and should be documented.
Performance evaluation, monitoring, analysis, evaluation, audit, review	·The organisation should develop processes to provide for the systematic measurement, monitoring, analysis and evaluation of the organisation's assets, Asset Management system and Asset Management activity on a regular basis. ·The organisation should conduct internal audits at planned intervals to ensure the Asset Management system conforms to its requirements ·Top management should review the organisation's assets, Asset Management system and Asset Management activity, as well as the operation of its policy, objectives and plans, at planned intervals, to ensure their suitability, adequacy and effectiveness.
Improvement, corrective action, preventative action, continuous improvement	·The organisation should be aware that nonconformities (including failures) can occur in its assets, Asset Management activity and Asset Management system. ·Preventive actions, which may include predictive actions, are those taken to address the root cause(s) of potential failures or incidents, as a proactive measure, before such incidents occur. ·Opportunities for improvement should be identified, assessed and implemented across the organisation as appropriate, through a combination of monitoring and corrective actions for the assets, Asset Management, or Asset Management system.

Source: Various; PAS55, IIMM, ISO55000, AMA/AMPAP

B.3 Benefits of improved Asset Management capability

The change from the current/status quo model to a potential CCO model will almost inevitably lead to an improvement in Asset Management capability. The simple pooling of people, resources and expertise will engender a collaborative environment of lessons learned, best practice sharing as well as more asset-relating pooling (e.g. an increased asset inventory increases the repository of asset data, tools and systems). Whilst initially this may result in a period of uncertainty, work-arounds and reduced efficacy, following embedment Asset Management capability will likely start to organically grow.

Potential scope for improving Asset Management capability inevitably raises the question '*what are the benefits of improving Asset Management capability*'? Unfortunately there is no simple answer to this question. Mature Asset Management systems are extremely complex. They are often evolved and implemented over a significant period of time and usually quite iteratively as well. This makes quantitatively estimating the benefits very difficult. In qualitative terms, the benefits of good Asset Management are well established. A quantitative analysis, however, requires more ingenuity in the analysis.

We have conducted several separate analyses in order to try and evidence the quantitative benefits of improved Asset Management capability. The following sections will therefore attempt to provide high level estimates of the potential scale of organisational improvement that can be achieved through enhancing Asset Management capability. These are important considerations since the potential move to a more consolidated structure will likely result in 'organic' improvements to Asset Management capability as well as potentially more focused and directed improvements to Asset Management capability.

B.3.1 Improved Asset Management capability and company performance

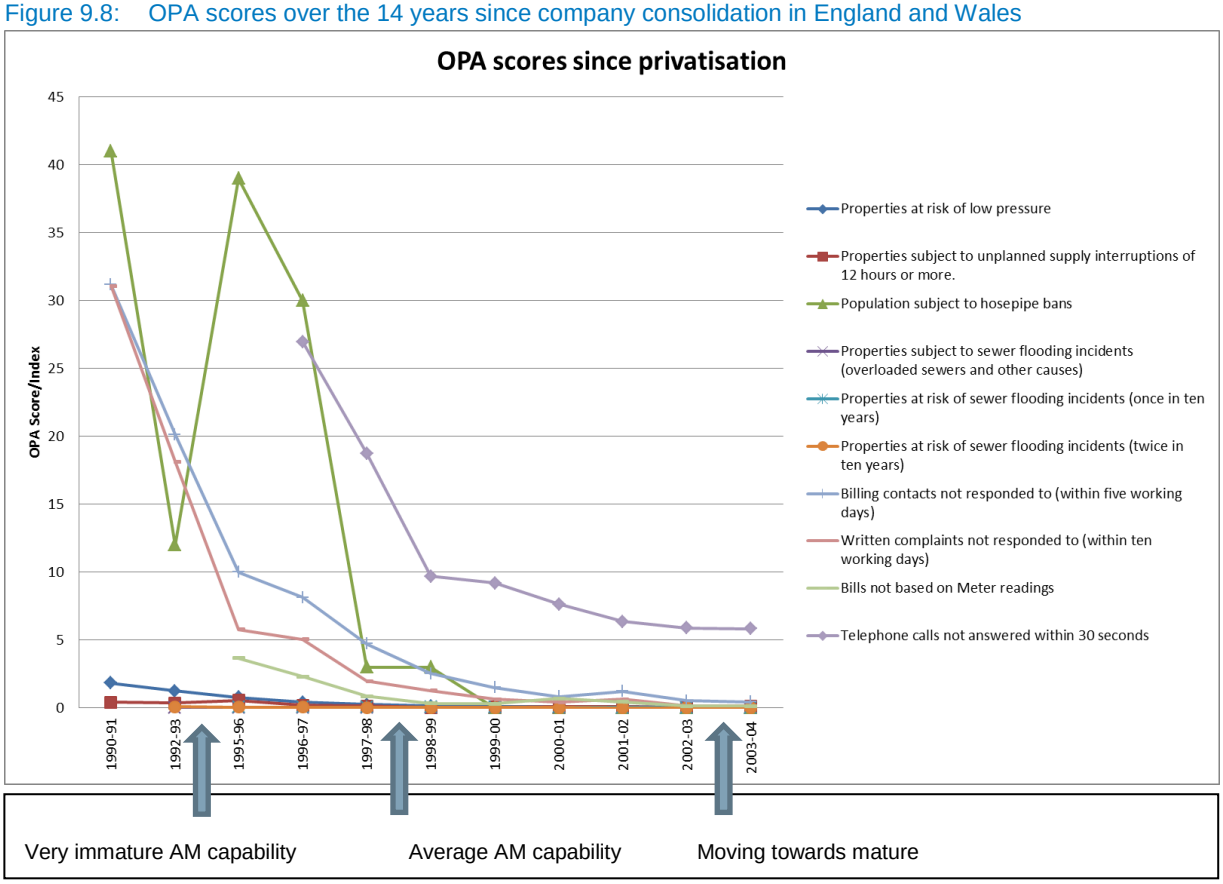
The water sector in England and Wales was privatised in 1989 and therefore has over 20 years' of data relating to the effects of consolidation. Asset Management capability in the water utilities in England and Wales has gradually increased since privatisation in 1989. The challenging efficiency targets set by the strict regulatory regime led, perhaps rather organically at first rather than deliberately, to a gradual development of capability. The large size of the organisations also enabled the utilisation of vast data sets on which to base optimised investment decisions.

The OPA or 'Overall Performance Assessment' was a combined performance measure utilised by Ofwat up until 2009 in England and Wales. It combined performance scores in a range of areas from water supply, sewerage services, customer performance and environmental measures.

The following figures show the trend in industry OPA scores shortly after company consolidation. Although the improvement in Asset Management capability in England and Wales has been a gradual process since privatisation, companies inevitably focused on the related performance and system improvements in the run-up to the price control (the year before the price control normally represents the 'peak activity' in planning and analysis). This means that in the years immediately before and after price controls, step changes in performance often occurred; although obviously these were 'piggy-backing' on top of sustained

and gradual improvement. In Figure 9.10 below OPA scores since privatisation have been analysed and plotted over a period of 14 years. The price controls and significant changes in Asset Management capability have also been highlighted on this chart.

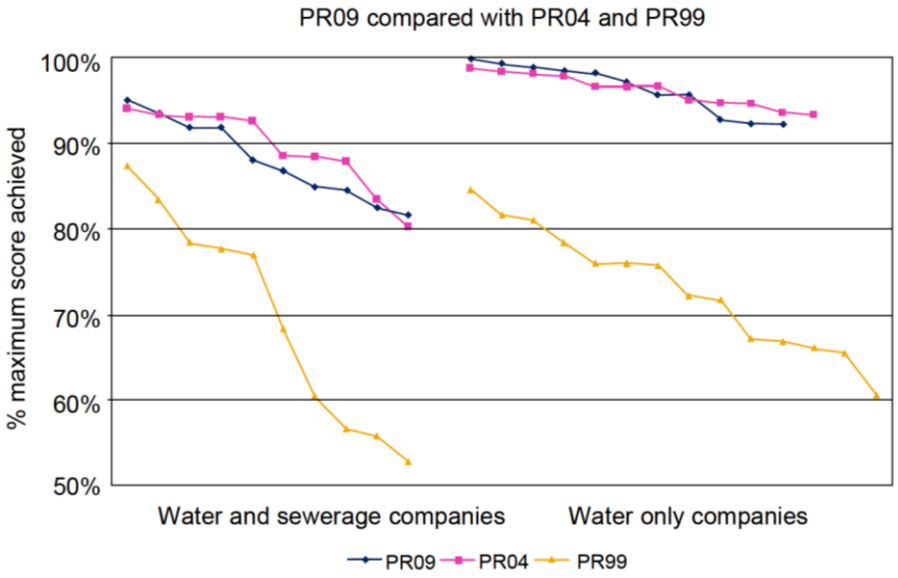
Figure 9.8: OPA scores over the 14 years since company consolidation in England and Wales



Source: Development of the Water Industry in England and Wales - Ofwat

The above chart demonstrates that with improved Asset Management capability comes improved performance in water supply, sewerage and customer service. Figure 9.11 below demonstrates a similar trend. In this analysis OPA scores have been plotted against more recent price controls when Asset Management capability had moved on even further than in Figure 9.10 above. This chart demonstrates a similar relationship; as Asset Management improved so too did OPA performance. Please note, in the analysis below the OPA score has been calculated as a percentage maximum of the total score available – a higher number therefore indicates better OPA performance.

Figure 9.9: The relationship between OPA score and Asset Management capability.



Source: The Development of the Water Industry in England and Wales – Ofwat

B.3.2 Benefits of improved Asset Management capability - AMA

AMA (or AMPAP) is an Asset Management capability assessment that is bespoke to the water industry in England and Wales. The inherent principles upon which it is based though are general and can apply to any water utility in any country. Many of the facets of AMA are similar or identical to key aspects within other Asset Management frameworks.

The last time AMA information was collected by the regulator in England and Wales was in 2009. For this exercise the companies self-assessed their own asset management capabilities and then this was independently verified by a technical auditor. The self-assessment was conducted utilising a scale of 1-5 where '1' was 'well below expectation' and '5' was 'moving the industry forward'. Each sub-service was scored individually.

We have analysed the AMA data from 2009 and compared this against OPA data. In this analysis both parameters (OPA and AMA) increase in numeric score as performance improves and Figure 9.12 below demonstrates the relationship. In this example, AMA scores in all four subservices have been summed.

Figure 9.10: In 2009 the regulator of the England and Wales water utility industry collected numeric information on company's asset management capability. We have analysed this data and compared it with company's OPA performance for the same period.

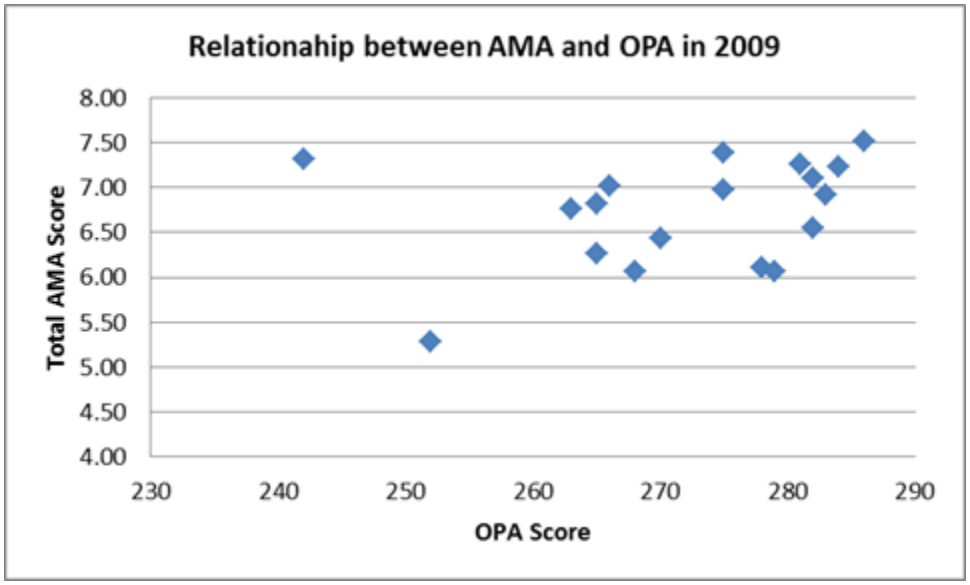


Figure 9.12 therefore demonstrates one of the key benefits of improving Asset Management capability. Based upon 2009 data, water companies in England and Wales with more mature Asset Management capabilities also tended to have good OPA performance scores. As highlighted above, OPA is a collection of performance data for the water service, wastewater service, environmental performance and customer service performance. The benefits of good Asset Management therefore reap rewards in all areas of the utility value chain.

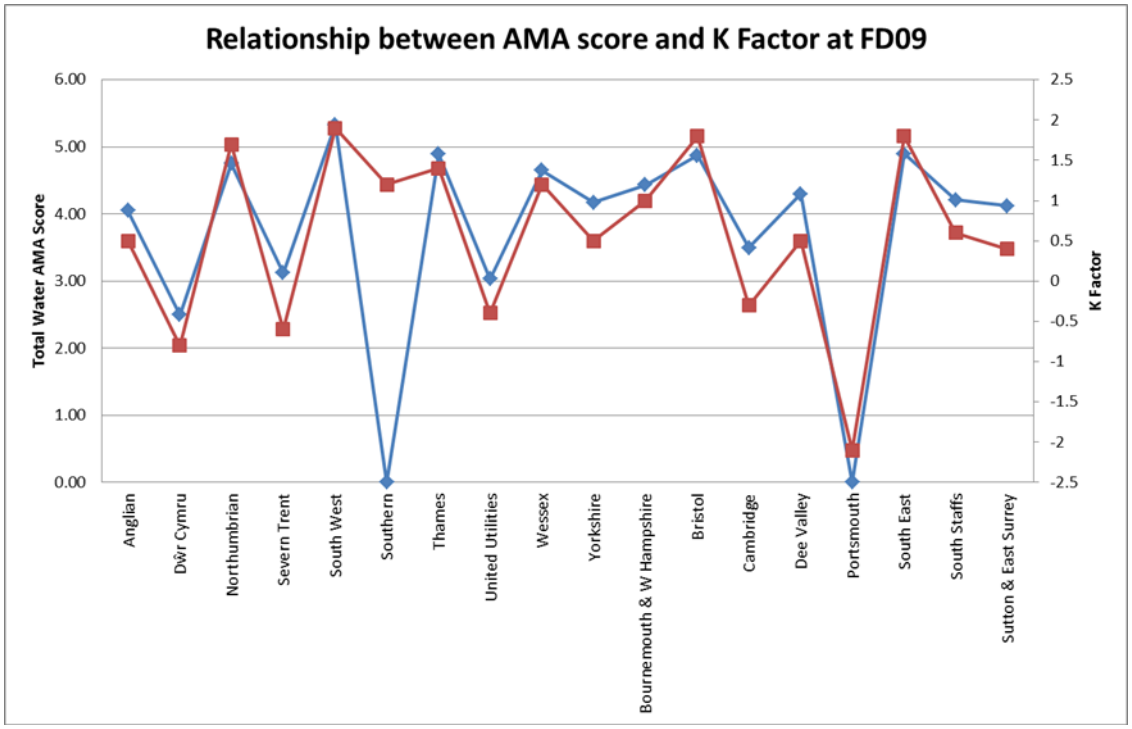
B.3.3 Benefits of improved Asset Management capability – K Factors

We have also analysed the relationship between AMA and the 'K Factor'. In the utility model in England and Wales companies must submit a business plan every five years to the regulator. The business plan is, in effect, the culmination of the previous five year's Asset Management planning practices. Ofwat spend several months analysing each company's business plan and then issue a 'Final Determination' or 'FD'.

There are many components to the FD but by far the most important component is the 'K Factor'. This is a single number and it determines how much companies can increase (or indeed decrease) their bills by. This is why the format of utility regulation in England and Wales is often termed 'RPI +/- K'. Positive K Factors mean that Ofwat has approved bill increases, negative K Factors indicate bills must fall. In reality Ofwat only approves bill increases when there is a robust expenditure plan in place that is legitimate and justified by forward-looking risk-based analysis as well as good historical performance.

The final K Factor also represents the combined effect of all the various rewards and penalties levied on the companies by the regulator for the performance in the previous five years. It therefore takes account of under-spends, over-spends, penalties for poor performance, rewards for good performance and efficiency. In this sense therefore, K Factors are broadly equivalent with good planning, good Asset Management capability, good performance and good efficiency delivery. The figure below summarises the results of this analysis. The relationship between good Asset Management capability (i.e. AMA) and K Factors (company financial, environmental, customer, efficiency and Asset Management performance) is clear. In effect, good Asset Management brings less regulatory challenge and therefore facilitates bill increases as a 'reward'.

Figure 9.11: The relationship between AMA (Asset Management capability) and the 'K-Factors' (akin to the overall financial and environmental performance of the company)



Source: Future water and sewerage charges 2010-15:Final determinations

B.3.4 Benefits of improved Asset Management capability – operating costs

The relationship between Asset Management capability and operating costs or Opex efficiency is much more difficult to determine. This is because many factors increase and/or decrease a company's costs; some of which may not be related to Asset Management. This can make conclusions difficult to ascertain. However, it is possible to make some broad assumptions if the data sets are comprehensive.

The analysis below shows how the total operating costs of all the companies in England and Wales have changed since privatisation. This chart is based on a vast data set, and since it is presented at an industry

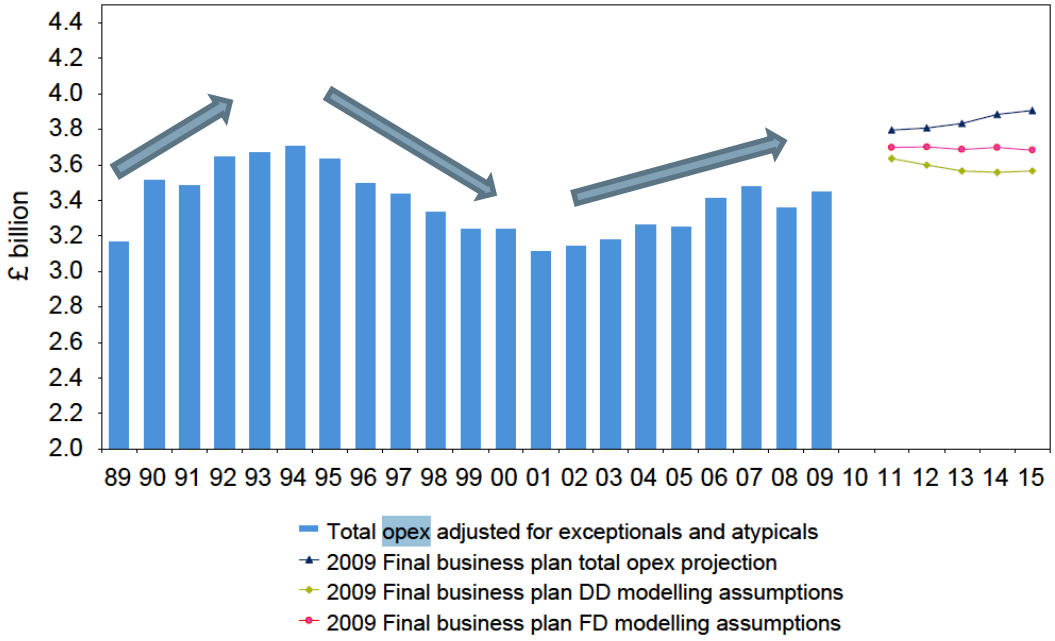
level, it represents financial data from every single company in England and Wales. The chart highlights three phases of operating expenditure since privatisation.

In the first phase immediately following privatisation, absolute operating costs (i.e. not Opex efficiency but total Opex costs) gradually increased over a period of circa 4 years. This is not unexpected given the consolidated companies were formed from many smaller Local Authorities and investment was needed to align often disparate companies, processes, people and systems up to a datum.

In the second phase there was real reduction in total operating costs for several years. This coincides with the time when Asset Management capability improvement was becoming embedded in England and Wales. Over this period total operating costs fell circa 4%.

In the final phase there was a gradual increase in operating costs again. This occurred at the time when European legislation was starting to significantly impact the regulatory regime in England and Wales. This legislation has forced the companies to invest significantly in large enhancement schemes. Once built, these complex additional assets drove up operating costs. This period also coincides with the steady rise in power and chemical costs that was/is being experienced all over the globe. Given the scale of increased investment that power and European legislation has driven, it is perhaps more surprising that operating costs have been increasing so modestly.

Figure 9.12: Evolution of the total operating costs of all the companies in England and Wales



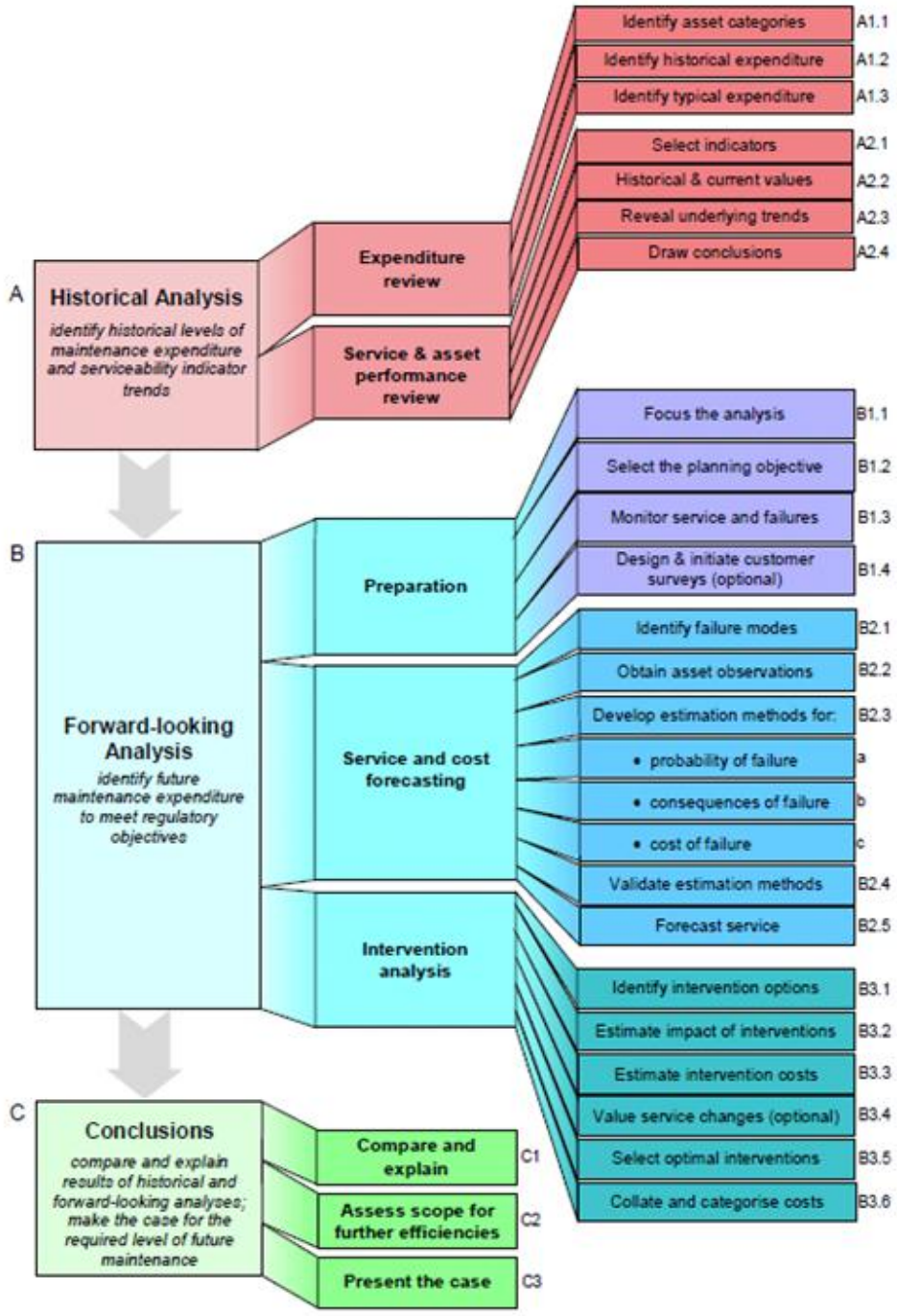
Source: Future water and sewerage charges 2010-15: final determinations - Ofwat

B.3.5 Benefits of improved asset management capability – Common Framework

In 2002, UKWIR published the Common Framework (Capital Maintenance Planning: A Common Framework (02/RG/05/3)). Use of the Common Framework is now near universal across the water industry in England and Wales, with companies using it successfully to support capital maintenance investment cases and often applying the principles of the framework to other investment areas as well.

The Common Framework is a risk-based approach for formulating and prioritising investment decisions. It is based on the analysis of risk (specifically the probability and consequences of asset failure) and encompasses an economic approach which allows the trade-off between capital and operational cost options to be considered. This enables an 'economic level' of capital maintenance to be identified. The Common Framework moved companies in England and Wales away from previous practices which made use of condition and performance grades for estimating remaining asset lives. They key steps in the CMPCF are highlighted in Figure 9.13 below.

Figure 9.13: The principles of the Common Framework – a risk based approach to investment panning now common amongst the water utilities in England and Wales



Source: UKWIR, Capital Maintenance Planning: A Common Framework Volume 1: Overview (02/RG/05/3

From the outset, one of the purposes of the CMPCF was to help companies provide robust forecasts of capital maintenance requirements to input into Ofwat's periodic review process. It is now also used in England and Wales for more day-to-day investment decisions as well as for compiling the business plans every five years that the regulator scrutinises.

The Common Framework approach is based on three key elements:

- Historical analysis (of expenditure, performance and delivery of service objectives)
- Forward-looking analysis (of risks, solutions and associated costs and benefits)
- Conclusions (including presentation of the business plan and case)

Although the inherent principles upon which the Common Framework is based are relatively simple, the integrated approach as a whole, when applied in practice to utilities is extremely complex. The framework is reliant on data and the specific limitations of the individual data sets need to be thoroughly understood.

The Common Framework has also been applied to different degrees within different companies in England and Wales. Some companies have applied the process consistently to every part of their organisation and have purchased advanced modelling software to enable this to happen. Other companies have used the functionality within Excel to model the likelihood and consequence of failure within their asset base; a simpler approach but one that is not particularly suited to the larger companies. With such different levels of application and embedment, it is extremely difficult to draw conclusions about the financial benefits of adopting the Common Framework (or indeed any more mature asset management risk-based approach).

Prior to the implementation of a risk-based approach to capital investment, companies in England and wales relied upon condition grading and analysis of historical expenditure levels in order to estimate the required investment levels for the following five year period. An analysis of what the companies in England and Wales submitted in their five-yearly business plans to the regulator and what the regulator actually 'allowed' in price limits shows that there has been a convergence (from circa 23% at the 1999 Price Review, 11% at the 2004 Price Review and 3.5% at the 2009 Price Review. In effect, the company's Asset Management capabilities, business plans, investment decisions, performance and efficiency improved steadily at each price control which delivered real benefits to customers in terms of bills. In early price controls this manifested as bill increases to customers being moderated. In the last two price controls, this manifested as real bill reductions for customers despite investment levels increasing.

The risk-based approach encapsulated by the Common Framework also has been pivotal in enabling the companies in England and Wales to meet the challenging efficiency demands placed on them by the regulator (see Section A.4.1). In particular, once the more obvious, or 'low hanging fruit', efficiency gains have been addressed (e.g. power, people, materials etc) by companies, risk-based investment and prioritisation is often one of the few remaining ways that companies can address efficiency. Several companies estimate that the adoption of the CMPCF resulted in a circa £200m benefit per company for the 2004 Price Review, with further benefits for the price review during 2009[13].

[13] UKWIR Briefing January 2010 – UKWIR Delivers.

B.4 Summary

There are several frameworks by which organisations can assess their current Asset Management capability. They are all slightly different in application and focus, but in fundamentals they are alike and advocate very similar best practice principles and processes. The current Asset Management capability of the three separate councils will be different; their strengths will be in different areas according to the context and framework in which their individual organisations operate. A consolidated organisation will therefore, at least initially, represent a blend of Asset Management capability with strengths in several areas as well as areas where there is further room to grow in capability. The challenge will be to recognise these areas (perhaps using a recognised framework like those described above) and develop actions accordingly.

The potential amalgamation of three separate councils into a more consolidated structure will potentially lead to two types of change with respect to Asset Management:

- Asset Management capability may organically improve due to the more logistical-related aspects of pooling resources and assets.
- The consolidated organisation may choose to also focus efforts on improving Asset Management capability in a more directed and deliberate fashion.

The latter may be a key mechanism for realising the tangible and non-tangible benefits of a consolidate structure. In particular, once the 'quick-wins' in terms of efficiency gains and performance improvements have been realised in the years immediately following consolidation, improving Asset Management capability may be an important mechanism by which these are further delivered as well as sustained.

Whilst companies in the water sector across the globe have realised significant improvements in Asset Management capability, the sector in England and Wales is useful to analyse in terms of estimating the potential benefits. This is because the strict regulatory regime in England and Wales has necessitated the collection of vast quantities of data from every company over a long and protracted period. It is particularly useful in this context because the companies in England and Wales were privatised in 1989 and therefore the data demonstrates the sustained benefits of consolidation.

In performance terms, companies in England and Wales have significantly improved their environmental performance since privatisation. Many factors have contributed to this improvement (e.g. the impacts of regulatory pressures, the drive for efficiency, the need to maintain a positive reputation with stakeholders etc.) but undoubtedly the focus on improving Asset Management capability has been one of the key reasons for the improvements. Average performance has been steadily climbing since the focus on Asset Management in England and Wales. Prior to its discontinuation in 2009, the maximum OPA score achieved was getting close to the maximum possible (428 achieved by one company out of maximum of 438 in 2009). Several OPA measures recorded performance improvement of circa 30% between Asset Management periods. It would therefore not be unrealistic to estimate a similar magnitude of performance improvement if the individual strengths (in terms of Asset Management capability) of the separate councils were exploited in a more consolidated organisation.

The analysis of the England and Wales sector has also demonstrated that there are financial benefits of focusing on Asset Management capability in a more sustained and consolidated fashion in large organisations. The precise financial benefits are hard to unpick since costs and efficiencies are driven by multiple dependencies. However, at a high level following embedment of the company's practices and alignment of differing standards and capabilities following consolidation, the industry in England and Wales saw total operating costs fall by approximately 4% over a circa 5 year period. In more recent price controls the development of complex, risk-based planning and optimisation tools has allowed customer bills to fall 5% and 2% (following the last two price controls) despite levels of investment in neither Capex or Opex decreasing.

At its heart, mature asset management capability is based around the concepts of:

- An intrinsic and deep understanding of the asset base
- A clear 'line of sight' between all parts of an organisation and its objectives
- A fully embedded culture of risk management and risk-based decision making

It is often the final of these that presents the biggest challenge to organisations since it usually necessitates a change in culture as well as processes and systems. However, the benefits of risk based investment planning are significant. At the 2009 Price Review Ofwat challenged one company in England and Wales circa £50m (an amount approximately equivalent to 6% of their entire Capital Maintenance allowance) because their approach to Asset Management (and in particular risk management) was so poor.

The Common Framework risk-based approach to investment planning helps companies achieve challenging efficiency targets by forcing the company to think in terms of risk (rather than problems and issues which tend to be the focus from a more condition based approach to investment planning). The consolidated implementation of a risk-based approach would improve the Asset Management capability of both the individual councils as well as a potentially consolidated organisation. The development of risk-based investment planning has been a gradual and iterative process in England and Wales. However, financial benefits were being realised by companies even when the process was in its infancy and therefore relatively simple by today's rather more complex risk-based approach. In particular, approaches like the CMPCF enable companies to sustain performance and efficiency improvement once the 'quick-wins' immediately following consolidation have been achieved.

Appendix C. Detailed Capex Expenditure

WATER 30 YEAR CAPEX EXPENDITURE

Council	Project Category	Project Name	Total 35 years	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45
Hamilton	Projects maintained	Replacement of watermains	**$144.5M**	$3.1M	$3.4M	$3.4M	$3.7M	$3.7M	$3.8M	$4.0M	$4.1M	$4.2M	$4.5M	$4.3M	$4.4M	$5.2M	$6.1M	$5.0M	$4.8M	$2.5M	$4.9M	$4.7M	$5.2M	$3.7M	$4.6M	$4.2M	$8.3M	$5.2M	$4.4M	$7.8M	$6.3M	$8.2M	$6.5M
		Replacement of water meters valves & hydrants	**$12.8M**	$337.9K	$363.0K	$339.1K	$348.2K	$278.4K	$286.7K	$248.8K	$241.3K	$240.5K	$353.9K	$364.5K	$375.4K	$386.7K	$398.3K	$410.2K	$422.5K	$435.2K	$448.3K	$461.7K	$475.6K	$489.8K	$504.5K	$519.7K	$535.3K	$551.3K	$567.9K	$584.9K	$602.4K	$620.5K	$639.1K
		Replacement of Water works during intersection upgrades NZTA	**$0.0K**																														
		Water network improvements for intensification	**$4.1M**											$336.6K	$346.7K	$357.1K							$439.2K	$452.4K	$466.0K						$556.4K	$573.1K	$590.3K
		Upgrade or build new watermains in Rototuna contractually committed	**$0.0K**																														
		Upgrade or build new watermains in Rototuna	**$10.9M**	$773.4K	$515.1K	$2.5M	$3.2M	$184.7K	$432.5K	$244.3K	$851.2K	$2.1M	$163.4K																				
		Upgrade or build new watermains in Rototuna	**$288.0K**																	$77.0K	$211.0K												
		Water pipe upgrade - growth	**$14.3M**	$300.0K	$307.8K	$316.0K	$324.4K	$333.5K	$343.3K	$354.0K	$365.6K	$378.3K	$392.2K	$404.0K	$416.1K	$428.6K	$441.4K	$454.7K	$468.3K	$482.4K	$496.8K	$511.7K	$527.1K	$542.9K	$559.2K	$576.0K	$593.3K	$611.0K	$629.4K	$648.3K	$667.7K	$687.7K	$708.4K
		Upgrade or build new watermains in Rotokauri Stage 1	**$6.8M**	$505.0K	$115.4K	$105.3K				$138.3K	$416.0K	$1.4M	$1.0M	$557.5K	$667.7K	$189.8K	$242.8K	$85.6K	$167.7K	$604.2K	$633.7K	$32.0K											
		Upgrade or build new watermains in Rotokauri Stage 2	**$5.7M**																$194.0K	$299.8K	$1.1M	$170.6K									$322.4K	$742.6K	$2.9M
		Upgrade or build new watermains in Peacocke stage 1	**$3.0M**	$75.0K	$105.2K	$746.9K	$946.4K	$134.6K	$134.6K	$707.0K	$140.1K																						
		Upgrade or build new watermains in Peacocke stage 2	**$21.7M**											$90.1K	$308.8K	$1.1M	$954.1K	$357.9K	$1.2M	$1.2M	$291.9K	$298.5K	$251.6K	$255.1K	$1.2M	$1.3M	$1.5M	$3.3M	$778.0K	$3.7M	$1.3M	$1.1M	$1.3M
		Upgrade or build new watermains in Te Rapa North	**$8.2M**												$289.5K	$397.5K	$2.2M	$27.3K										$182.5K	$250.7K	$1.7M	$513.7K	$2.6M	$42.5K
		Integrate watermains in new areas with existing network	**$4.4M**	$80.0K	$82.1K	$84.3K	$86.5K	$88.9K	$91.6K	$94.4K	$97.5K	$100.9K	$104.6K	$121.2K	$124.8K	$128.6K	$132.4K	$136.4K	$140.5K	$144.7K	$149.1K	$153.5K	$158.1K	$181.0K	$186.4K	$192.0K	$197.8K	$203.7K	$209.8K	$216.1K	$222.6K	$229.2K	$236.1K
		Strategic Water Network Planning	**$0.0K**																														
		Developer Engagement	**$0.0K**																														
		Water Demand Management - network water loss	**$1.4M**	$399.3K	$409.7K	$420.5K	$148.5K																										
		Water customer connections	**$2.4M**	$50.0K	$51.3K	$52.7K	$54.1K	$55.6K	$57.2K	$59.0K	$60.9K	$63.1K	$65.4K	$67.3K	$69.3K	$71.4K	$73.6K	$75.8K	$78.1K	$80.4K	$82.8K	$85.3K	$87.8K	$90.5K	$93.2K	$96.0K	$98.9K	$101.8K	$104.9K	$108.0K	$111.3K	$114.6K	$118.1K
		Tools of trade renewals	**$2.4M**	$50.0K	$51.3K	$52.7K	$54.1K	$55.6K	$57.2K	$59.0K	$60.9K	$63.1K	$65.4K	$67.3K	$69.3K	$71.4K	$73.6K	$75.8K	$78.1K	$80.4K	$82.8K	$85.3K	$87.8K	$90.5K	$93.2K	$96.0K	$98.9K	$101.8K	$104.9K	$108.0K	$111.3K	$114.6K	$118.1K
		Upgrade or build new watermains in Ruakura	**$4.9M**	$513.0K			$155.7K	$320.1K				$232.7K		$626.2K							$1.1M			$868.7K					$1.0M				
		Water Demand Management - Pukete Reservoir Zone	**$3.2M**			$105.3K	$608.1K	$2.4M	$64.4K																								
		Upgrade or build new distribution watermains in Peacockes	**$17.2M**										$97.0K	$133.2K	$772.2K	$234.1K	$538.5K	$1.1M	$29.3K		$130.4K	$93.8K	$128.8K	$1.0M	$462.4K	$2.8M	$696.2K	$3.5M	$345.1K	$1.0M	$416.5K	$598.0K	$3.1M
		Water Demand Management - Dinsdale reservoir zone	**$512.7K**	$25.0K	$477.1K	$10.5K																											
		Water Demand Management - Newcastle reservoir zone	**$12.4M**								$577.7K	$1.8M	$4.8M	$5.0M	$263.0K																		
		Update Water model	**$4.3M**						$470.0K	$544.4K									$651.3K	$754.6K									$875.3K	$1.0M			
		Update Water master plan	**$992.0K**	$150.0K	$77.0K						$182.8K										$248.4K										$333.9K		
		Replacement of water treatment plant and reservoir assets	**$59.1M**	$1.3M	$860.5K	$994.2K	$979.9K	$1.3M	$1.4M	$1.1M	$1.2M	$2.9M	$1.0M	$1.7M	$1.5M	$1.6M	$1.6M	$1.7M	$1.7M	$3.1M	$2.0M	$1.9M	$2.1M	$2.0M	$2.1M	$2.4M	$2.3M	$2.4M	$3.9M	$3.5M	$2.5M	$2.8M	$3.0M
		Water treatment plant compliance - minor upgrades	**$40.6M**	$1.6M	$1.0M	$683.6K	$1.3M	$2.1M	$1.0M	$894.7K	$989.2K	$995.3K	$1.1M	$1.1M	$1.1M	$1.1M	$1.2M	$1.2M	$1.2M	$1.3M	$1.3M	$1.4M	$1.4M	$1.4M	$1.5M	$1.5M	$1.6M	$1.6M	$1.7M	$1.7M	$1.8M	$1.8M	$1.9M
		Rototuna Reservoir and associated bulk mains	**$14.6M**	$6.4M	$8.1M	$52.7K																											
		Water demand management - Hillcrest reservoir zone	**$21.0M**						$247.2K	$472.0K	$731.2K	$3.3M	$5.2M	$5.4M	$5.6M																		
		Fairfield Reservoir and associated bulk mains (Ruakura)	**$21.5M**											$134.7K	$554.8K	$857.2K	$2.9M	$8.3M	$8.6M	$80.4K													
		Rotokauri Reservoir and associated bulk mains	**$27.9M**																$234.2K	$723.6K	$1.2M	$4.3M	$10.5M	$10.9M	$93.2K								
		New structure to extract water from the Waikato River	**$44.8M**																		$414.0K	$44.4M											
		Water Demand Management - Universal Water meters	**$37.8M**											$8.8M	$6.9M	$7.1M	$7.4M	$7.6M															
		New Water Treatment Plant - CAPEX 2050	**$236.1M**																														$236.1M
		Managing demand for water - upgrade WTP to 140 ML	**$44.6M**	$500.0K	$2.1M	$8.4M	$6.5M	$5.6M	$5.7M										$7.8M	$8.0M													
		Water Reservoirs Seismic Upgrades	**$9.4M**											$363.6K	$3.1M	$1.7M	$1.1M	$1.1M	$1.2M	$781.4K													
	TOTAL PROJECTS REMAINING		**$843.9M**	**$16.3M**	**$18.0M**	**$18.3M**	**$18.4M**	**$16.6M**	**$14.2M**	**$8.9M**	**$10.0M**	**$17.7M**	**$18.9M**	**$29.5M**	**$27.0M**	**$21.0M**	**$25.3M**	**$27.7M**	**$29.0M**	**$20.7M**	**$14.8M**	**$58.5M**	**$21.5M**	**$22.0M**	**$11.8M**	**$13.7M**	**$15.9M**	**$17.8M**	**$14.9M**	**$22.2M**	**$15.7M**	**$20.3M**	**$257.2M**
Waipa	Projects Maintained	Te Tahi - Papesch Rd Trunk Duplication & Renewal	**$6.9M**							$244.6K	$2.1M	$2.2M	$2.3M																				
		Kihikihi AGA Renewals	**$585.5K**	$11.0K	$11.4K	$11.8K	$12.1K	$12.5K	$13.0K	$13.5K	$14.0K	$14.5K	$15.1K	$16.9K	$16.9K	$16.9K	$16.9K	$16.9K	$20.4K	$20.4K	$20.4K	$20.4K	$20.4K	$24.5K	$24.5K	$24.5K	$24.5K	$24.5K	$29.5K	$29.5K	$29.5K	$29.5K	$29.5K
		Puk AGA Renewals (other than TP)	**$1.0M**	$2.0K	$29.1K	$2.1K	$30.9K		$2.4K	$34.2K			$30.3K	$33.8K	$33.8K	$33.8K	$33.8K	$33.8K	$40.7K	$40.7K	$40.7K	$40.7K	$40.7K	$49.0K	$49.0K	$49.0K	$49.0K	$49.0K	$58.9K	$58.9K	$58.9K	$58.9K	$58.9K
		Te Tahi AGA Renewals	**$1.1M**	$20.2K	$20.9K	$32.2K	$22.2K	$23.0K	$35.6K	$24.6K	$25.6K	$39.8K	$27.7K	$31.0K	$31.0K	$31.0K	$31.0K	$31.0K	$37.3K	$37.3K	$37.3K	$37.3K	$37.3K	$44.9K	$44.9K	$44.9K	$44.9K	$44.9K	$54.0K	$54.0K	$54.0K	$54.0K	$54.0K
		Drinking Water Compliance	**$441.3K**	$5.0K	$228.4K					$207.9K																							
		Water Meters - New and Replacement	**$7.9M**	$766.0K	$2.2M	$2.2M	$2.3M	$69.7K	$72.2K	$74.9K	$77.7K	$80.8K	$84.2K																				
		Te Tahi Consent Complicance - Installation of New Plant	**$67.3K**	$67.3K																													
		Karapiro Village Solution Construction	**$175.0K**	$175.0K																													
		Cambridge Reservoir Renewals & Upgrades	**$0.0K**																														
		Karapiro Rising Main	**$1.5M**	$1.5M																													
		Pukerimu Water Supply - Upgrade Supply to Airport	**$124.0K**	$124.0K																													
		District Wide Water Zone Identification	**$840.1K**								$428.4K	$220.8K	$190.9K																				
		AGA Renewals (other than TP)	**$1.4M**	$27.0K	$28.0K	$28.8K	$29.8K	$30.7K	$31.8K	$33.0K	$34.2K	$35.6K	$37.1K	$41.5K	$41.5K	$41.5K	$41.5K	$41.5K	$49.9K	$49.9K	$49.9K	$49.9K	$49.9K	$60.1K	$60.1K	$60.1K	$60.1K	$60.1K	$72.3K	$72.3K	$72.3K	$72.3K	$72.3K
		Alpha St WTP Asset Renewals	**$1.4M**	$35.5K	$128.2K	$26.2K	$27.0K	$27.9K	$31.2K	$54.4K	$31.1K	$32.3K	$33.7K	$37.7K	$37.7K	$37.7K	$37.7K	$37.7K	$45.4K	$45.4K	$45.4K	$45.4K	$45.4K	$54.6K	$54.6K	$54.6K	$54.6K	$54.6K	$65.7K	$65.7K	$65.7K	$65.7K	$65.7K
		Karapiro WTP Asset Renewals	**$2.0M**	$21.3K	$22.1K	$22.7K	$23.4K	$24.2K	$25.1K	$26.0K	$27.0K	$31.0K	$56.4K	$63.2K	$63.2K	$63.2K	$63.2K	$63.2K	$76.0K	$76.0K	$76.0K	$76.0K	$76.0K	$91.5K	$91.5K	$91.5K	$91.5K	$91.5K	$110.0K	$110.0K	$110.0K	$110.0K	$110.0K
		Parallel Rd WTP AGA Renewals	**$2.8M**	$52.6K	$54.6K	$56.2K	$58.0K	$59.9K	$62.0K	$64.3K	$66.7K	$69.4K	$72.3K	$80.9K	$80.9K	$80.9K	$80.9K	$80.9K	$97.4K	$97.4K	$97.4K	$97.4K	$97.4K	$117.2K	$117.2K	$117.2K	$117.2K	$117.2K	$141.0K	$141.0K	$141.0K	$141.0K	$141.0K
		Wtr Telemetry Upgrade Waipa 1213	**$451.6K**	$8.0K	$34.3K	$8.6K	$8.8K	$9.1K	$9.4K	$9.8K	$10.2K	$10.6K	$11.0K	$12.3K	$12.3K	$12.3K	$12.3K	$12.3K	$14.8K	$14.8K	$14.8K	$14.8K	$14.8K	$17.8K	$17.8K	$17.8K	$17.8K	$17.8K	$21.5K	$21.5K	$21.5K	$21.5K	$21.5K
		Water Main Upgrade from Karapiro to Leamington	**$1.2M**	$1.2M																													
		District Wide Main Replacement & Upgrade - Criticality 2	**$23.0M**			$1.3M	$1.3M	$3.1M	$3.2M	$3.3M	$3.4M	$3.6M	$3.7M																				
		District Wide Rider Main Installation	**$1.5M**	$131.0K	$136.0K	$140.0K	$144.5K	$149.2K	$154.5K	$160.2K	$166.2K	$172.9K	$180.1K																				
		Cambridge North Water Provision	**$688.6K**	$98.0K	$278.2K		$108.1K	$124.2K	$80.2K																								
		Karapiro Water Treatment Plant Upgrade	**$5.9M**	$150.0K	$2.8M	$2.9M																											
		Parallel Rd to Taylors Hill Pipeline	**$21.8M**		$207.6K	$213.8K	$10.4M	$11.0M																									
		Te Awamutu Fire/LOS Service Upgrades	**$1.1M**							$244.6K	$899.7K																						
		TA Active Reticulation Control	**$654.9K**								$126.9K	$528.0K																					
		Dedicated Cambridge North Water Main	**$575.8K**	$250.0K	$325.8K																												
		Cambridge North to Hautapu Pipeline and C8	**$3.0M**						$141.5K	$2.0M	$761.4K																						
		Cambridge Fire & Water LOS Upgrades	**$4.1M**						$193.4K	$917.3K	$951.8K	$990.0K	$1.0M																				
		Cambridge Water Reticulation Active Control	**$724.9K**	$70.0K							$126.9K	$528.0K																					
		Ohaupo Water Suppy Upgrade	**$0.0K**																														
		Water Reticulation Growth (C6, C8, C1)	**$0.0K**																														
		T9 Te Rahu - Picquet Hill Water Reticulation	**$189.9K**				$189.9K																										
		Bond Rd/T3-T10 Water Reticulation	**$737.0K**										$737.0K																				
		Cambridge Upgrade Pipe Bridge Water Portion	**$235.8K**						$235.8K																								
		Cambridge Water Reticulation Growth (C4 & C2)	**$0.0K**																														
		Standby Generators for Treatment Plants	**$495.0K**	$108.0K		$136.8K		$250.1K																									
		DW Main Replacement Criticality 1	**$53.6M**	$1.6M	$1.7M	$1.7M	$1.8M	$1.8M	$1.9M	$2.0M	$2.0M	$2.1M	$2.2M	$2.1M	$2.1M	$2.1M	$2.1M	$2.1M	$2.7M	$2.7M	$2.7M	$2.7M	$2.7M	$1.3M	$1.3M	$1.3M	$1.3M	$1.3M	$969.4K	$969.4K	$969.4K	$969.4K	$969.4K
		Frontier Rd to Taylors Hill Trunk Main	**$1.4M**						$176.9K	$1.2M																							
		Cambridge Reservoir	**$6.6M**																										$1.3M	$1.3M	$1.3M	$1.3M	$1.3M
		Project under $1m estimate												$615.5K	$636.5K	$657.9K	$679.8K	$702.2K	$725.0K	$748.2K	$771.8K	$794.1K	$817.1K	$840.7K	$865.0K	$890.0K	$911.6K	$933.7K	$956.4K	$979.6K	$1.0M	$1.0M	$1.0M
	TOTAL PROJECTS REMAINING		**$172.9M**	**$6.4M**	**$8.2M**	**$8.8M**	**$16.4M**	**$16.7M**	**$6.4M**	**$10.7M**	**$11.3M**	**$10.7M**	**$10.7M**	**$3.0M**	**$3.0M**	**$3.0M**	**$3.1M**	**$3.1M**	**$3.8M**	**$3.8M**	**$3.8M**	**$3.9M**	**$3.9M**	**$2.6M**	**$2.6M**	**$2.6M**	**$2.6M**	**$2.7M**	**$3.8M**	**$3.8M**	**$3.9M**	**$3.9M**	**$3.9M**
	Projects Discarded	CB Hicks Rd WTP Upgrade	**$2.4M**	$2.3M	$0.0K	$0.0K	$0.0K	$0.0K	$194.5K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K
		Alpha St Water Treatment Plant Upgrade	**$12.4M**	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$2.5M	$2.5M	$2.5M	$2.5M	$2.5M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K
		Parallel Rd Water Treatment Plant Upgrade	**$10.1M**	$0.0K	$0.0K	$534.5K	$4.7M	$4.8M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K
		Airport Water Supply Stage 2	**$1.2M**	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$1.2M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K
		Parallel Rd	**$16.6M**	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$3.3M	$3.3M	$3.3M	$3.3M	$3.3M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K
	TOTAL PROJECTS DISCARDED		**$42.7M**	**$2.3M**	**$0.0K**	**$534.5K**	**$4.7M**	**$4.8M**	**$1.4M**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$3.3M**	**$3.3M**	**$3.3M**	**$3.3M**	**$3.3M**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$2.5M**	**$2.5M**	**$2.5M**	**$2.5M**	**$2.5M**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**

WATER 30 YEAR CAPEX EXPENDITURE

Council	Project Category	Project Name	Total 35 years	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45
Waikato	Projects Maintained	District Wide water supply treatment plant renewals	**$6.6M**	$577.5K	$591.6K	$607.0K	$624.0K	$642.1K	$662.0K	$683.2K	$706.1K	$730.5K	$757.0K																				
		District Wide water supply reticulation renewals	**$13.2M**	$1.0M	$1.1M	$1.1M	$1.3M	$1.3M	$1.4M	$1.4M	$1.5M	$1.5M	$1.6M																				
		Ngaruawahia water supply reticulation upgrades	**$615.6K**	$35.7K	$109.7K	$112.6K	$115.7K	$119.1K	$122.8K																								
		District Wide water supply connection renewals	**$2.1M**	$105.0K	$107.6K	$110.4K	$226.9K	$233.5K	$240.7K	$248.4K	$256.8K	$265.6K	$275.3K																				
		Port Waikato water supply treatment plant planning and manag	**$50.0K**	$50.0K																													
		Southern Districts water supply reservoir upgrades	**$102.2K**		$9.7K	$92.5K																											
		Pokeno water supply reticulation extensions	**$1.1M**	$166.6K	$165.2K	$183.5K				$559.0K																							
		Tuakau water supply reticulation extensions	**$4.3M**	$826.9K	$2.4M	$551.8K	$567.3K																										
		Ngaruawahia water supply reticulation upgrades	**$597.5K**	$34.7K	$106.5K	$109.3K	$112.3K	$115.6K	$119.2K																								
		Raglan water supply reticulation upgrades	**$566.1K**			$6.9K	$559.2K																										
		Huntly water supply reservoir extensions	**$605.9K**		$170.3K	$435.6K																											
		Hopuhopu water supply reservoir extensions	**$1.0M**	$500.0K	$548.1K																												
		Pokeno water supply reservoir extensions	**$4.3M**	$1.7M					$240.7K	$2.4M																							
		District Wide water supply connection extensions	**$269.3K**	$22.6K	$23.7K	$24.6K	$25.4K	$26.3K	$27.2K	$28.2K	$29.3K	$30.4K	$31.7K																				
		Northern Waikato water supply connection extensions	**$363.6K**	$30.5K	$32.0K	$33.2K	$34.3K	$35.4K	$36.7K	$38.0K	$39.5K	$41.1K	$42.8K																				
		Mid Waikato water supply treatment plant upgrades	**$6.4M**			$331.1K	$1.7M	$1.7M					$2.7M																				
		Southern Districts water supply reticulation extensions	**$299.1K**	$26.3K	$26.9K	$27.6K	$28.4K	$29.2K	$30.1K	$31.1K	$32.1K	$33.2K	$34.4K																				
		Southern Districts water supply reticulation upgrades	**$183.8K**					$5.8K	$178.0K																								
		Southern Districts water supply reservoir upgrades	**$22.7K**		$2.2K	$20.6K																											
		Southern Districts water supply connection extensions	**$422.7K**	$35.4K	$37.2K	$38.7K	$39.9K	$41.2K	$42.7K	$44.2K	$45.9K	$47.8K	$49.8K																				
		Tuakau water supply reticulation extensions	**$543.3K**	$13.1K	$530.2K																												
		Ngaruawahia water supply reticulation upgrades	**$597.5K**	$34.7K	$106.5K	$109.3K	$112.3K	$115.6K	$119.2K																								
		Raglan water supply reticulation upgrades	**$1.7M**			$20.7K	$1.7M																										
		Huntly water supply pump station upgrades	**$210.0K**	$210.0K																													
		Raglan water supply pump station upgrades	**$220.5K**	$220.5K																													
		Huntly water supply reservoir extensions	**$1.2M**		$345.8K	$884.3K																											
		Hopuhopu water supply reservoir extensions	**$1.0M**	$500.0K	$548.1K																												
		Pokeno water supply reservoir extensions	**$414.0K**	$414.0K																													
		District Wide water supply connection upgrades	**$1.2M**	$611.5K	$268.9K	$275.9K																											
		Te Akau water supply treatment plant upgrades	**$31.5K**	$31.5K																													
		Port Waikato water supply treatment plant upgrades	**$52.5K**	$52.5K																													
		Onewhero water supply reservoir extensions	**$64.3K**	$10.5K	$53.8K																												
		Southern Districts water supply reticulation upgrades	**$1.7M**					$52.5K	$1.6M																								
		Southern Districts water supply reservoir upgrades	**$102.2K**		$9.7K	$92.5K																											
		Western Districts water supply reservoir extensions	**$313.9K**		$26.9K	$287.0K																											
		Levels of Service - Not detailed	**$488.0K**											$75.6K	$75.6K	$75.6K	$75.6K	$75.6K	$22.0K	$22.0K	$22.0K	$22.0K	$22.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K
		Additional Demand - Not detailed	**$9.8M**											$448.4K	$448.4K	$448.4K	$448.4K	$448.4K	$454.0K	$454.0K	$454.0K	$454.0K	$454.0K	$443.2K	$443.2K	$443.2K	$443.2K	$443.2K	$443.2K				
	TOTAL PROJECTS REMAINING		**$62.9M**	**$7.2M**	**$7.3M**	**$5.5M**	**$7.1M**	**$4.5M**	**$4.8M**	**$5.5M**	**$2.6M**	**$2.7M**	**$5.5M**	**$524.0K**	**$524.0K**	**$524.0K**	**$524.0K**	**$524.0K**	**$476.0K**	**$476.0K**	**$476.0K**	**$476.0K**	**$476.0K**	**$443.2K**	**$443.2K**	**$443.2K**	**$443.2K**	**$443.2K**	**$621.0K**	**$621.0K**	**$621.0K**	**$621.0K**	**$621.0K**
	Projects Discarded	Hopuhopu water supply reticulation extensions	**$1.3M**	$793.8K	$512.3K																												
		Southern Districts water supply reservoir extensions	**$1.9M**	$0.0	$0.0	$652.8K	$488.1K	$753.3K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K																				
		Hopuhopu water supply reticulation extensions	**$3.9M**	$2.4M	$1.5M	$0.0	$0.0	$0.0	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K																				
		Huntly water supply treatment plant upgrades	**$607.0K**	$0.0	$0.0	$607.0K	$0.0	$0.0	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K																				
		Ngaruawahia water supply treatment plant upgrades	**$591.6K**	$0.0	$591.6K	$0.0	$0.0	$0.0	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K																				
		Southern Districts water supply reservoir extensions	**$1.9M**	$0.0	$0.0	$652.8K	$488.1K	$753.3K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K																				
		Renewals - Not detailed	**$50.7M**											$3.0M	$3.0M	$3.0M	**$3.0M**	**$3.0M**	**$1.9M**	**$1.9M**	**$1.9M**	**$1.9M**	**$1.9M**	**$2.2M**	**$2.2M**	**$2.2M**	**$2.2M**	**$2.2M**	**$3.0M**	**$3.0M**	**$3.0M**	**$3.0M**	**$3.0M**
	TOTAL PROJECTS DISCARDED		**$60.9M**	**$3.2M**	**$2.6M**	**$1.9M**	**$976.1K**	**$1.5M**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$3.0M**	**$3.0M**	**$3.0M**	**$3.0M**	**$3.0M**	**$1.9M**	**$1.9M**	**$1.9M**	**$1.9M**	**$1.9M**	**$2.2M**	**$2.2M**	**$2.2M**	**$2.2M**	**$2.2M**	**$3.0M**	**$3.0M**	**$3.0M**	**$3.0M**	**$3.0M**
CCO	Additional projects	Install pipeline and associated PS from Horotiu to Ngaruawahia	**$8.0M**																												$4.0M	$4.0M
		Install pipeline and associated PS from Ngaruawahia to Taupiri	**$3.3M**				$1.5M	$1.8M																									
		Install pipeline and associated PS from Taupiri to Huntly	**$7.8M**			$2.0M	$3.2M	$2.6M																									
		Install pipeline and associated PS from Parallel Rd WTP to Hamilton	**$31.1M**													$10.0M	$10.0M	$10.0M	$1.1M														
		Install pipeline and associated PS from Parallel Rd WTP to Cambridge	**$2.4M**																$2.4M														
		Waikato Renewals - Not detailed	**$48.3M**											**$3.0M**	$2.4M	$2.4M	$3.0M	$3.0M	$1.9M	$1.9M	**$1.9M**	**$1.9M**	**$1.9M**	**$2.2M**	**$1.6M**	**$1.6M**	**$2.2M**	**$2.2M**	**$3.0M**	**$3.0M**	**$3.0M**	**$3.0M**	**$3.0M**
	TOTAL ADDITIONAL PROJECTS		**$101.0M**	**$0.0K**	**$0.0K**	**$2.0M**	**$4.7M**	**$4.4M**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$3.0M**	**$2.4M**	**$12.4M**	**$13.0M**	**$13.0M**	**$5.5M**	**$1.9M**	**$1.9M**	**$1.9M**	**$1.9M**	**$2.2M**	**$1.6M**	**$1.6M**	**$2.2M**	**$2.2M**	**$3.0M**	**$3.0M**	**$3.0M**	**$7.0M**	**$7.0M**
TOTAL THREE COUNCILS (excluding discarded projects)			**$1,180.6M**	**$29.9M**	**$33.4M**	**$34.6M**	**$46.6M**	**$42.1M**	**$25.3M**	**$25.0M**	**$24.0M**	**$31.1M**	**$35.1M**	**$36.0M**	**$32.9M**	**$37.0M**	**$41.9M**	**$44.3M**	**$38.8M**	**$27.0M**	**$21.1M**	**$64.8M**	**$27.8M**	**$27.2M**	**$16.5M**	**$18.4M**	**$21.2M**	**$23.1M**	**$22.3M**	**$29.7M**	**$23.2M**	**$31.7M**	**$268.7M**
CAPEX savings related to gain in efficiency (Pessimistic)			$17.7M	$448.0K	$501.6K	$519.5K	$698.8K	$631.7K	$380.0K	$375.6K	$359.5K	$466.0K	$527.2K	$539.6K	$493.5K	$554.7K	$628.8K	$665.0K	$581.3K	$404.6K	$316.3K	$971.8K	$416.3K	$407.7K	$247.5K	$276.0K	$318.3K	$346.4K	$335.2K	$444.8K	$347.3K	$476.1K	$4.0M
CAPEX savings related to gain in efficiency (Realistic)			$50.2M	$1.3M	$1.4M	$1.5M	$2.0M	$1.8M	$1.1M	$1.1M	$1.0M	$1.3M	$1.5M	$1.5M	$1.4M	$1.6M	$1.8M	$1.9M	$1.6M	$1.1M	$896.1K	$2.8M	$1.2M	$1.2M	$701.3K	$782.0K	$901.8K	$981.4K	$949.9K	$1.3M	$984.0K	$1.3M	$11.4M
CAPEX savings related to gain in efficiency (Optimistic)			$88.5M	$2.2M	$2.5M	$2.6M	$3.5M	$3.2M	$1.9M	$1.9M	$1.8M	$2.3M	$2.6M	$2.7M	$2.5M	$2.8M	$3.1M	$3.3M	$2.9M	$2.0M	$1.6M	$4.9M	$2.1M	$2.0M	$1.2M	$1.4M	$1.6M	$1.7M	$1.7M	$2.2M	$1.7M	$2.4M	$20.2M
TOTAL THREE COUNCILS (Pessimistic)			**$1,162.9M**	**$29.4M**	**$32.9M**	**$34.1M**	**$45.9M**	**$41.5M**	**$25.0M**	**$24.7M**	**$23.6M**	**$30.6M**	**$34.6M**	**$35.4M**	**$32.4M**	**$36.4M**	**$41.3M**	**$43.7M**	**$38.2M**	**$26.6M**	**$20.8M**	**$63.8M**	**$27.3M**	**$26.8M**	**$16.3M**	**$18.1M**	**$20.9M**	**$22.7M**	**$22.0M**	**$29.2M**	**$22.8M**	**$31.3M**	**$264.6M**
TOTAL THREE COUNCILS (Realistic)			**$1,130.5M**	**$28.6M**	**$32.0M**	**$33.2M**	**$44.6M**	**$40.3M**	**$24.3M**	**$24.0M**	**$22.9M**	**$29.7M**	**$33.7M**	**$34.4M**	**$31.5M**	**$35.4M**	**$40.1M**	**$42.5M**	**$37.1M**	**$25.8M**	**$20.2M**	**$62.0M**	**$26.6M**	**$26.0M**	**$15.8M**	**$17.6M**	**$20.3M**	**$22.1M**	**$21.4M**	**$28.4M**	**$22.2M**	**$30.4M**	**$257.3M**
TOTAL THREE COUNCILS (Optimistic)			**$1,092.1M**	**$27.6M**	**$30.9M**	**$32.0M**	**$43.1M**	**$39.0M**	**$23.4M**	**$23.2M**	**$22.2M**	**$28.7M**	**$32.5M**	**$33.3M**	**$30.4M**	**$34.2M**	**$38.8M**	**$41.0M**	**$35.8M**	**$25.0M**	**$19.5M**	**$59.9M**	**$25.7M**	**$25.1M**	**$15.3M**	**$17.0M**	**$19.6M**	**$21.4M**	**$20.7M**	**$27.4M**	**$21.4M**	**$29.4M**	**$248.5M**

WASTEWATER 30 YEAR CAPEX EXPENDITURE

Council	Project Category	Project Name	Total 35 years	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45
Hamilton	Projects Maintained	Replacement of Wastewater pump station assets	**$32.2M**	$1.0M	$1.0M	$825.0K	$1.1M	$849.1K	$570.2K	$957.8K	$941.9K	$756.6K	$789.9K	$781.8K	$800.8K	$1.0M	$1.3M	$995.3K	$1.2M	$1.3M	$1.2M	$1.4M	$985.5K	$759.9K	$1.4M	$1.2M	$1.0M	$1.2M	$1.2M	$1.1M	$1.3M	$1.6M	$1.7M
		Replacement of Wastewater assets	**$221.3M**	$3.9M	$3.7M	$4.4M	$5.0M	$5.1M	$7.0M	$5.2M	$4.6M	$4.8M	$5.0M	$5.1M	$6.2M	$6.1M	$7.8M	$12.3M	$9.2M	$6.3M	$5.7M	$17.5M	$11.9M	$20.3M	$9.9M	$5.5M	$5.9M	$7.7M	$12.7M	$4.0M	$2.5M	$10.0M	$6.1M
		Upgrade or build new wastewater network in Rototuna committed	**$0.0K**																														
		Increase capacity of Wastewater pump stations	**$22.2M**	$423.4K	$379.0K	$445.9K	$486.6K	$500.2K	$515.0K	$531.0K	$1.2M	$1.2M	$1.2M	$570.1K	$587.2K	$604.9K	$623.0K	$641.7K	$661.0K	$680.8K	$701.2K	$722.2K	$743.9K	$766.2K	$789.2K	$812.9K	$837.3K	$862.4K	$888.3K	$914.9K	$942.4K	$970.6K	$999.7K
		Wastewater network improvements for intensification	**$4.4M**											$336.6K	$346.7K	$357.1K	$367.8K	$378.8K	$390.3K	$402.0K	$414.0K			$452.4K	$466.0K	$480.0K	$494.4K	$509.2K	$524.5K	$556.4K	$573.1K	$590.3K
		Wastewater pipe upgrade - growth	**$64.7M**	$300.0K	$307.8K	$316.0K	$324.4K	$333.5K	$343.3K	$354.0K	$365.6K	$378.3K	$392.2K	$6.3M	$6.9M	$428.6K	$441.4K	$454.7K	$468.3K	$482.4K	$496.8K	$511.7K	$8.8M	$9.0M	$559.2K	$576.0K	$593.3K	$611.0K	$629.4K	$648.3K	$11.1M	$11.5M	$708.4K
		Increase capacity of wastewater network in Rototuna	**$8.4M**	$1.4M	$274.3K	$670.8K	$1.4M	$411.0K	$206.5K	$626.4K	$584.2K	$2.1M	$782.8K																				
		Integrate wastewater network in new areas with existing network	**$4.4M**	$80.0K	$82.1K	$84.3K	$86.5K	$88.9K	$91.6K	$94.4K	$97.5K	$100.9K	$104.6K	$121.2K	$124.8K	$128.6K	$132.4K	$136.4K	$140.5K	$144.7K	$149.1K	$153.5K	$158.1K	$181.0K	$186.4K	$192.0K	$197.8K	$203.7K	$209.8K	$216.1K	$222.6K	$229.2K	$236.1K
		Increase capacity of wastewater network in Rotokauri stage 1	**$7.6M**	$52.4K	$341.9K	$256.5K	$845.1K	$703.7K	$164.4K	$1.1M	$278.1K	$974.2K	$783.8K	$551.3K	$255.9K	$1.3M	$55.2K																
		Increase capacity of wastewater network in Rotokauri stage 2	**$4.4M**																$143.8K	$197.6K	$1.1M	$32.1K	$89.3K		$135.1K					$219.5K	$348.8K	$1.6M	$509.6K
		Increase capacity of wastewater network in Peacocke Stage 1	**$1.9M**	$1.7M	$68.6K				$60.0K																								
		Increase capacity of wastewater network in Peacocke Stage 2	**$29.1M**												$293.8K	$688.9K	$3.0M	$2.8M	$2.3M	$1.7M	$189.3K		$216.3K	$452.8K	$1.5M	$2.9M	$4.7M	$1.8M	$933.6K	$2.3M	$716.2K	$1.9M	$751.8K
		Increase capacity of wastewater network in Te Rapa North	**$9.4M**											$421.2K	$500.0K	$2.7M	$967.6K	$908.6K	$28.1K											$398.0K	$546.4K	$3.0M	$28.3K
		Strategic Wastewater Network Planning	**$0.0K**																														
		Developer Engagement	**$0.0K**																														
		Increase capacity of wastewater network throughout the city	**$20.1M**	$350.0K	$4.1M	$3.2M	$432.5K	$389.1K	$8.0M				$163.4K	$1.7M	$1.7M																		
		Wastewater customer connections to the network	**$2.4M**	$50.0K	$51.3K	$52.7K	$54.1K	$55.6K	$57.2K	$59.0K	$60.9K	$63.1K	$65.4K	$67.3K	$69.3K	$71.4K	$73.6K	$75.8K	$78.1K	$80.4K	$82.8K	$85.3K	$87.8K	$90.5K	$93.2K	$96.0K	$98.9K	$101.8K	$104.9K	$108.0K	$111.3K	$114.6K	$118.1K
		Update wastewater model	**$4.7M**						$470.0K	$629.5K									$651.3K	$872.1K									$875.3K	$1.2M			
		Wastewater master plan	**$1.1M**	$150.0K	$153.9K	$79.0K					$182.8K										$248.4K										$333.9K		
		Replacement of wastewater treatment plant assets	**$68.2M**	$2.2M	$1.9M	$1.9M	$2.0M	$1.6M	$1.2M	$1.2M	$1.4M	$2.7M	$2.0M	$2.1M	$1.8M	$2.3M	$1.9M	$2.0M	$2.0M	$2.6M	$2.1M	$2.2M	$2.3M	$2.3M	$3.1M	$2.9M	$2.6M	$3.0M	$2.9M	$2.8M	$2.9M	$3.1M	$3.1M
		Upgrade wastewater treatment plant systems (SCADA and Telemetry)	**$15.8M**	$150.0K	$153.9K	$368.6K	$378.5K	$166.7K	$171.7K	$413.0K	$426.5K	$441.4K	$457.6K	$471.3K	$485.4K	$500.0K	$515.0K	$530.5K	$546.4K	$562.8K	$579.6K	$597.0K	$614.9K	$633.4K	$652.4K	$672.0K	$692.1K	$712.9K	$734.3K	$756.3K	$779.0K	$802.4K	$826.4K
		Upgrade wastewater treatment plant (Pukete 3)	**$18.4M**	$950.0K	$2.1M	$6.1M	$5.4M	$3.9M																									
		Upgrade wastewater treatment plant (wet weather treatment)	**$33.5M**													$285.7K	$735.7K	$757.8K	$15.6M	$16.1M													
		Upgrade wastewater treatment plant (Pukete 4)	**$44.2M**										$653.7K	$673.3K	$13.9M	$14.3M	$14.7M																
		Upgrade wastewater treatment plant (Pukete 5)	**$70.9M**																										$1.0M	$1.1M	$22.3M	$22.9M	$23.6M
		Wastewater Treatment Plant compliance - minor upgrades	**$23.8M**	$500.0K	$513.1K	$526.6K	$540.7K	$555.8K	$572.2K	$590.0K	$609.3K	$630.5K	$653.7K	$673.3K	$693.5K	$714.3K	$735.7K	$757.8K	$780.5K	$803.9K	$828.1K	$852.9K	$878.5K	$904.8K	$932.0K	$960.0K	$988.8K	$1.0M	$1.0M	$1.1M	$1.1M	$1.1M	$1.2M
	TOTAL PROJECTS REMAINING		**$713.1M**	**$13.3M**	**$15.1M**	**$19.2M**	**$18.0M**	**$14.6M**	**$19.4M**	**$11.8M**	**$10.7M**	**$14.2M**	**$13.1M**	**$19.8M**	**$34.7M**	**$31.5M**	**$32.9M**	**$22.4M**	**$34.2M**	**$32.2M**	**$13.9M**	**$24.0M**	**$26.7M**	**$35.9M**	**$19.2M**	**$15.8M**	**$17.7M**	**$17.2M**	**$23.2M**	**$16.8M**	**$45.7M**	**$59.4M**	**$40.5M**
	Projects Discarded	Increase capacity of wastewater network (Far Eastern interceptor in Ruakura)	$13.2M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$3.2M	$3.3M	$6.7M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K
		Increase capacity of wastewater network (Southern interceptor Peacockes)	$103.9M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$392.2K	$505.0K	$1.5M	$15.1M	$23.3M	$8.9M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$316.7K	$218.1K	$1.1M	$11.5M	$11.9M	$367.1K	$252.8K	$1.3M	$13.4M	$13.8M
		Increase capacity of wastewater network (Bulk storage wet weather)	$71.9M	$400.0K	$470.0K	$3.9M	$5.8M	$4.4M	$5.0M	$6.7M	$4.1M	$4.5M	$0.0K	$0.0K	$0.0K	$111.4K	$76.5K	$3.4M	$3.8M	$4.5M	$0.0K	$286.6K	$196.8K	$1.0M	$5.2M	$16.1M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$1.9M
	TOTAL PROJECTS DISCARDED		**$189.0M**	**$400.0K**	**$470.0K**	**$3.9M**	**$5.8M**	**$4.4M**	**$5.0M**	**$6.7M**	**$4.1M**	**$7.7M**	**$3.7M**	**$7.2M**	**$1.5M**	**$15.2M**	**$23.4M**	**$12.3M**	**$3.8M**	**$4.5M**	**$0.0K**	**$286.6K**	**$196.8K**	**$1.3M**	**$5.4M**	**$17.2M**	**$11.5M**	**$11.9M**	**$367.1K**	**$252.8K**	**$1.3M**	**$13.4M**	**$15.7M**
Waipa	Wastewater and Disposal	Cambridge Sewer Treatment Plant Renewal	**$121.5K**	$2.0K	$28.0K	$18.2K	$2.2K	$19.4K	$11.8K	$2.5K	$21.6K	$13.2K	$2.8K																				
		Cambridge New WW Treatment Plant - Stage 1	**$225.4K**		$225.4K																												
		Cambridge Upgrade Pipe Bridge	**$9.4M**	$454.0K	$4.1M	$4.6M			$235.8K																								
		Te Awamutu Wastewater Treatment Plant Consent & Upgrade	**$27.5M**		$1.8M	$2.5M			$771.1K	$8.3M	$167.5K								$2.8M	$2.8M	$2.8M	$2.8M	$2.8M										
		Cambridge New WW Treatment Plant - Stage 2	**$7.9M**			$7.9M																											
		Cambridge New WW Treatment Plant - Stage 3	**$8.4M**				$8.4M																										
		Cambridge New Wastewater Treatment Plant Stage 4	**$7.7M**					$247.3K	$7.4M																								
		Cambridge Sewer Pump Station Renewals	**$1.2M**	$119.6K	$126.3K	$78.7K	$75.2K	$70.8K	$69.8K	$129.9K	$230.4K	$130.7K	$136.2K																				
		TA Sewer Pump Station Renewals	**$628.7K**	$38.7K	$46.0K	$49.7K	$143.5K	$14.2K	$54.8K		$137.8K	$70.5K	$73.5K																				
		TA Sewer Treatment Plant Renewals	**$229.3K**	$20.3K	$10.7K	$18.5K	$22.4K	$11.7K	$20.4K	$61.5K	$13.1K	$22.8K	$27.9K																				
		Sewage Telemetry Renewals Waipa	**$175.9K**	$12.8K	$39.2K	$13.7K	$14.1K	$14.6K	$15.1K	$15.7K	$16.2K	$16.9K	$17.6K																				
		Kihikihi Pump Station Renewals	**$340.8K**		$40.2K	$10.9K	$39.9K	$122.5K	$63.5K	$14.7K	$49.1K																						
		District Wide Sewer Pipe Replacement	**$13.6M**	$650.0K	$726.6K	$801.8K	$1.1M	$1.2M	$1.3M	$1.7M	$1.8M	$1.9M	$2.5M																				
		Cambridge North Wastewater Provision	**$1.7M**	$352.0K			$188.6K	$591.1K		$554.0K																							
		CB Wastewater Pipe Upgrades Stage 1	**$960.0K**	$960.0K																													
		Te Awamutu Wastewater Pipe Upgrades	**$828.0K**	$564.0K									$264.0K																				
		Cambridge WWTP Perimeter Fencing	**$250.0K**	$250.0K																													
		CB Wastewater Pipe Upgrades Stage 2	**$510.7K**		$510.7K																												
		CB Wastewater Pipe Upgrades Stage 3	**$2.6M**										$2.6M																				
		Project under $1m estimate	**$3.0M**											$111.5K	$115.3K	$119.2K	$123.2K	$127.2K	$131.4K	$135.6K	$139.9K	$143.9K	$148.1K	$152.3K	$156.7K	$161.3K	$165.2K	$169.2K	$173.3K	$177.5K	$181.8K	$185.7K	$189.6K
		District Wide Wastewater Renewals	**$24.1M**											$2.3M	$2.3M	$2.3M	$2.3M	$2.3M	$600.0K	$600.0K	$600.0K	$600.0K	$600.0K	$1.3M	$1.3M	$1.3M	$1.3M	$1.3M	$640.0K	$640.0K	$640.0K	$640.0K	$640.0K
	TOTAL PROJECTS REMAINING		**$111.3M**	**$3.4M**	**$7.7M**	**$16.0M**	**$10.0M**	**$2.3M**	**$9.9M**	**$10.7M**	**$2.4M**	**$2.2M**	**$5.6M**	**$2.4M**	**$2.4M**	**$2.4M**	**$2.4M**	**$2.4M**	**$3.5M**	**$3.5M**	**$3.5M**	**$3.5M**	**$3.5M**	**$1.4M**	**$1.4M**	**$1.4M**	**$1.4M**	**$1.4M**	**$813.3K**	**$817.5K**	**$821.8K**	**$825.7K**	**$829.6K**
	Projects Discarded	Airport Trunk Main to Cambridge WWTP (Vested Asset)	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K																				
	TOTAL PROJECTS DISCARDED		**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**
Waikato	Wastewater services	District Wide wastewater reticulation extensions	**$598.3K**	$52.5K	$53.8K	$55.2K	$56.7K	$58.4K	$60.2K	$62.1K	$64.2K	$66.4K	$68.8K																				
		Te Kauwhata wastewater reticulation extensions	**$545.0K**						$48.1K	$496.9K																							
		Tuakau wastewater reticulation extensions	**$2.6M**	$105.0K	$268.9K	$275.9K	$283.6K	$291.9K	$300.9K	$310.6K	$321.0K	$332.0K	$68.8K																				
		Te Kauwhata wastewater reticulation upgrades	**$281.4K**	$39.4K	$242.0K																												
		Horotiu wastewater pump station extensions	**$4.4M**			$38.6K	$113.5K	$4.2M																									
		Te Kauwhata wastewater pump station extensions	**$563.2K**							$49.7K	$513.5K																						
		Pokeno wastewater pump station upgrades	**$2.0M**					$116.8K	$1.9M																								
		Tuakau wastewater pump station upgrades	**$1.1M**						$96.3K	$993.8K																							
		Te Kauwhata wastewater treatment plant upgrades	**$1.7M**										$1.7M																				
		District Wide wastewater reticulation renewals	**$10.3M**	$1.3M	$879.4K	$929.9K	$927.5K	$954.4K	$984.0K	$1.0M	$1.0M	$1.1M	$1.1M																				
		Raglan wastewater reticulation upgrades	**$3.1M**							$3.1M																							
		Te Kauwhata wastewater reticulation upgrades	**$93.8K**	$13.1K	$80.7K																												
		District Wide wastewater pump station renewals	**$8.1M**	$709.0K	$726.4K	$745.3K	$766.1K	$788.3K	$812.8K	$838.8K	$866.9K	$896.8K	$929.3K																				
		Raglan wastewater treatment plant planning and management	**$529.6K**		$128.1K	$131.4K	$270.1K																										
		Matangi wastewater treatment plant planning and management	**$57.3K**						$57.3K																								
		Meremere wastewater treatment plant planning and management	**$207.6K**		$102.5K	$105.1K																											
		Te Kowhai wastewater treatment plant planning and management	**$52.6K**			$52.6K																											
		District Wide wastewater treatment plant renewals	**$4.1M**	$362.5K	$371.4K	$381.0K	$391.7K	$403.1K	$415.6K	$428.9K	$443.2K	$458.5K	$475.2K																				
		Raglan wastewater reticulation upgrades	**$9.2M**							$9.2M																							
		District Wide wastewater pump station upgrades	**$3.8M**	$78.8K	$268.9K	$496.7K	$283.6K	$525.4K	$300.9K	$559.0K	$321.0K	$597.7K	$344.1K																				
		Huntly wastewater treatment plant upgrades	**$1.7M**	$105.0K	$1.6M																												
		Ngaruawahia wastewater treatment plant upgrades	**$539.4K**		$53.8K	$485.6K																											
		Raglan wastewater treatment plant upgrades	**$3.7M**		$107.6K	$1.2M		$175.1K	$2.3M																								
		Te Kauwhata wastewater treatment plant upgrades	**$5.5M**								$256.8K	$132.8K	$5.1M																				
		Meremere wastewater treatment plant upgrades	**$2.2M**			$2.2M																											
		Renewals - Not detailed	**$81.1M**											$3.2M	$3.2M	$3.2M	$3.2M	$3.2M	$3.6M	$3.6M	$3.6M	$3.6M	$3.6M	$4.3M	$4.3M	$4.3M	$4.3M	$4.3M	$5.0M	$5.0M	$5.0M	$5.0M	$5.0M
		Levels of Service - Not detailed	**$3.6M**											$143.4K	$143.4K	$143.4K	$143.4K	$143.4K	$166.2K	$166.2K	$166.2K	$166.2K	$166.2K	$192.6K	$192.6K	$192.6K	$192.6K	$192.6K	$223.4K	$223.4K	$223.4K	$223.4K	$223.4K
		Additional Demand - Not detailed	**$8.1M**											$931.8K	$931.8K	$931.8K	$931.8K	$931.8K	$266.0K	$266.0K	$266.0K	$266.0K	$266.0K	$192.6K	$192.6K	$192.6K	$192.6K	$192.6K	$223.4K	$223.4K	$223.4K	$223.4K	$223.4K
	TOTAL PROJECTS REMAINING		**$159.6M**	**$2.8M**	**$4.9M**	**$7.1M**	**$3.1M**	**$7.5M**	**$7.2M**	**$17.0M**	**$3.8M**	**$3.6M**	**$9.8M**	**$4.3M**	**$4.3M**	**$4.3M**	**$4.3M**	**$4.3M**	**$4.1M**	**$4.1M**	**$4.1M**	**$4.1M**	**$4.1M**	**$4.7M**	**$4.7M**	**$4.7M**	**$4.7M**	**$4.7M**	**$5.5M**	**$5.5M**	**$5.5M**	**$5.5M**	**$5.5M**
		Install pipeline and associated PS from Peacokes to Cambridge WWTP	$45.8M												$9.6M	$10.5M	$15.5M	$10.2M															
		Upgrade Cambridge WWTP to include flow from Peacokes	$15.8M																								$5.8M	$5.8M					$4.2M
		Increase capacity of wastewater network (Bulk storage wet weather)	$70.0M	$400.0K	$470.0K	$3.9M	$5.8M	$4.4M	$5.0M	$6.7M	$4.1M	$4.5M	**$0.0K**	**$0.0K**	$0.0K	$111.4K	$76.5K	$3.4M	$3.8M	$4.5M	$0.0K	$286.6K	$196.8K	$1.0M	$5.2M	$16.1M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K
		Increase capacity of wastewater network (Far Eastern interceptor Ruakura)	$11.2M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$3.2M	$3.3M	$4.8M	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K
	TOTAL ADDITIONAL PROJECTS		**$142.8M**	**$400.0K**	**$470.0K**	**$3.9M**	**$5.8M**	**$4.4M**	**$5.0M**	**$6.7M**	**$4.1M**	**$7.7M**	**$3.3M**	**$4.8M**	**$9.6M**	**$10.6M**	**$15.6M**	**$13.6M**	**$3.8M**	**$4.5M**	**$0.0K**	**$286.6K**	**$196.8K**	**$1.0M**	**$5.2M**	**$16.1M**	**$5.8M**	**$5.8M**	**$0.0K**	**$0.0K**	**$0.0K**	**$0.0K**	**$4.2M**
TOTAL THREE COUNCILS (excluding discarded projects)			**$1,126.9M**	**$19.9M**	**$28.2M**	**$46.1M**	**$36.9M**	**$28.8M**	**$41.6M**	**$46.2M**	**$21.1M**	**$27.6M**	**$31.8M**	**$31.3M**	**$51.0M**	**$48.8M**	**$55.3M**	**$42.8M**	**$45.6M**	**$44.3M**	**$21.5M**	**$31.9M**	**$34.5M**	**$43.1M**	**$30.5M**	**$38.0M**	**$29.6M**	**$29.1M**	**$29.5M**	**$23.1M**	**$52.0M**	**$65.7M**	**$51.0M**
CAPEX savings related to gain in efficiency (Pessimistic)			$16.9M	$298.5K	$422.4K	$692.1K	$553.2K	$431.4K	$623.3K	$693.4K	$316.0K	$414.3K	$477.0K	$469.6K	$765.2K	$732.1K	$828.8K	$641.8K	$684.5K	$664.3K	$322.1K	$479.1K	$517.6K	$646.1K	$457.8K	$570.6K	$444.6K	$437.2K	$442.4K	$346.8K	$780.5K	$985.0K	$765.2K
CAPEX savings related to gain in efficiency (Realistic)			$47.9M	$845.7K	$1.2M	$2.0M	$1.6M	$1.2M	$1.8M	$2.0M	$895.4K	$1.2M	$1.4M	$1.3M	$2.2M	$2.1M	$2.3M	$1.8M	$1.9M	$1.9M	$912.7K	$1.4M	$1.5M	$1.8M	$1.3M	$1.6M	$1.3M	$1.2M	$1.3M	$982.7K	$2.2M	$2.8M	$2.2M
CAPEX savings related to gain in efficiency (Optimistic)			$84.5M	$1.5M	$2.1M	$3.5M	$2.8M	$2.2M	$3.1M	$3.5M	$1.6M	$2.1M	$2.4M	$2.3M	$3.8M	$3.7M	$4.1M	$3.2M	$3.4M	$3.3M	$1.6M	$2.4M	$2.6M	$3.2M	$2.3M	$2.9M	$2.2M	$2.2M	$2.2M	$1.7M	$3.9M	$4.9M	$3.8M
TOTAL THREE COUNCILS (Pessimistic)			**$1,110.0M**	**$19.6M**	**$27.7M**	**$45.4M**	**$36.3M**	**$28.3M**	**$40.9M**	**$45.5M**	**$20.8M**	**$27.2M**	**$31.3M**	**$30.8M**	**$50.2M**	**$48.1M**	**$54.4M**	**$42.1M**	**$45.0M**	**$43.6M**	**$21.2M**	**$31.5M**	**$34.0M**	**$42.4M**	**$30.1M**	**$37.5M**	**$29.2M**	**$28.7M**	**$29.0M**	**$22.8M**	**$51.3M**	**$64.7M**	**$50.2M**
TOTAL THREE COUNCILS (Realistic)			**$1,079.0M**	**$19.1M**	**$27.0M**	**$44.2M**	**$35.3M**	**$27.5M**	**$39.8M**	**$44.3M**	**$20.2M**	**$26.4M**	**$30.5M**	**$30.0M**	**$48.8M**	**$46.7M**	**$52.9M**	**$41.0M**	**$43.7M**	**$42.4M**	**$20.6M**	**$30.6M**	**$33.0M**	**$41.2M**	**$29.2M**	**$36.4M**	**$28.4M**	**$27.9M**	**$28.2M**	**$22.1M**	**$49.8M**	**$62.9M**	**$48.8M**
TOTAL THREE COUNCILS (Optimistic)			**$1,042.4M**	**$18.4M**	**$26.0M**	**$42.7M**	**$34.1M**	**$26.6M**	**$38.4M**	**$42.8M**	**$19.5M**	**$25.6M**	**$29.4M**	**$29.0M**	**$47.2M**	**$45.1M**	**$51.1M**	**$39.6M**	**$42.2M**	**$41.0M**	**$19.9M**	**$29.5M**	**$31.9M**	**$39.8M**	**$28.2M**	**$35.2M**	**$27.4M**	**$27.0M**	**$27.3M**	**$21.4M**	**$48.1M**	**$60.7M**	**$47.2M**

STORMWATER 30 YEAR CAPEX EXPENDITURE

Council	Project Category	Project Name	Total 35 years	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43	2043/44	2044/45
Hamilton	Stormwater network	Replacement of Stormwater assets	**$92.5M**	$706.9K	$577.1K	$645.0K	$716.3K	$945.7K	$973.7K	$1.0M	$1.0M	$1.1M	$1.1M	$1.2M	$749.2K	$771.7K	$848.9K	$818.7K	$1.6M	$868.6K	$1.1M	$921.5K	$2.9M	$4.7M	$1.1M	$1.0M	$5.7M	$6.1M	$6.3M	$9.4M	$6.4M	$13.4M	$17.9M
		Stormwater network improvements for intensification	**$5.7M**											$336.6K	$346.7K	$357.1K		$757.8K		$402.0K	$414.0K	$426.5K		$904.8K							$556.4K	$573.1K	$590.3K
		Stormwater Project Watershed Capital Works	**$5.4M**											$202.0K	$208.0K	$214.3K	$220.7K	$227.3K	$234.2K	$241.2K	$248.4K	$255.9K	$263.5K	$271.5K	$279.6K	$288.0K	$296.6K	$305.5K	$314.7K	$324.1K	$333.9K	$343.9K	$354.2K
		Rototuna stormwater Infrastructure	**$8.4M**	$573.9K	$332.8K	$900.3K	$1.1M	$665.3K	$713.0K	$735.2K	$598.4K	$1.7M	$1.1M																				
		Rototuna stormwater Infrastructure	**$351.6K**												$351.6K																		
		Rotokauri stormwater infrastructure stage 1	**$31.4M**							$3.6M	$13.4M	$11.5M	$268.0K	$383.8K	$2.1M	$225.7K	$19.1K																
		Rotokauri stormwater infrastructure stage 2	**$10.8M**																												$841.1K	$9.9M	
		Peacocke stormwater infrastructure stage 1	**$2.8M**	$558.1K		$316.0K	$400.1K	$176.5K	$583.8K	$373.3K		$359.4K																					
		Peacocke stormwater infrastructure stage 2	**$14.5M**										$473.9K	$129.7K	$1.3M	$223.4K	$1.1M	$105.3K	$1.1M	$216.3K	$1.1M	$69.3K			$545.2K	$784.9K	$1.2M	$1.7M	$267.5K	$1.1M	$264.9K	$1.3M	$1.5M
		Te Rapa North stormwater infrastructure	**$6.8M**												$128.2K	$936.0K	$720.6K	$45.5K				$153.0K	$1.1M	$860.4K	$54.3K					$193.8K	$1.4M	$1.1M	$68.8K	
		Stormwater pipe upgrade - growth	**$5.9M**	$125.0K	$128.3K	$131.6K	$135.2K	$138.9K	$143.1K	$147.5K	$152.3K	$157.6K	$163.4K	$168.3K	$173.4K	$178.6K	$183.9K	$189.4K	$195.1K	$201.0K	$207.0K	$213.2K	$219.6K	$226.2K	$233.0K	$240.0K	$247.2K	$254.6K	$262.2K	$270.1K	$278.2K	$286.6K	$295.2K
		Ruakura stormwater facilitation	**$542.5K**											$67.3K	$69.3K							$85.3K	$87.8K								$114.6K	$118.1K
		Strategic Stormwater Network Planning	**$0.0K**																														
		Integrate Stormwater network in new areas with existing network	**$4.8M**	$100.0K	$102.6K	$105.3K	$108.1K	$111.2K	$114.4K	$118.0K	$121.9K	$126.1K	$130.7K	$134.7K	$138.7K	$142.9K	$147.1K	$151.6K	$156.1K	$160.8K	$165.6K	$170.6K	$175.7K	$181.0K	$186.4K	$192.0K	$197.8K	$203.7K	$209.8K	$216.1K	$222.6K	$229.2K	$236.1K
		Developer engagement	**$0.0K**																														
		Strategic Stormwater Network Projects	**$128.6M**											$404.0K	$25.0M	$42.9K			$468.3K	$28.9M	$49.7K			$542.9K	$33.6M	$57.6K			$629.4K	$38.9M	$66.8K		
		Comprehensive Stormwater Consent Implementation (compliance)	**$9.5M**			$184.3K	$227.1K	$255.7K	$240.3K	$247.8K	$255.9K	$264.8K	$274.5K	$282.8K	$291.3K	$300.0K	$309.0K	$318.3K	$327.8K	$337.7K	$347.8K	$358.2K	$369.0K	$380.0K	$391.4K	$403.2K	$415.3K	$427.7K	$440.6K	$453.8K	$467.4K	$481.4K	$495.9K
		Stormwater customer connections to the network	**$2.4M**	$50.0K	$51.3K	$52.7K	$54.1K	$55.6K	$57.2K	$59.0K	$60.9K	$63.1K	$65.4K	$67.3K	$69.3K	$71.4K	$73.6K	$75.8K	$78.1K	$80.4K	$82.8K	$85.3K	$87.8K	$90.5K	$93.2K	$96.0K	$98.9K	$101.8K	$104.9K	$108.0K	$111.3K	$114.6K	$118.1K
		Integrated catchment management plans	**$8.3M**	$350.0K	$359.1K	$379.1K	$324.4K	$333.5K	$343.3K	$354.0K	$365.6K	$378.3K	$392.2K	$404.0K	$416.1K	$428.6K	$882.9K	$75.8K	$78.1K	$80.4K	$82.8K	$85.3K	$87.8K	$90.5K	$93.2K	$96.0K	$1.2M	$101.8K	$104.9K	$108.0K	$111.3K	$114.6K	$118.1K
		Stormwater master plan	**$582.3K**																		$248.4K										$333.9K		
	TOTAL	**TOTAL**	**$339.4M**	**$2.5M**	**$1.6M**	**$2.7M**	**$3.0M**	**$2.7M**	**$3.2M**	**$6.6M**	**$16.0M**	**$15.6M**	**$4.0M**	**$3.7M**	**$31.3M**	**$3.9M**	**$4.5M**	**$2.8M**	**$4.2M**	**$31.5M**	**$4.2M**	**$3.8M**	**$5.1M**	**$7.4M**	**$36.5M**	**$3.2M**	**$9.3M**	**$9.2M**	**$8.8M**	**$52.3M**	**$10.3M**	**$17.9M**	**$31.7M**
Waipa	Stormwater	Land Victoria Rd Swale	**$211.0K**	$211.0K																													
		Norfolk Rd Trunk Reticulation	**$1.9M**	$1.9M																													
		Western Catchment Remedial Works	**$565.0K**	$565.0K																													
		Construct Victoria Rd Swale	**$985.6K**			$985.6K																											
		Construct 50% Western Basin	**$1.6M**			$1.6M																											
		Construct balance of Western Storage Basin	**$1.6M**			$1.6M																											
		Land Western Swale	**$458.6K**			$458.6K																											
		Construct Western Swale	**$2.1M**				$2.1M																										
		Trunk Reticulation Connector Road	**$3.1M**				$496.4K	$2.6M																									
		Land Western Outlet Alignment	**$57.0K**					$57.0K																									
		Construct Western Outlet to the Stream	**$4.0M**										$4.0M																				
		North Eastern Trunk Reticulation	**$804.7K**	$259.0K	$268.8K	$276.9K																											
		Land - NE Swale	**$314.0K**	$314.0K																													
		Construct NE Swale	**$2.0M**	$644.0K	$1.3M																												
		Consenting Costs	**$100.0K**	$100.0K																													
		Land Victoria Rd Swale	**$843.8K**				$843.8K																										
		Construct Victoria Rd Swale	**$1.0M**				$1.0M																										
		Surcharge Chamber & Overflow Path to Stream	**$369.6K**									$369.6K																					
		District Wide Stormwater Renewals	**$23.6M**	$200.0K	$207.6K	$213.8K	$220.6K	$227.8K	$235.8K	$244.6K	$253.8K	$264.0K	$275.0K	$740.0K	$740.0K	$740.0K	$740.0K	$740.0K	$400.0K	$400.0K	$400.0K	$400.0K	$400.0K	$1.6M	$1.6M	$1.6M	$1.6M	$1.6M	$1.6M	$1.6M	$1.6M	$1.6M	$1.6M
		Project under $1m estimate	**$1.9M**											$68.8K	$71.1K	$73.5K	$76.0K	$78.5K	$81.0K	$83.6K	$86.3K	$88.8K	$91.3K	$94.0K	$96.7K	$99.5K	$101.9K	$104.4K	$106.9K	$109.5K	$112.2K	$114.5K	$117.0K
	TOTAL	**TOTAL**	**$47.5M**	**$4.2M**	**$1.8M**	**$5.2M**	**$4.7M**	**$2.8M**	**$235.8K**	**$244.6K**	**$253.8K**	**$633.6K**	**$4.3M**	**$808.8K**	**$811.1K**	**$813.5K**	**$816.0K**	**$818.5K**	**$481.0K**	**$483.6K**	**$486.3K**	**$488.8K**	**$491.3K**	**$1.7M**	**$1.7M**	**$1.7M**	**$1.7M**	**$1.7M**	**$1.7M**	**$1.7M**	**$1.7M**	**$1.7M**	**$1.7M**	**$1.7M**
Waikato	Stormwater services	Tamahere stormwater structure plan work	**$138.4K**	$48.0K	$49.2K	$41.3K																											
		Pokeno stormwater treatment plant extensions	**$3.6M**	$359.8K	$277.2K	$751.3K		$305.8K	$1.1M		$831.3K																						
		Pokeno stormwater reticulation extensions	**$919.1K**	$359.8K	$307.2K	$252.1K																											
		Tuakau stormwater reticulation extensions	**$733.7K**		$51.2K	$280.7K	$401.7K																										
		Pokeno stormwater reticulation upgrades	**$210.5K**		$102.5K		$108.1K																										
		Tamahere stormwater structure plan work	**$191.2K**	$66.3K	$67.9K	$57.0K																											
		Pokeno stormwater treatment plant extensions	**$10.3K**		$10.3K																												
		Raglan stormwater reticulation extensions	**$3.7M**	$100.0K	$356.3K	$365.6K	$375.8K	$386.7K	$398.7K	$411.5K	$425.2K	$439.9K	$455.9K																				
		Te Kauwhata stormwater reticulation extensions	**$172.5K**		$35.9K	$136.6K																											
		District Wide stormwater reticulation upgrades	**$2.2M**	$70.0K	$71.7K	$147.2K	$507.9K	$522.6K	$538.8K	$82.8K	$85.6K	$88.5K	$91.8K																				
		Ngaruawahia stormwater reticulation upgrades	**$409.8K**		$409.8K																												
		District Wide stormwater reticulation renewals	**$797.7K**	$70.0K	$71.7K	$73.6K	$75.6K	$77.8K	$80.2K	$82.8K	$85.6K	$88.5K	$91.8K																				
		Renewals - Not detailed	**$5.8M**											$430.0K	$430.0K	$430.0K	$430.0K	$430.0K	$448.0K	$448.0K	$448.0K	$448.0K	$448.0K	$134.8K	$134.8K	$134.8K	$134.8K	$134.8K	$156.4K	$156.4K	$156.4K	$156.4K	$156.4K
		Levels of Service - Not detailed	**$3.5M**											$299.8K	$299.8K	$299.8K	$299.8K	$299.8K	$116.4K	$116.4K	$116.4K	$116.4K	$116.4K	$134.8K	$134.8K	$134.8K	$134.8K	$134.8K	$156.4K	$156.4K	$156.4K	$156.4K	$156.4K
		Additional Demand - Not detailed	**$0.0K**											$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K	$0.0K
	TOTAL	**TOTAL**	**$22.5M**	**$1.1M**	**$1.8M**	**$2.1M**	**$1.5M**	**$1.3M**	**$2.1M**	**$577.1K**	**$1.4M**	**$617.0K**	**$639.4K**	**$729.8K**	**$729.8K**	**$729.8K**	**$729.8K**	**$729.8K**	**$564.4K**	**$564.4K**	**$564.4K**	**$564.4K**	**$564.4K**	**$269.6K**	**$269.6K**	**$269.6K**	**$269.6K**	**$269.6K**	**$312.8K**	**$312.8K**	**$312.8K**	**$312.8K**	**$312.8K**
TOTAL THREE COUNCILS			**$409.4M**	**$7.7M**	**$5.2M**	**$10.0M**	**$9.2M**	**$6.8M**	**$5.5M**	**$7.4M**	**$17.7M**	**$16.9M**	**$8.9M**	**$5.3M**	**$32.9M**	**$5.4M**	**$6.1M**	**$4.3M**	**$5.2M**	**$32.6M**	**$5.3M**	**$4.8M**	**$6.1M**	**$9.3M**	**$38.4M**	**$5.1M**	**$11.2M**	**$11.2M**	**$10.8M**	**$54.2M**	**$12.2M**	**$19.9M**	**$33.7M**