



Appendix C Assumptions for Costs and Benefits of Change

This appendix includes

- common assumptions
- transitional costs and benefits
- ongoing costs and benefits
- notes on inflation
- WSP report on benefits of improved asset management.

Common assumptions used for the purposes of modelling and comparison

- All costs are in addition to the total existing three waters budgets (operational and capital) assumed to transfer into any mode. This appendix only identifies changes to that budget.
- All options are assumed to fully fund depreciation.
- Average three water residential rate is based on the total rates requirements divided by the number of connections and assumes that commercial customers continue to pay a similar share of the cost of three water services under all options.
- Debt is used to fund the capital program in any single year where there is not sufficient operating cash and where in any single year there is excess operating cash then debt is repaid.
- Additional costs have been modelled into all options based on
 - increased compliance costs associated with regulatory reform
 - auditing new regulatory requirements
 - additional future capex over and above what is planned for each council in their LTP based on estimates prepared for the Department of Internal Affairs for the costs of meeting infrastructure upgrades to satisfy the National Policy Statement for Freshwater Management, meeting upgraded drinking water standards and upgrades to wastewater treatment plants that discharge to the marine environment.
- Any change to a new delivery model is assumed for modelling purposes to take place on 1 July 2022. The actual start date will be determined by the Councils should they choose to proceed.
- Modelling includes efficient capital and operational transition costs to set up a new model and ongoing operational costs once a new model is decided upon. Co-design costs are not accounted for as it is assumed they are incurred as part of the engagement leading up to the final decision. Additional costs have been included to support co-governance.
- Operating costs and revenue requirements for the financial years post 2027/28 are projected using the BERL local government cost index 20-year average indexation rate.
- Capital works for the financial years post 2027/28 are forecast using the BERL local government cost index 20-year average indexation rate, with the exception of Napier City Council and Hastings District Council, whose capital works for the 2028/29 and 2029/30 years were advised by councils and reflect planned investment.
- Savings grow progressively over three years to the stated values to recognise the transition to a fully efficient new model over three years.
- Procurement savings realised progressively to allow time to regionalise contracts and/or achieve savings through purchasing power.

	SSBU	Management Option	Asset Owning Option	Rationale
Transitional costs and benefits (short term to establish the CCO)				
Operational costs				
Transitional body	\$500,000	\$1,000,000	\$1,000,000	Transitional body established and resourced Set up shell CCO with CEO, Tier 2 and Board appointed six months ahead of operations
Business process change	\$250,000	\$500,000	\$500,000	It is prudent to allow for transformation costs when merging staff from several organisations together and when designing a new operating model and associated structure
ICT Business Process	\$250,000	\$500,000	\$500,000	As ICT systems are consolidated, updated, or introduced, business processes will need to be reviewed and updated for efficiency. Also, staff will need to be trained on the new systems.
Communications and Marketing	\$100,000	\$250,000	\$250,000	Setting up a new model will require additional engagement with stakeholders to inform them of the changes.
Branding	\$25,000	\$50,000	\$50,000	In addition to existing branding costs, allowance was made for development of logo in different formats and communication of it to staff and public. (The cost of updating uniforms, stationery, website and vehicle branding was assumed to be included as part of business process and transition costs).
Re-organisation costs		\$600,000	\$600,000	Assume remaining existing three waters staff and support roles to be similar enough to transfer to new organisation, however it is prudent to allow for some restructuring costs as some staff may choose not to transfer. Depending on the model selected and final structure, some of these costs may not be required.
Capital Costs				
IT capital cost	\$500,000	\$1,500,000	\$2,500,000	Asset owning higher to allow for billing system. Assume SSBU is able to use existing council systems initially, however some consolidation of the multiple systems will be required. CCOs will be required or will choose to purchase their own corporate (GL, billing, payroll etc), asset management, CRM and customer service. Tech one in NSW mergers were around \$1M but general run over. Could be reduced if able to go to cloud-based systems.
Office fit out	\$735,000	\$905,000	\$981,000	Floor area based on 15m ² per staff member x state service guide fitout allowance of \$600 per m ² .

	SSBU	Management Option	Asset Owning Option	Rationale
Ongoing costs and benefits				
<i>Operational costs</i>				
Directors	\$40,000	\$120,000	\$150,000	Benchmarked on average fees paid to directors and chair of Wellington Water (Management CCO) as reported in their annual report and allowing for inflation. Assume four directors including a chairperson for each CCO. Assume two external appointees to oversee SSBU. Asset owning CCO has more responsibility for water supply assets and overall reputation of organisation, so fees increased by 25%.
Co-governance	\$25,000	\$50,000	\$50,000	For each CCO, assumes cost of supporting Māori develop and implement co-governance capability.
Tier 1 additional costs	\$250,000	\$300,000	\$350,000	New CEO role, remuneration based on tier 2 position in a large water CCO as reported in annual reports. For SSBU used proxy for existing GM level. Assumed higher pay for Asset owning due to the extra responsibility for the services.
Tier 2 additional costs	\$0	\$300,000	\$500,000	Additional costs for increase in scope of Tier 2 roles on top of existing staff costs assuming some Tier 2 existing employees may step up to expanded roles while some new capability will need to be brought in. Calculation used remuneration based on current 3rd tier mid-point in the current HB TA salaries and other water CCO remuneration (excluding large CCOs) of second tier directors/managers. Assumes some additional skill sets and commercial acumen will be required. Sources: council data and annual reports.
ICT - extra operating	\$50,000	\$50,000	\$100,000	Based on assumption that current system costs transfer but new license fees, connectivity, and data transfer costs will be incurred.
Harmonisation of salary	\$145,000	\$145,000	\$145,000	To same average cost (excluding Napier operational roles). For the SSBU, some secondments might need a higher duty allowance to recognise relocation and increased quantum of work.
Auditor remuneration	\$15,000	\$68,000	\$165,000	Additional cost of financial auditing based on complexity of organisation structure and assets.
Regulatory auditing	0.5% of total opex	0.5% of total opex	0.5% of total opex	When new regulatory requirements are put in place from 2022 or 2023, additional auditing of compliance will be required.
Accommodation - office rent	\$268,000	\$349,000	\$385,000	Allowed 15m ² per staff member and used \$300 per square metre. This is the market rate based on a desktop review of commercial office rents in Hastings and Napier.

	SSBU	Management Option	Asset Owning Option	Rationale
				Subtracted existing rental cost to get additional costs. No allowance for depot rent but assumed to be within existing budgets if this function transfers.
Office overheads	\$27,000	\$35,000	\$38,500	Allowed ~ 10% of office accommodation cost for insurance, electricity etc.
Staff overheads	\$66,000	\$198,000	\$242,000	In addition to overhead costs already transferred from councils, allowed ~10% of new corporate staff plus Tier 1, Tier 2 and Board additional costs. Allows for expenses, vehicles, tools of trade etc.
Additional resources	\$343,000	\$1,210,000	\$1,365,000	Additional staff to create support structure. Includes Māori advisory function, HR, IT, Finance, health and safety and customer service.
Operational savings				
Asset management practices efficiency	3 - 3.5%	6 - 7%	10 - 11%	Refer to WSP Opus study included in this appendix, scaled down for SSBU and low/mid-point used to be conservative. Applied across total operational costs and capital excluding insurance, depreciation, electricity, rates and overheads.
Staff turnover (excluding managerial)	\$0	\$404,000 (by Year 3)	\$531,000 (by Year 3)	Assume initial saving 0%, 1.5% and 2% respectively over the first three years via not replacing natural attrition of staff (about 1 – 2 FTE per annum).
Procurement efficiencies	1.5%/year \$1.16m (by Year 3)	3%/year \$2.33m (by Year 3)	4.50%/year \$3.49m (by Year 3)	Bulk strategic procurement from aggregation of purchases and regional contracts. Adoption of advanced procurement approaches over the region. Assume some reduction in use of professional services through use of new capacity and capability of staff. Applied across combined capital programme and outsourced operational costs.

Notes on Inflation

Inflation figures for the financial modelling are sourced from the Local Government Cost Index (LGCI) produced by Business and Economic Research Limited (BERL) for the New Zealand Society of Local Government Managers. This is the index that councils use to inform their long term plans.

It is likely that the inflation figures used will be higher over the near term than actual inflation.

On 13 May 2020, the Monetary Policy Committee (MPC) of the Reserve Bank of New Zealand released its Monetary Policy Statement (MPS) which included their analysis of recent changes in the world and NZ economy due to the COVID-19 pandemic:

“The global economic disruption caused by the COVID-19 pandemic is expected to persist and lead to lower economic growth, employment, and inflation both in New Zealand and abroad. Even if New Zealand successfully contains the spread of disease locally, reduced world activity will mean lower demand for many of New Zealand’s exports. The Monetary Policy Committee is committed to achieving its employment and inflation objectives. The main support for the economy in this environment is appropriately being provided through increased fiscal spending. However, monetary policy will continue to provide significant support through keeping interest rates low for the foreseeable future.”

The MPC must set policy to keep future annual inflation between one and three percent over the medium term, with a focus on keeping future inflation near the two percent midpoint. The MPC practises forecast targeting, which means that it sets monetary policy such that it expects to achieve its inflation and employment goals in the medium term. In most instances the MPC aims to return inflation to the target mid-point within a one to three year horizon.

The May MPS noted:

- that survey measures of inflation expectations have declined significantly. Averaging across several measures, one- and two-year-ahead expectations fell to 0.8 and 1.5 percent in the June quarter 2020. Longer-horizon expectations also fell, with five-year-ahead expectations falling to 1.8 percent.
- to support its inflation and employment mandates, the MPC reduced the OCR to 0.25 percent in March and signalled its intention to keep the OCR at this level for at least a year. It also decided to implement a large scale asset purchase (LSAP) programme.
- that considerable monetary stimulus remains necessary to achieve inflation objectives. Given the unparalleled developments over the past three months, the economic outlook is very uncertain.
- inflation expectations have declined. Lower inflation expectations are likely to further suppress inflation outcomes through their effects on firms’ price-setting decisions.

Morrison Low notes that local government price inflation is generally higher than CPI. In May 2019, the Productivity Commission released a report as part of their inquiry into local government funding and financing. They commissioned from Sapere Research Group titled ‘Analysis of Local Government Cost Drivers’. Sapere had the task of constructing a price index that measures changes in prices faced by local councils. examining the inflationary pressures councils face. The report found:

- local government price inflation has risen faster than the CPI, reflecting that all relevant input indices have risen faster than the CPI over the same period
- salary and wage growth has been relatively restrained, prices have risen faster in capital expenditure (CAPEX) categories (due to more roading, transport, and community activities) than operational expenditure (OPEX) categories (with inflation primarily from water and environmental management work)
- price inflation for OPEX varies between council types: regional councils have faced the highest price pressures, while metropolitan councils have faced the lowest. This extends to real per capita growth; initial investigation suggests tourism may be a key factor
- price inflation for CAPEX is relatively similar across the council types.

1 Introduction & Scope

It is forecast that over the next 10 years the 4 Councils in the Hawkes Bay Region will spend \$524m on capital works and operations and maintenance on their 3Waters system, refer Table 1.

This assessment estimates the benefits that could arise from improved asset management of the 3water supplies in the Hawkes Bay region.

A ballpark estimate is provided, giving a general indication in monetary terms of the scale of possible benefits.

Table 1 – Budgeted 3Waters Expenditure FY18/19 to FY27/28 (Total of 4 TLA)

LTP Budgets FY18/19 to FY27/28	
CapEx to meet additional demand	\$31,531,000
CapEx to improve the level of service	\$128,182,543
CapEx to replace existing assets	\$154,154,502
Total CAPEX FY18/19 to FY27/28	\$313,868,045
Total O&M¹ FY18/19 to FY27/28	\$229,081,224

1 O&M budget is OPEX less insurance, depreciation, overheads and interest on loans

2 Assessment Method

Benefits are quantified in terms of monetary savings. Savings can arise from either reduction in expenditure or the provision additional service. In the latter case the extra amount it would have cost to provide the additional service without improved asset management practices is treated as a saving.

The analysis is supported by research undertaken by WSP Opus that identified the benefits arising from improved asset management. The research reviewed over 20 case studies gathered from a variety of public infrastructure sectors across the globe. The case studies included projects delivered by WSP Opus as well projects delivered by other organisations.

The research identified the overall savings to Capex and O&M expenditure that could be achieved and then determined the savings that various components of asset management practice could generate.

The research determined that reductions in total expenditure in the range of 10% to 40% can be achieved. As an example, OFWAT in the UK have reported that water bills are 30% lower than they would have been if privatisation and regulation had not been introduced (over a 20year period). Most of these savings being generated because of improved asset management practices.

The quantum of savings that can be generated from improved asset management depend on:

- The complexity of the asset system, i.e. the more complex the system the greater the likely savings.
- The existing level of asset management maturity/sophistication, i.e. the less sophisticated the existing practices, the greater the scope for savings from improved asset management systems.
- The age of the system and the rate of change, i.e. initially limited savings are likely to achieved on new networks. Greater savings can be expected as assets age and reach the end of their lives or in systems experiencing a lot of change or growth.

Savings from improved asset management arise from:

- Efficiency – *doing things right, with less inputs*
- Effectiveness – *doing the right thing*
- Efficacy - *setting the right objectives*, in terms of asset and community outcomes

This assessment concentrates on the savings likely to arise from effectiveness as the other two areas are addressed elsewhere in the review of 3waters services., as:

- Gains from increased efficiency will largely arise from adoption of alternative contracting strategies.
- Savings from efficacy largely arise from improved governance.

The research also identified various components of improved asset management practice and quantified the savings that can be achieved through adoption of these practices. The relevant components being:

- Risk based maintenance, i.e. focusing maintenance activities on assets with the highest consequence and/or likelihood of failure.
- Optimising reactive/proactive maintenance, e.g. adopting just in time jetting programmes to reduce blockages.
- Extending asset life through increased knowledge of asset condition and deterioration.
- Making the most of existing infrastructure, to avoid the need for capital improvements.
- Improved project selection, identifying projects that provide the greatest combined benefit rather than taking a silo approach to project selection.

3 Assessment

The assessment has been undertaken in two steps:

- An initial assessment was made considering the scale of expected savings at total expenditure level.
- A refined assessment was undertaken considering the savings likely to be generated from the various components of improved asset management.

3.1 Initial Assessment

It is estimated that savings to CAPEX and O&M expenditure in the order of 10% can be achieved through improved asset management. This would save \$54mil over the next 10 years. This assessment is based on:

- Extent of assessment, i.e. the assessment only considers saving arising from improved effectiveness, not efficiency or efficacy.
- Complexity of the systems – 3waters systems are moderately complex.
- Existing level of asset management maturity - current asset management practices are at core to intermediate level, with scope to improve to advanced.
- Age of the system – sections of the networks are reaching the end of their useful lives, providing increased scope for asset management savings.

3.2 Asset Management Components

To refine the estimate the savings from individual asset management components were assessed. The relevant components and the expected savings being from:

- Optimising reactive and proactive maintenance, generating potential reductions in maintenance budgets in the order of 7% to 15%.
- Extending asset lives, generating reductions in renewals budgets in the order of 7% to 15%.
- Improved project selection and making the most of existing assets, generating reductions in level of service and growth CAPEX works in the order of 6% to 14%.

Further savings are not expected to be generated from risk-based maintenance practices as the TLAs have largely adopted these practices already.

The assessment is summarised in Table 2. It is estimated that savings in the range of 7% to 15% of total CAPEX and O&M expenditure can be achieved, i.e. between \$36m and \$80m over the next 10 years.

4 Summary of Assessment

It is estimated that savings in the range of 7% to 15% of total CAPEX and O&M can be achieved from improved asset management practices associated with:

- Optimising reactive and proactive maintenance
- Extending asset lives
- Improved project selection and making the most of existing assets

This would save between \$36m and \$80m over the next 10 years.

Table 2 - Summary of Assessment

Item	Combined LTP Budget FY18/19 to FY27/28	Initial Assessment	Assessment of Components (Lower Bound)			Assessment of Components (Upper Bound)		
			Optimising reactive and proactive maintenance	Extending asset lives	Improved project selection and making the most of existing assets	Optimising reactive and proactive maintenance	Extending asset lives	Improved project selection and making the most of existing assets
			10%	7%	7%	6%	15%	15%
CapEx to meet additional demand	\$31,531,000				\$1,891,860			\$4,414,340
CapEx to improve the level of service	\$128,182,543				\$7,690,953			\$17,945,556
CapEx to replace existing assets	\$154,154,502			\$10,790,815			\$23,123,175	
Total O&M	\$229,081,224		\$16,035,686			\$34,362,184		
			\$16,035,686	\$10,790,815	\$9,582,813	\$34,362,184	\$23,123,175	\$22,359,896
Total CAPEX & O&M	\$542,949,269	\$54,294,927	\$36,409,313			\$79,845,255		
		10%	7%			15%		