

Notice is given that an ordinary meeting of the Full Council will be held on:

Date: Friday 30 November 2018
Time: 9.30am
Meeting Room: Tasman Council Chamber
Venue: 189 Queen Street
Richmond

Full Council

AGENDA

MEMBERSHIP

Mayor	Mayor Kempthorne	
Deputy Mayor	Cr King	
Councillors	Cr Brown	Cr McNamara
	Cr Bryant	Cr Ogilvie
	Cr Canton	Cr Sangster
	Cr Greening	Cr Tuffnell
	Cr Hawkes	Cr Turley
	Cr Maling	Cr Wensley

(Quorum 7 members)

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AGENDA

1 OPENING, WELCOME

2 APOLOGIES AND LEAVE OF ABSENCE

Recommendation

That apologies be accepted.

3 PUBLIC FORUM

4 DECLARATIONS OF INTEREST

5 LATE ITEMS

6 CONFIRMATION OF MINUTES

7 PRESENTATIONS

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8 REPORTS

8.1 WAIMEA COMMUNITY DAM PROJECT

Decision Required

Report To:	Full Council
Meeting Date:	30 November 2018
Report Author:	Janine Dowding, Chief Executive Officer; Dennis Bush-King, Environment and Planning Manager; Susan Edwards, Community Development Manager; Mike Drummond, Corporate Services Manager; Richard Kirby, Engineering Services Manager; Lucy Clark, Principal Legal Advisor
Report Number:	RCN18-11-16

1 Summary

- 1.1 This report is the culmination of many other reports, discussions and decisions concerning the Waimea Community Dam. This report provides Council with the information that it needs to make a final decision on whether to proceed with the Waimea Community Dam (the Dam) proposal.
- 1.2 On 6 September 2018, Council re-confirmed its earlier decision of 27 July 2017 (CN17-07-20) that the proposed Waimea Community Dam was the best solution for meeting the community's need for good quality, local water supply infrastructure and meeting its wider water management responsibilities. In doing so, Council instructed staff to progress negotiations and work streams through to a final agreement for Council approval as part of the project financial close in late November 2018.
- 1.3 We are now at the critical time for financial close. The Crown Irrigation Investment Limited (CIIL) and Ministry for Environment Fresh Water Improvement funding will no longer be available after 15 December 2018. CIIL have indicated that the funding will still be available if the Local Bill is not passed by the 15 December 2018 deadline, provided all other matters have been resolved and contracts have been signed.
- 1.4 The case for the Waimea Community Dam and the consequences of not having the Dam as the preferred solution to augmenting water in the Waimea Basin have been clearly stated in the 28 August report to Council (RCN18-08-01 contained in attachment 1). This report is attached as it contains relevant information for your consideration, rather than repeating large amounts of information in this report. Council should also review report RCN18-09-02 from the 6 September 2018 Full Council meeting.
- 1.5 There has been some movement in prices since the 28 August 2018 Council report. The total project estimate was \$102.171 million and that has now increased to \$105.9 million. The following table outlines the work streams within the project and the respective prices.
- 1.6 There have been some changes to the funding structure since the 6 September report, including:

- 1.6.1 there is no longer a single large institutional investor, as it has been replaced by an investor consortium made up of a group of irrigators. The convertible preference shares have become convertible notes; and
- 1.6.2 CIIL has further reduced its lending rate to Waimea Irrigators Ltd. With Council taking some interest rate risk, this has allowed WIL to service \$8.75m of council debt in the CCO for 15 years; and
- 1.6.3 The level of Development Contributions to the project has been recalculated based on the increased cost. This has provided an additional \$500k of funding into the Urban Water account and;
- 1.6.4 The Council loan repayments have been updated for the latest estimated long term fixed rate borrowing available through the LGFA.
- 1.6.5 The continuing negotiations and changes in funding have resulted in changes to the arrangements these have been included in the agreements attached to the confidential paper on this agenda; and
- 1.6.6 The directors elect acting in a voluntary capacity have provided feedback on the project resourcing. That has included support for the staff position that an increase in resourcing for the Project office will materially reduce any risk of cost over runs. This is due to having the resources to better oversee the project.
- 1.7 This report is asking Council to consider the following options:
- 1.8 Option 1: Proceed with the Waimea Community Dam proposal and funding arrangements for Council's share of the project costs outlined in this report; or
- 1.9 Option 2: Decide, in principle, not to proceed with the Waimea Community Dam proposal and funding arrangements as outlined in this report; to commence further work towards identifying alternative options to the Dam (and any associated funding arrangement), which will provide a secure community water supply and meet our regional council obligations; and commence a process to amend the Long Term Plan to reflect the fact that the Waimea Dam is no longer the Council's preferred water augmentation solution for the Waimea Plains.
- 1.10 The advantages and disadvantages of Options 1 and 2 are discussed in further detail in this report.
- 1.11 Staff recommend Council adopts Option 1. This option is consistent with the rating impact and debt cap contained in the Long Term Plan 2018-2028.
- 1.12 The report also discusses the Council's decision making obligations, the policy and legal context surrounding the decision and the financial implications of the decision Council is being asked to make.

2 Draft Resolution

That the Full Council:

- 1. receives the Waimea Community Dam Project report RCN18-11-16; and**
- 2. agrees it is satisfied that it has considered the range of potential options for water augmentation in the Waimea Plains and notes that it has previously agreed that the Waimea Community Dam in the Lee Valley is the preferred solution to address problems of over allocation and future demand for water; and**
- 3. agrees it has a good understanding of the Tasman community's views and preferences on the Dam proposal and notes that there are widely varying views on the proposal within the community; and**
- 4. agrees to proceed with the Waimea Community Dam proposal, subject to the Waimea Irrigators Ltd and Crown Irrigation Investment Ltd also agreeing to proceed with the proposal; and**
- 5. agrees that the reasons for supporting the Dam proposal include:**
 - a. the broad range of benefits offered by the proposed Waimea Community Dam compared to the alternatives, including addressing Council's water management obligations under the Resource Management Act; the National Policy Statement on Freshwater Management; and the National Policy Statement on Urban Development Capacity; and providing a secure community water supply; and**
 - b. the costs, lower level of benefits, risks and uncertainty associated with the alternatives; and**
 - c. the obligation to provide good quality network infrastructure that is most cost effective for households and businesses; and**
- 6. confirms the Waimea Community Dam proposal will be delivered through Waimea Water Limited (a Council Controlled Organisation); and**
- 7. accepts the total project budget of \$105.9 million, including \$8.5 million of risk and contingency provisions; and**
- 8. notes the construction price for the Dam from the Fulton Hogan Taylor Joint Venture of \$66.3 million; and**
- 9. agrees to Council's total contribution to the project of \$53.7m made up of:**
 - a. Funding from the "Water club" \$12.11m; and**
 - b. District wide and Zone of Benefit Rates funding \$5.5m; and**
 - c. Funding from Development Contributions (Water Supply) \$2.4m; and**
 - d. Contribution from the Enterprise Activity balance of \$2.91m; and**
 - e. Pass through Contribution from Ministry for the Environment Freshwater fund grants \$7m; and**
 - f. Pass through Contribution from Nelson City Council \$5m; and**

- g. Crown Irrigation Investments Limited /Council Environmental and Public Good Loan \$10m; and**
- h. Pass through funding from the Local Government Funding Agency to Waimea Water Limited \$ 8.75m; and**

10. notes that its contribution outlined in 9. above will be funded in part by:

- a. borrowing through the Local Government Funding Agency of approximately \$26.4m and on-lending of \$8.75 m, under a 40 year term loan, to Waimea Water Limited (WWL), with the finance costs for that \$8.75m being included in the operating charge to Waimea Irrigators Limited (WIL) for the first 15 years and to Council for the remaining period of the loan; and**
- b. accepting a 20 year zero interest rate Environmental loan of \$10m from Crown Irrigation Investments Limited (CIIL) with four equal \$2.5m repayments at five yearly intervals from financial close; and**
- c. utilising approximately \$250,000 per annum of the money saved by the reduced repayments on the CIIL Environmental Loan, and any addition funds collected by the district wide rates for the environmental/public benefits to assist in building a specified reserve to assist Council in repaying the \$8.75m CCO loan when Council becomes responsible for that in 15 years time; and**

11. notes that Council has previously approved the WWL company constitution on 8 November 2018 (RCN18-10-15) and there have been subsequent minor changes to align the document to the other project documents in particular the shareholders agreement prior to company registration; and

12. authorises the execution on behalf of Council of the following confidential agreements to which the Council is a signatory (contained as attachments to the confidential report RCN18-11-17), subject to any minor edits or changes cleared by Council's legal advisors:

- a. The Shareholders Agreement - Waimea Water Ltd; and**
- b. The Project Deed - Waimea Community Dam Project; and**
- c. The Wholesale Water Augmentation Agreement - Council; and**
- d. The Facility Agreement (Waimea Community Dam - Environmental Term Loan); and**
- e. The TDC/WWL Shareholder Loan Agreement; and**
- f. The Ngati Koata Land and Water Use Partnering Deed; and**
- g. The Hydro Power Term Sheet - Waimea Water Limited; and**
- h. The Agreement to Acquire Interest in Crown Forest Licence - Tasman Pine Forests Ltd; and**

13. authorises the execution on behalf of Council of the second ranking security documents covering the Tasman District Council/Waimea Water Ltd Shareholder Loan, to which the Council is a signatory (contained as attachments to the confidential report RCN18-11-xx), subject to any minor edits or changes cleared by Council's legal advisors; and

14. notes the terms and conditions contained within the other confidential agreements to which Council is not a signatory (contained as attachments to the confidential report RCN18-11-17), but which may be subject to minor edits or changes:
 - a. The Project Facility Agreement (Waimea Community Dam); and
 - b. The General Security Deed - (Waimea Community Dam) Waimea Water Ltd; and
 - c. The Feather Weight Security Deed (Waimea Community Dam - Borrower) Waimea Water Ltd; and
 - d. The General Security Deed (Waimea Community Dam - Guarantor) Waimea Irrigators Ltd; and
 - e. The Wholesale Water Augmentation Agreement - Waimea Irrigators Ltd; and
 - f. The Shareholder Water Augmentation Agreement - Waimea Irrigators Ltd; and
15. authorises the execution on behalf of Council of the necessary agreements to transfer Council's interest in the land and access arrangements to Waimea Water Limited; and
16. authorises the execution on behalf of Council of the necessary agreements to transfer Council's interest in the resource consents for the Waimea Community Dam to Waimea Water Limited, subject to Waimea Community Dam Limited also agreeing to transfer its interest in the resource consents to Waimea Water Limited; and
17. notes that on the execution of the necessary agreements on behalf of the Council, Council is legally bound by the terms of those agreements; and
18. notes that pass through funding from Council to Waimea Water Ltd is excluded from Council net debt calculation and therefore does not impact on the current \$200m net debt limit; and
19. authorises the Mayor to vote Council's shares in Waimea Water Limited to give effect to any shareholders resolutions necessary to enable the project to proceed; and
20. acknowledges the support of many who have made it possible to get to this point in the proposal to address the water security issues on the Waimea Plains including the Waimea Water Augmentation Committee, and in the more recent negotiations, Ngati Koata Iwi Trust, Nelson City Council, Waimea Irrigators Limited, Crown Irrigations Investments Limited, and it looks forward to receiving financial sign off from WIL and CIIL our funding partners; and
21. acknowledges that the Waimea Water Augmentation Scheme has been contentious and challenging over its very drawn out life cycle and that there are still many in the community who believe it is not needed or is unaffordable, but that in making this decision today, the Council considers that the future environmental, economic, social, and cultural well-being of the community is best served by confirming the need for the Waimea Community Dam, and in working collaboratively with our funding partners, this is the only feasible way to ensure the Council meets its obligations to the Tasman community to provide necessary network infrastructure and meet its environmental management responsibilities into the future.

3 Purpose of the Report

- 3.1 The purpose of this report is to provide Council with the information it needs to make a well-informed, reasoned and robust decision on:
- whether to proceed with the Waimea Community Dam proposal and to construct and fund the Dam, as outlined in this report; and
 - the term sheets outlined in report RCN18-11-17, also contained in this agenda.

4 Background and Discussion

- 4.1 Council is referred to the report to the 28 August 2018 meeting (RCN18-08-1) as it contains matters which are relevant to today's decisions. However, we reiterate the following matters.

The Drivers of the Project Since Inception

- 4.2 Since the 1980s, water in the Waimea Plains has been over-allocated (i.e. there is not enough water for all the people who have consents to take water, including community water supplies, rural irrigators, commercial and industrial water users). Periods of dry weather have triggered water restrictions nearly every summer since 2001 with resulting effects on residents and businesses.
- 4.3 Minimum water flows required in the Waimea River to maintain ecological, cultural and recreational values cannot be achieved under the existing water allocation regime.
- 4.4 If there is no Dam and river flows are low, all water take permits (including community supply, urban and low flow rural permits) from the Waimea aquifers and river system would be severely cutback. In order to protect the health of the Waimea River and avoid saltwater contamination of groundwater, a minimum river flow of 800 litres per second is necessary. This minimum flow is well below the 1,300 l/s required to maintain the river flows at the seven day mean annual low flow (MALF) level and below the 1,100 l/s the Dam is designed to deliver.
- 4.5 Water cutbacks and rationing would have a substantial impact on Waimea Plains urban, rural restricted and industrial water users in Richmond, Brightwater, Redwood Valley, Mapua and Nelson South; on commercial water users in the surrounding area; and on horticultural and agricultural water users.
- 4.6 Security of water supply is essential for the local economy. A third of all employment in the Tasman District is in the primary industries and manufacturing sectors. 50% of Council's community water supply for the areas mentioned in 4.5 is used by businesses.

Changes that have occurred in the environment over time

- 4.7 Our region is projected to experience more extreme and frequent drought conditions (NIWA August 2015 Climate Change and Variability – Tasman District) and some form of water rationing for nine out of every ten years is to be expected without the Dam.
- 4.8 Population projections show Tasman's population growth is projected to be 9% between 2018 and 2038. Recent population and dwelling growth rates indicate that these projections are conservative with the combination of population growth and a trend for smaller households placing more pressure on our water supply.

4.9 The previous Government introduced a National Policy Statement for Urban Development Capacity (NPS-UDC). This new NPS-UDC requires us to plan and provide the necessary infrastructure such as water and wastewater to meet projected housing and business demand.

4.10 The demand for water will increase and the Dam is the means of meeting this demand.

The factors which have made the Dam the preferred option over a number of years

4.11 For many years, Council has accepted that ‘doing nothing’ is not an option when it comes to addressing the water allocation and water quality issues in the Waimea River catchment. There is a compelling case for action.

4.12 The proposed Waimea Community Dam in the Lee Valley has been accepted by Council as the preferred solution to the need to augment the Waimea River and its aquifers. It is the most cost effective and feasible solution to provide multiple benefits to urban water users (residential, low pressure rural, commercial, and industrial), the environment and to water users on the Waimea Plains. Furthermore, the Council is obliged to meet the current and future needs of communities for good quality local infrastructure, in a way that is most cost effective.

The alternatives and how they compare to the Dam option.

4.13 Since 1991, Council has been involved in the investigation of water augmentation options for the Waimea Basin. We have commissioned many reports over the years including a feasibility study undertaken between 2004 and 2007 that looked at 18 different sites. Of all of the water augmentation options investigated, a dam in the Lee Valley was the preferred option.

4.14 Over the years since 2004, several of the 18 alternatives originally identified have been reassessed and presented to Council in various forms.

4.15 Staff presented the revised alternatives for only community water supply to Council at its meeting on 27 July 2017. Essentially the water storage options fall into four categories:

Option 1: Riverside Ponds storage (on banks of Waimea River); and

Option 2: Motueka aquifer (piping from Motueka to Mapua/Richmond); and

Option 3: Roding River storage (impoundment of Roding River); and

Option 4: Teapot Valley storage (impoundment in Teapot Valley).

4.16 An assessment and analysis of these options, their variations and updated cost estimates is contained in the 28 August 2018 report to Council. The Waimea Community Dam was found to be the most cost effective, reliable, and complete solution for providing water for the community water supply, and to address river health, biodiversity, economic, recreational and cultural matters.

4.17 The next best alternative to the Waimea Community Dam is the riverside pond option providing 800,000 m³ (0.8M m³) of storage. The estimated cost of pursuing this option is \$60m. There would be significant consenting challenges for this option.

4.18 The difference in the value proposition between these two options is stark. Council can pursue a complete solution together with others in our community for a total Council contribution of \$41.7m or it can go it alone and pursue a partial solution with a lower level of water security for the community water supply only, at \$60m.

- 4.19 Cost is not the only factor contributing to Council's previous decisions that the Waimea Community Dam is the preferred option. The wider social, economic, environmental and cultural benefits of the options were also relevant to the decision making. When other nonfinancial matters are considered, the choice becomes even clearer.
- 4.20 There are also risks or dis-benefits of the options to consider. In the case of the Waimea Community Dam most of the risks have been mitigated through the Plan Change process, design, consenting, procurement process and use of the Public Works Act. While there are residual (unmitigated risks) to be considered with the Dam such as flooding during construction and legal challenges, those risks exist with every option on top of the risks that have already been managed in the case of the Dam.
- 4.21 It must be noted that the costs of developing a proposal for any of the alternatives to the point of implementation has not been assessed. Such a proposal is likely to require several years and extensive Council resources.

5 Project Costs and Funding

Overall costs of the proposal

- 5.1 There has been some movement in prices since the 28th August 2018 Council reports. The total project estimate was \$102.171 million and that has now increased to \$105.782 million. The following table outlines the work streams within the project and the respective prices.
- 5.2 It needs to be noted that the estimate of \$102.171 assumed financial close by 15 December 2018, with construction mobilisation following immediately for works to commence in January 2019.

	28 August 2018 Project Estimates	30 November 2018 Project Prices
1. Procurement, ECI Phase, Design, Project Office	6,091,542	9,327,532
2. Land and Landowner Access	3,216,202	3,624,827
3. Governance & Corporate	1,602,875	1,573,593
4. Dam Construction	68,114,189	66,314,189
5. Site Access, Clearing, Roding	4,183,728	4,183,728
6. Escalation/Inflation Allowance	3,266,000	3,266,000
7. WW Risk Allowance	6,546,000	6,546,000
8. WW Contingency Allowance	2,000,000	2,000,000
9. Construction Related Professional Services	4,708,780	5,604,481
10. Consent Compliance	1,122,472	1,121,439
11. Sunk Costs	1,320,109	2,220,109
Total	102,171,897	105,781,897

- 5.3 Taking account of the community concerns about the potential for cost over-runs during the construction process, the Council has budgeted for additional project resourcing, increased oversight and professional technical input to further reduce the risk of cost-overruns and ensure the project is completed on time and within budget.
- 5.4 The nominee directors have also reviewed the project and provided input. The outcome is that an additional \$3.2 million has been added to the Project Office budget.

- 5.5 There are also additional costs that have been identified and/or incurred in achieving financial close. These are summarised as follows;
- Costs incurred in reaching financial close \$900k
 - Technical Supervision/Quality Assurance \$896k
 - Land and Access \$410k
- 5.6 In reviewing the construction contract, the project office has identified some scope changes that would result in savings of around \$1.8 million. These are summarised as follows;
- Remove upper spillway bridge \$700k
 - Replace fibre optic cable with data transmission \$500k
 - Remove ventilation ducts \$300k
 - Streamline temporary and geotechnical design \$400k
- 5.7 After the project estimate was presented as \$102.171m an intention was noted to fund \$3.0m in the project to reduce the project estimate closer to \$99.0m. As outlined, only \$1.8m in savings was identified.
- 5.8 Although the project price is \$105.782m, this report refers to funding of \$105.9m. This additional \$118k has been added to cover any minor variations that may occur.
- 5.9 The table below set out the allocation of capital costs for this project based on the project capital cost being circa \$105,900. There is likely to be a minor (if any) change as the budgets are finalised prior to 30 November 2018. The Capacity Allocation Model sets out the allocation of the total capital costs for the project using the principles previously agreed. Under this approach Council is responsible for \$54,109k of the costs and Irrigators through WIL \$51,791K of the capital cost of \$105.9m.

Dam Capacity Cost Allocation Model

		<u>Allocation of Costs to Extractive Users</u>		
<u>Design Capacity</u>		<u>Capacity</u>	<u>%</u>	<u>Capital Costs \$000s</u>
				\$ 105,900
Irrigation	Current	3,800	48.9%	36,277
	Future	1,200	15.5%	11,456
	Unallocated	425	5.5%	4,057
		<u>5,425 ha</u>	<u>69.9%</u>	<u>51,791</u>
Urban	TDC Current	620	8.0%	5,919
	TDC Future	780	10.0%	7,446
	Unallocated	425	5.5%	4,057
		<u>1,825 hae</u>	<u>23.5%</u>	<u>17,423</u>
	NCC	515	6.6%	4,917
Total Council		<u>2,340 hae</u>	<u>30.1%</u>	<u>22,339</u>
Total Extractive Use		<u>7,765 hae</u>	<u>100.0%</u>	<u>74,130</u>
Environmental Flow Costs				31,770
Total Capital Costs				<u>\$ 105,900</u>

- 5.10 The funding model below identifies the council contributions for the Environmental Flows and for the urban water supply. It identifies the funding sourced that Council intends using to meet its obligation to fund its investment in Waimea Water Ltd.
- 5.11 Council is gaining significant benefit from central government support for this project. That support includes:
- \$7m from the MfE Freshwater Improvement fund.
 - \$10m from CIIL by way of a 20 year zero interest advance.
- 5.12 Support from CIIL to WIL that will allow WIL to primarily service an \$8.75m Council shareholder advance to Waimea Water Ltd for the first 15 years.
- 5.13 In addition Council is receiving a Grant from Nelson City Council of \$5m which will offset the costs in the Urban Water account.
- 5.14 The Water Account and Environmental Internal loans are table loans for 30 years. They have been modelled on the current April 2033 fixed term borrowing rate for funding through the LGFA of 4.32%pa.
- 5.15 The other funding will come from Development contributions (\$2.4m) and upfront cash contribution from the Councils Enterprise activity (\$2.91m).

Waimea Community Dam – Funding**Capital Cost Allocation model**

Irrigation	51,791
Urban	22,339
Environmental Flow Costs	31,770
	105,900

Project Funding**Council Extractive Use**

Water Account Development Contributions	2,400
Funded Enterprise Activity (Forestry)	2,910
Water Account Loan	12,113
Water Account NCC Grant(part)	4,917
Total Extractive Use	22,339

Council Environmental Flow /Public Good

Part funded NCC	83
MfE FIF	7,000
Council /WWL Loan	8,750
CIL Environmental Loan	10,000
Environmental Loan	5,937
less Irrigator funding	- 411
	31,359

Irrigator funding

CIL Loan	23,500
WIL Capital Raising	28,702
	52,202

Total Capital Funding	105,900
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- 5.16 Council's Treasury advisors have confirmed that under Council's Treasury Policy, the additional funding to Waimea Water Limited of \$8.75m is not included for the purpose of the calculation of Council's self-imposed \$200m net debt cap.
- 5.17 In the project modelling for Council we have included an additional \$100k in annual operating costs for Waimea Water Ltd. This conservative approach has been taken as the operational costs will not be fully known before the company is operating normally post the completion of the project.
- 5.18 The Waimea Water Ltd estimated annual operating costs were reviewed and approved by the Project Governance Board prior to the updated WIL PDS being issued in October 2018. These cost estimates are outlined in the table below.

Waimea Community Dam - Estimated Operating Costs

(post dam completion)

Total Administrative Costs	101,000
Insurances - post-construction	
Directors & Officers Liability Insurance	20,000
Public Liability Insurance	100,000
Material Damage Insurance, lcl BIL	362,000
FENZ Levy and broker fees	31,150
Total Insurance Costs	513,150
Total Directors Fees	120,000
Repairs & Maintenance and Operations Costs	200,000
Staff Costs	75,500
Rates	230,000
Power	20,000
Consent Compliance costs	250,000
Total Operating Costs	<u>1,509,650</u>

- 5.19 Section 101(3) of the Local Government Act 2002 sets out the matters that Council must consider when funding an activity. Council completed an analysis of those matters for the allocation of our funding contribution to the Dam project in October 2017. From that analysis, Council agreed on a preferred funding model to include in the 2017 Waimea Community Dam Consultation Document – Statement of Proposal for Governance and Funding arrangements. That funding model was subsequently consulted on and adopted into our Long Term Plan 2018-2028.
- 5.20 In the proposal being considered by Council today, staff recommend retaining the adopted funding model contained in the Long Term Plan, whereby the project costs are apportioned across direct and indirect beneficiaries.
- 5.21 The extractive user contribution would be paid for through the Urban Water Club contributing \$14.5m (including \$2.4m in development contributions).
- 5.22 The Community and Environmental benefits share of the costs would be \$14.3m. WIL has also agreed to cover the loan services costs for \$8.75m of Council's debt in WWL for the first 15 years of the project. The District wide rate will rise to approximately \$29/rateable rating unit/year over the first few years of the project.
- 5.23 The Community and Environmental benefits are partly funded by a \$8.75m shareholder advance in Waimea Water Ltd (CCO). Servicing that loan becomes councils responsibility in 15 years time. The WIL servicing of that loan is capped at \$375,000 pa. That means that council is carrying interest rate risk above 3%, which represents the current 5 year fixed borrowing rate for council from the LGFA.

- 5.24 The \$8.75m shareholder advance represents loan funded council equity in the project. It would be prudent for council to build a specific reserve to wholly or partly repay the loan when council picks up servicing in 15 years time. Initial indications are that that can be accomplished within the current \$29pa (2017\$) rate and from the annual reduction in loan repayments on the CIIL \$10m as a result of it term being increased to 20 years.
- 5.25 The tables below sets out a comparison between the rates proposed in the October 2017 Consultation Document and current estimates. The revised rates are based on the final Zone of Benefit area and property values post the 2017 district wide valuation. Staff have increased the property values to reflect the district wide revaluation.

Typical Rates Inc GST				
			\$000s	
Total Project Capital Cost		\$	105,900	
Total Project Annual Operational Costs		\$	1,691	
Example Properties (Incl GST)	Property CV	Total Rates	CD Oct 2017	Annual increase
Richmond / Best Island	325,000	\$ 147	\$ 119	\$ 28
Richmond	975,000	\$ 173	\$ 147	\$ 26
Mapua	780,000	\$ 165	\$ 138	\$ 27
Brightwater/Hope	522,400	\$ 155	\$ 127	\$ 28
Kaiteriteri	n/a	\$ 134	\$ 105	\$ 29
Murchison, Wakefield, Pohara	n/a	\$ 134	\$ 105	\$ 29
Upper Moutere, Motueka and Takaka (excluding Upper Takaka)	n/a	\$ 29	\$ 29	-\$ 0

Breakdown of the proposed rates

<u>Typical annual Rates Inc GST Under the Proposed Funding Model</u>						
		\$000s			\$000s	
Total Project Capital Cost		\$ 105,900		less PGF Funding	-	
Total Project Annual Operational Costs		\$ 1,691				
						<u>Revised Proposal</u>
	<u>Property</u>	<u>Fixed Water</u>	<u>Vol Water</u>	<u>Fixed</u>	<u>ZOB</u>	<u>Annual</u>
Example Properties (Incl GST)	CV	Charge	Charge	Charge	Charge	Cost
Richmond / Best Island	325,000	42	63	29	13	\$ 147
Richmond	975,000	42	63	29	40	\$ 173
Mapua	780,000	42	63	29	32	\$ 165
Brightwater/Hope	522,400	42	63	29	21	\$ 155
Kaiteriteri	1,300,000	42	63	29	n/a	\$ 134
Murchison, Wakefield, Pohara	430,000	42	63	29	n/a	\$ 134
Upper Moutere, Motueka and Takaka (excluding Upper Takaka)	500,000	n/a	n/a	29	n/a	\$ 29

Costs to Date

5.26 Council loan funded costs to the end of October 2018 total \$7,753k. Of these costs \$6,032k is recoverable from the project CCO should it proceed. The breakdown of the costs are set out in the table below. The Council portion of these costs (\$1.72m) plus costs to financial close will be recovered through a 30 year loan. The servicing of this loan has been built into the rates examples above.

5.27 The forecast council costs for November and December are \$260k and \$145K respectively.

Waimea Project - Summary Financials

	Pre June						Project to Date
	14	14/15	15/16	16/17	17/18	YTD Oct 18	
Total Expenditure (excludes WIL WCDL Costs paid directly)	Actual	Actual	Actual	Actual	Actual	Actual	Actual
	\$000,s	\$000,s	\$000,s	\$000,s	\$000,s	\$000,s	\$000,s
Historic Costs	4,341	-	-	-	-	-	4,341
Project Management	59	285	69	308	486	171	1,378
Consenting	205	815	8	8	38	-	1,074
Procurement	-	557	86	125	1,886	2,015	4,669
Land and Access	-	102	288	273	1,409	36	2,108
Professional Support CCO Structure/Borrowing Agreement	-	54	27	234	295	29	639
Communications	-	17	-	18	1	-	36
Statutory Process	-	16	-	2	3	-	21
Hydro	-	-	-	-	85	17	102
Project Office	-	-	-	29	504	95	628
Interest	-	-	74	71	207	101	453
Total	4,605	1,846	552	1,068	4,914	2,464	15,449
The above is funded by;							
WIL 50%	-	-	-	65	1,246	915	2,226
TDC WCD BAU Loan	-	322	84	508	747	60	1,721
TDC WCD JV Loan	-	659	468	495	2,921	1,489	6,032
Historic Funding Sources	4,605	865	-	-	-	-	5,470
Total	4,605	1,846	552	1,068	4,914	2,464	15,449

6 Project risks and contingency

6.1 At its meeting 28 August 2018, Council considered a Report RCN18-08-1, which summarised the project and funding proposal. The Total Project Cost was estimated at \$102.171 million.

Risk and Contingency

6.2 The Early Contractor Involvement (ECI) process delivered significant certainty in the construction component of the project.

6.3 A Risk Register was developed early in the ECI process and consistently updated as risks were identified. Most of the risks were treated during the development of the construction methodology.

6.4 Each risk was allocated to the entity that could manage it most appropriately. Consequently there are risks allocated to Waimea Water and risks allocated to the contractor (Fulton Hogan Taylor Joint Venture - FHTJV). The FHTJV risks are primarily risks related to construction and are included in the construction price.

6.5 The risks and associated allowance that were and still are allocated to Waimea Water are outlined as follows;

- **Flood Risk** – a flood risk model was developed during the ECI process to estimate the likelihoods and related costs of flooding during construction. Flood insurance has been included to cover large flood events. The insurance has a deductible (excess) of \$200,000 per event. The allowance of \$1.670m covers the costs of repairing flood damage for events less than \$200,000. It also covers the cost of the deductible on larger events.
- **Shared Risks** – These are risks that have been identified as not being under the control of either entity but require both Waimea Water and FHTJV to cooperate in order to mitigate and manage them. An allowance of \$0.438m has been calculated to cover costs associated with the mitigation of these risks.
- **Measurable items** – These are items in the schedule in which the volume of work and associated quantities cannot be predicted with certainty. These are specifically beyond the control of the contractor. They primarily relate to geological features beside and under the Dam site within the river bed.

Construction Contract – Measure and Value Items

6.6 The construction contract comprises fixed price items and measure and value items. The fixed price items are not subject to variations in price nor quantity.

6.7 The unit rates within the measure and value items are fixed. The quantities are open to variation. The measure and value items and associated quantities cannot be predicted with certainty. These are specifically beyond the control of the contractor. They primarily relate to geological features beside and under the dam site within the river bed; slope protection, grouting, spillway rock foundation and spillway under drainage.

6.8 The quantities allowed for under the measure and value items in the priced contract amount to \$3.476m. The quantities and associated rates were derived from the site investigation knowledge acquired and the construction methodology adopted. The likelihood of the quantities being higher or lower than expected have been statistically

analysed and a risk allowance of \$456,000 has been calculated. This equates to around 13.1% of the value of the measurable items.

- 6.9 It should be noted that the quantities in the schedule may be conservative and the actual required quantities may be less than estimated. The contractor will only be paid for work done under the measurable items.

Waimea Water Risks

- 6.10 These are risks that have been identified as beyond the control of the contractor and therefore need to be allocated to Waimea Water Ltd. An allowance of \$3.892m has been calculated to cover costs associated with these risks.
- 6.11 The allowance has been derived from the risk register and an assessment of the likelihood and potential cost implication of each risk. In summary, the risk allocation breakdown of \$6.546m is as follows;
- Flood Risk \$1.670m
 - Shared Risks \$0.438m
 - Measurable Items \$0.456m
 - Waimea Water Risks \$3.982m
- Total \$6.546m**

- 6.12 The risks and associated allowances that have been allocated to FHTJV total \$1.500 million. These have been included in the construction price of \$66.314 million.

- 6.13 This risk allowance of \$6.546 million is for the 'known unknowns'.

Review of Risks

- 6.14 The risks to construction have been determined, mitigated, costed and statistically analysed. The have also been reviewed by Damwatch.
- 6.15 Damwatch specifically reviewed the risk components related to the Dam construction. It also reviewed the statistical analysis that was applied to estimate the value probability of the risks. The risks specifically reviewed were the risk that;
- a) The actual earthwork quantities differed substantially from scheduled quantities;
 - b) The permanent slopes require more stabilisation measures than scheduled;
 - c) The grout quantities are higher than anticipated;
 - d) The foundation level has to be undercut resulting in higher volumes of cut;
 - e) The plinth area has to be undercut resulting in higher volumes of cut;
 - f) The right abutment excavated rock slopes are less stable than assessed or that a large defect is identified;
 - g) The spillway excavated slopes are less stable than assessed or that a large defect is identified;
 - h) The plinth excavated slopes are less stable than assessed or that a large defect is identified;
 - i) More borrow rock material has to be mined because some of it was found to be not suitable for fill;

- j) The grout curtain does not going far enough into right abutment;
- k) The embankment materials are softer than anticipated;
- l) The drainage holes will be required through the shotcrete being applied to the right bank plinth excavation; and
- m) Underground springs are identified creating the need for additional drainage.

6.16 The outcomes of the Damwatch review largely confirmed alignment with the risk assessment undertaken during the ECI process. Some of the measurable risks were considered higher than what was assessed during the ECI process. However the overall impact of this was that it was within 5% of the \$6.546 million scheduled for risk allowance.

Contingency

6.17 Determining an appropriate contingency has involved an assessment of each of the critical aspects of the project. The following points outline the context in determining a contingency amount:

- 6.17.1 The construction price has been developed on a substantially completed detailed design.
- 6.17.2 The construction methodology determined during the ECI process has been carefully planned to a high level of detail by an appropriately experienced team. The construction methodology has been robustly costed.
- 6.17.3 The \$66.314m construction price includes \$57.238m of fixed price items. The remaining \$9.076 comprises a Prime Cost (PC) sum of \$5.6m for Mechanical and Electrical (M&E) and \$3.476m for measure and value items.
- 6.17.4 The M&E component of the work is not scheduled to be constructed until at least 2 years into the construction programme. The timing of this work and the associated uncertainty in the current market has meant that the contractor has not managed to obtain a fixed price for the M&E work. At this stage it remains in the contract as a PC sum of \$5.6 million. Waimea Water will work with the contractor and the designer to ensure that the M&E costs are contained within the PC sum of \$5.6 million.
- 6.17.5 Costs associated with land acquisition work stream is largely complete. Costs have either been incurred or have already been determined.

Project Management and Delivery

6.18 The project will be governed by a Board of 7 Directors as outlined in the agreements with the shareholders. The 7 Directors comprise the following appointments:

- Four Directors appointed by the Tasman District Council (current Council Directors are Karen Jordan, Ken Smales and Doug Hattersley). A recommendation for the fourth Director will be presented to Council at its meeting on 30 November 2018. In future, depending on the type of involvement by Nelson City Council, it is possible that in the future one of these Directors would be a joint appointment between Tasman District and Nelson City Councils;
- Directors appointed by Waimea Irrigators Ltd (Current appointments are Julian Raine and Bruno Simpson);

- Director appointed by iwi – Currently being advertised with an appointment likely to be late 2018 or early 2019.
- 6.19 The nominee Directors have the appropriate experience as professional directors and have a combination of commercial, technical and governance experience to oversee the construction phase of the project. The Board of Directors will take over the project prior to the construction phase commencing.
- 6.20 There will be a Chief Executive Officer/Project Director that will report directly to the Board of Directors. The Board of Directors will determine the skills and experience required within the company's project office.
- 6.21 At this stage the nominee directors have indicated the following roles will be required (either full or part time);
- Chief Executive/Project Director
 - Chief Financial Officer/Company Secretary
 - Health and Safety Manager
 - Accounts Administrator
 - Construction Manager
 - Executive Assistant
 - Risk and Schedule Manager
 - Environmental Compliance Manager
 - PR and Communications Officer
- 6.22 In addition the Project Office will engage and manage the following specialist expertise;
- Engineer to the Contract
 - Engineer's Representative
 - Structural Engineer
 - Geotechnical Engineer
 - Construction Manager (Fulton Hogan Taylor Joint Venture)
 - Design Manager (Fulton Hogan Taylor Joint Venture)
 - Safety Manager (Fulton Hogan Taylor Joint Venture)
- 6.23 The Fulton Hogan Taylor Joint Venture will also have other skilled staff on site undertaking the physical works.
- 6.24 The Governance and Management Structure is intended to manage the risks and the delivery of the project. It is essential that there are sufficient experience in the team to ensure that the project is delivered to meet its intended objectives and to manage the risks associated with that delivery.

7 Land and Access

- 7.1 Private land required to construct the Dam is now owned by the Council. Land which will be inundated is either owned by the Council or inundation easements have been or are being secured. We await passage of the Tasman District Council (Waimea Water Augmentation Scheme) Bill which has been favourably reported back from the Select Committee.
- 7.2 At the time of writing the agreements with Ngati Koata and Tasman Pine Forests were being finalized. The partnering arrangements will remain with Council while the easements and some obligations will be transferred to Waimea Water Ltd.
- 7.3 In addition some residual monetary compensation matters are also being finalised. The finalisation of compensation does not impact on the availability of the land for the project or the commencement of construction of the dam.
- 7.4 As soon as practicable following a decision to proceed Council will be transferring the land and easements to Waimea Water Ltd.

8 Resource Management Act Compliance

- 8.1 The Council has in place the necessary water management provisions that will support implementation of the augmentation regime which the Dam will make possible. Nothing further is required except we still have to issue the renewed permits to water users on the Waimea Plains in accordance with the new TRMP provisions and this will occur in the New Year.
- 8.2 The construction and operation of the Dam received the necessary resource consents in July 2015. A number of the consent conditions require the consent holder to demonstrate compliance prior to construction commencing. There are no issues and condition 19B and 19C which required the successful re-establishment of the rare and endangered plant species, Scoutillaria or New Zealand shovel mint, 18 months prior to construction commencing, has been satisfied.
- 8.3 A Biodiversity Management Plan has been developed and continues to be refined with the assistance of the Biodiversity Technical Advisory Group. A Vegetation Clearance Plan has been prepared and has been used in pricing the works. We can confirm that the inundation zone will be cleared of vegetation so that the effect of decomposing vegetation on water quality is reduced.
- 8.4 The Resource Consent Determination 26 February 2015, Appendix D includes conditions related to vegetation clearance as follows;
 - 8.4.1 Condition 42 states that the consent holder shall prepare a Vegetation Clearance Plan (VCP) that meets 10 listed objectives and performance standards.
 - 8.4.2 Condition 43 states that the Consent Holder shall comply with the certified Vegetation Clearance Plan at all times.
 - 8.4.3 Condition 89 states that the Consent Holder shall ensure that, prior to the first filling of the reservoir, the footprint of the reservoir is cleared of vegetation, or the potential for vegetation to adversely impact on water quality is otherwise reduced, to the extent possible, to assist with managing reservoir water quality. (*Advice note: Vegetation clearance needs to be carried out in accordance with the VCP required by Condition 42*).

- 8.5 The Fulton Hogan Taylor Joint Venture has the flexibility to develop its own vegetation clearance methodology to clear and dispose of the vegetation provided it complies with the certified VCP.
- 8.6 The vegetation clearance methodology was developed and finalised by Fulton Hogan Taylor Joint Venture during the ECI phase and is discussed below.
- 8.7 The mature pines are to be logged by a logging contactor and sold where appropriate. The remaining vegetation will raked down the hill by excavator and mulched. The mulching will either be undertaken by a mobile mulcher or the vegetation will be carted to a mulching site. Stumps will be removed within the dam and spillway construction footprint. Where the terrain is steep the vegetation raking will be winch assisted.
- 8.8 The medium size pines and scrub will be cut down by mechanical felling or manual felling depending on the terrain. It will be cleared off the hill by shovel logging/slash raking to where it can be put through the mobile mulcher or loaded and carted to the mulcher site. In steep terrain the shovel logging/slash raking will be winch assisted. In steeper terrain a winch logging operation will clear the hill.
- 8.9 Small pines and scrub will be mulched by an excavator and/or a tractor fitted with mulching attachments. The mulched material will be left on the ground to decompose. These areas will need to be mulched twice about 12-18mths after first mulch to further break down the vegetation and enhance decomposition. In steep terrain the excavator mulching will be winch assisted. Where the ground conditions are too rocky for excavator and tractor mulchers they will need to be raked and mulched by the mobile mulcher.
- 8.10 In the areas where there are steep terrain and bluffs, the vegetation will be felled by a rope access manual felling team.
- 8.11 The same methodology as outlined above will be used for native vegetation areas. Any mature native logs will be stockpiled and offered to iwi/landowners depending on where they come from.
- 8.12 The Douglas fir trees will be logged by Tasman Pine. The clearing of vegetation off the hill and at the landing will be raked up and mulched.
- 8.13 The mulching will be done by a 950hp Horizontal Grinder. The grinder is mobile and can either be taken to the work site and vegetation fed directly or it can be fixed in an appropriate location and the vegetation brought to it.
- 8.14 The mulch will be spread by a large wheel tractor and mulch spreader with side conveyer. Mulch will be spread within appropriate areas of the reservoir footprint and on adjacent landowner forests. The landowners have indicated they would like to benefit from the mulch compost. Mulch will also be used to stabilise exposed areas as appropriate.
- 8.15 The vegetation clearance has been scoped, assessed and priced by Fulton Hogan Taylor Joint Venture. The fixed price for vegetation clearance is \$2,435,265 (plus GST).

9 Other Matters

- 9.1 The Council has asked that staff address some other matters or other matters have emerged and are covered in this section.

Three Waters Review - Central Government Intentions (November 2018)

- 9.2 The Government is reviewing how to improve the regulation and supply arrangements of drinking water, wastewater and stormwater (three waters) to better support New Zealand's prosperity, health, safety and environment. Most three waters assets and services are owned and delivered by local councils.
- 9.3 The Government has announced (November 2018) work to overhaul three waters regulation as part of the Three Waters Review. This is part of an ongoing reform programme to transform drinking water, wastewater and stormwater. The programme is focused on collaborating with the local government sector, the water sector and other stakeholders to meet the three-waters challenges facing it. These include funding pressures, rising environmental standards, climate change, seasonal pressure from tourism, and the recommendations of the Havelock North Inquiry.
- 9.4 Whilst there are many potential options and geographical configurations for three waters service delivery arrangements, the following high level options appear to provide the best fit for New Zealand context and will be the subject of further analysis and engagement.
- 9.4.1 Proceed with regulatory reform only, with voluntary, sector-led reforms to service delivery arrangements.
- 9.4.2 Establish three waters fund to support voluntary service delivery improvements.
- 9.4.3 Create an aggregated system of dedicated, publicly owned drinking water and wastewater providers.
- 9.5 In late 2019, Cabinet will be considering proposals to improve oversight and stewardship across the three waters system. These proposals will take account of decisions on service delivery arrangements and economic regulation, as well as previous decisions on oversight and stewardship to support drinking water and environmental regulation.

Potential Impacts of the Review on Council's Three Waters Activities

- 9.6 Council currently owns and operates water supplies, wastewater schemes and stormwater systems. Although the Waimea Community Dam delivers environmental, economic and drinking water supply benefits, the infrastructure that comprises the Dam would not be considered part of Council's water supply infrastructure. It delivers water to maintain flows in the river and to maintain water levels within the aquifers.
- 9.7 The bores that draw water from the aquifers for Council's water supply are included as part of Council's water supply infrastructure. The aquifers would not be included, neither would the rivers be included and neither would the Dam be included.
- 9.8 Therefore, it is safe to conclude that the status of the Dam is unlikely to be affected by any outcomes of the Government's Three Waters Review.
- 9.9 Under the current funding proposal for the Dam, the urban water supply account is funding a portion of the Dam capital and ongoing operating and maintenance costs. It is envisaged that

any aggregation of the water supplies would see this funding continue from any aggregated entity.

Upgrading Water Supplies to meet Drinking Water standards

9.10 Council's Long Term Plan 2018-2028 includes approximately \$21 million over the next 7 years to upgrade its water supplies to meet the current drinking water standards. The following table summarises the budgets for each of the water supply schemes and the years programmed to complete them.

9.11 The Richmond Water Supply does not need a budget as it currently has the necessary infrastructure to comply with the current drinking water standards.

Table outlining Long Term Plan Budgets - Water Supply Upgrades to Meet Drinking Water Standards								
Water Supply	LTP Total	LTP 2018/19	LTP 2019/20	LTP 2020/21	LTP 2021/22	LTP 2022/23	LTP 2023/24	LTP 2024/25
88 Valley	1,820,500	0	0	0	200,000	1,620,500	0	0
Brightwater	1,458,300	0	65,000	1,393,300	0	0	0	0
Collingwood	1,064,500	160,000	40,000	864,500	0	0	0	0
Dovedale	3,275,200	90,000	20,000	50,000	0	80,000	1,110,000	1,925,200
Motueka	2,663,600	965,000	951,000	747,600	0	0	0	0
Murchison	340,000	0	0	0	40,000	300,000	0	0
Pohara	409,800	0	40,000	369,800	0	0	0	0
Redwood Valley	1,335,200	0	0	50,000	1,285,200	0	0	0
Waimea	1,742,800	65,000	65,000	1,612,800	0	0	0	0
Tapawera	755,200	0	0	0	0	0	45,000	710,200
Wakefield	6,300,000	3,300,000	3,000,000	0	0	0	0	0
Total	21,165,100	4,580,000	4,181,000	5,088,000	1,525,200	2,000,500	1,155,000	2,635,400

Riverside Pond Alternatives – Treatment

9.12 The Riverside Pond Alternatives were included as part of the urban water augmentation alternatives previously considered by Council. Two of the four Riverside Pond Alternatives were detailed in 28 August 2018 report considered by Council.

9.13 All four of the Riverside Pond Alternatives included allowances for water treatment along with reticulation from the pond to the current Richmond Water Treatment Plant.

9.14 The water stored in the ponds would be exposed to contamination from numerous sources and potentially generate algae if climatic conditions were conducive. Therefore, the water drawn from the ponds would need a greater level of treatment than water drawn from the bores.

9.15 Membrane treatment would provide the necessary treatment and has been priced in all riverside pond alternatives. The control of algae has also been included in the estimates.

9.16 The quality of the bore water is currently good enough that neither of these types of treatment are necessary. Any future contamination and/or degradation of the aquifers could alter treatment requirements.

9.17 The location and configuration of the riverside pond treatment is entirely dependent on the location of the ponds. Closer to the current Richmond Water Treatment Plant treatment could result in building the new treatment plant as an 'add-on' to the current plant. Further away it may be more cost-effective to have a standalone plant and distribute the treated water into other parts of the reticulation and not necessarily via the current water treatment plant.

- 9.18 The costs of locating the treatment as an 'add-on' to the current treatment plant may be slightly cheaper than at a separate location, however not likely to be a significant difference.
- 9.19 There is no further funding allocated in the Long Term Plan 2018-2028 to upgrade the Richmond Water Treatment Plant to comply with the current drinking water standards. Unless funding is directed from other water supply upgrades, there is no funding that could be re-allocated to any Riverside Pond Alternative.

Earthquake Risk Issues

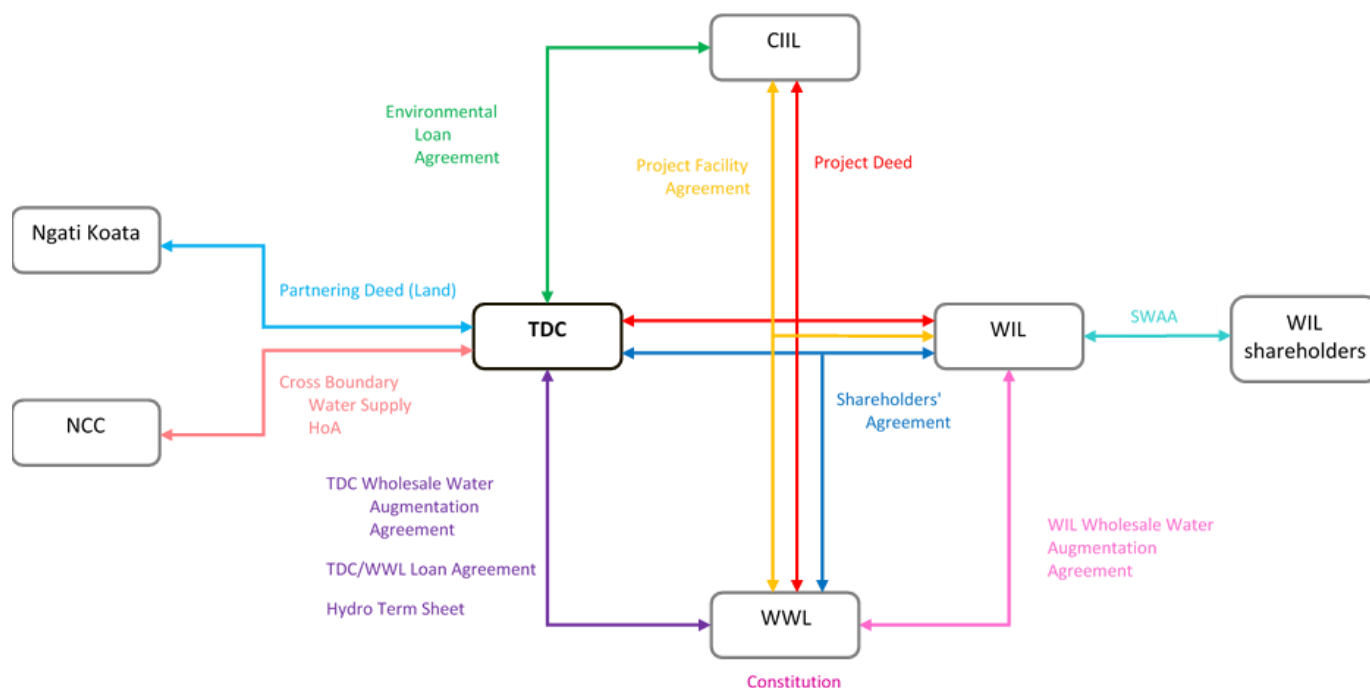
- 9.20 Councillors have received previous briefings on the earthquake risk associated with construction in the upper Lee Valley. Recent commentary circulating in Brightwater has asserted that in the event of a catastrophic failure, Brightwater will face an eight meter high wall of water. This was scaremongering and misleading. In the event of a catastrophic failure, the dam could release water which at the Brightwater Bridge would be about 4 m above the bed of the river and the overspill into some parts of Brightwater could be up to 50 – 100 cm deep. However, the dam has been designed to withstand a maximum credible earthquake. It may crack and leak, but its design means there is a very low risk of catastrophic failure. If the region were to suffer a magnitude 10 earthquake, the overall impacts on the region would be catastrophic for reasons other than a potential Dam breach.

10 Project Agreements

- 10.1 This is a unique project for Council, as it involves four specific but interrelated aspects:
- 10.1.1 public money and private investment jointly fund this critical infrastructure; and
 - 10.1.2 the project has funding on private sector terms (albeit at concessionary interest rates); and
 - 10.1.3 it's a very long term project with corresponding long term arrangements, so the rights and obligations have a clear element that is forward looking in nature; and
 - 10.1.4 Council has regulatory powers that can prevail over contractual rights and obligations, but in fairness to other parties these need to be managed.
- 10.2 As a result of the nature of this project there are a number of matters that are reflected in the agreements and arrangements:
- 10.2.1 Council and WIL are reliant on acceptable borrowing terms proposed by CIIL; and
 - 10.2.2 CIIL, as the primary lender to the project, takes a high degree of interest in any matter that could impact on the ability of WWL/WIL to repay the CIIL loan. This means that CIIL, as the lender, has a high degree of influence over what the borrower can or cannot do (which is customary for loans of this nature); and
 - 10.2.3 all parties want as much certainty as possible. However, in a major project like this, it is very difficult to consider and agree all eventualities at the start of the project. Therefore, processes are in place to address issues as they arise; and
 - 10.2.4 the other parties are concerned that Council has powers to take actions under its regulatory functions that would otherwise prevail over the contracts negotiated in good faith between the parties.
- 10.3 Most documents are in their final form but a few have minor drafting matters to be finalised by the legal advisors before execution by the relevant parties.

- 10.4 The Documents fall broadly into four categories:
- 10.4.1 **The Equity Documents** – These set out Council’s and Waimea Irrigator Limited’s participation as shareholders in the Waimea Water Ltd joint venture company. These consist of:
 - 10.4.1.1 The Waimea Water Ltd - Constitution
 - 10.4.1.2 The Shareholders Agreement - Waimea Water Ltd
 - 10.4.1.3 The Wholesale Water Augmentation Agreement - Council
 - 10.4.1.4 Wholesale Water Augmentation Agreement - Waimea Irrigators Ltd
 - 10.4.2 **The Finance Documents** – These provide for lending between various parties, and consist of:
 - 10.4.2.1 Facility Agreement (Waimea Community Dam - Environmental Term Loan).
 - 10.4.2.2 Project Facility Agreement (Waimea Community Dam)
 - 10.4.2.3 TDC/WWL Shareholder Loan Agreement
 - 10.4.2.4 The various standard security documents
 - 10.4.3 **The “Bridging” Document** – This binds all parties into the project (Council, WWL, WIL and CIIL) :
 - 10.4.3.1 The Project Deed - Waimea Community Dam
 - 10.4.4 **The Miscellaneous Documents** – these are required to support the overall project and consist of:
 - 10.4.4.1 The Hydro Power Term Sheet - Waimea Water Ltd
 - 10.4.4.2 The Ngati Koata Land and Water Use Partnering
 - 10.4.4.3 Shareholder Water Augmentation Agreement – WIL
- 10.5 In addition to the documents above, there are agreements between other parties relating to the overall joint venture to which Council is not a signatory.
- 10.6 The documents and agreements that are required by the proposal have been provided to Council in the confidential report RCN18-11-17 to the in committee session of the 30 November 2018 Full Council meeting and are summarised in Attachment 2 to this report.
- 10.7 Below is a structure diagram for the agreements. This shows how they relate.

Structure Diagram



11 Options

11.1 Council has the following options to consider:

11.1.1 Option 1: Proceed with the Waimea Community Dam proposal and funding arrangements for Council's share of the project costs outlined in this report; or

11.1.2 Option 2: Decide, in principle, not to proceed with the Waimea Community Dam proposal and funding arrangements as outlined in this report; to commence further work towards identifying alternative options to the Dam (and their any associated funding arrangement), which will provide a secure community water supply and meet our regional council obligations; and commence a process to amend the Long Term Plan to reflect the fact that the Waimea Dam is no longer the Council's preferred water augmentation solution for the Waimea Plains.

11.2 **Option 1: Proceed with the Waimea Community Dam proposal and funding arrangements for Council's share of the project costs outlined in this report** – The advantages of option one are that, having extensively evaluated other alternatives, this option would have the least cost to Council and ratepayers, as a solution to the long term Waimea Plains water supply needs, and for enhancing the health and environmental values in the Waimea River. It would be the easiest option to achieve, given the Dam project is well scoped, consented and Council has a firm tender price for bulk of the Dam construction costs. The proposal is also consistent with specialist and professional advice received from staff and consultants. This Dam proposal:

11.2.1 enables Council to provide cost effective and secure urban water supply to current and future households and businesses on the Waimea Plains at the earliest time; and

- 11.2.2 achieves wider benefits to the region, including to irrigators and public good and community well-being outcomes, such as improving the health of the Waimea River, cultural benefits, recreational opportunities, employment opportunities, opportunities for ongoing growth, etc; and
- 11.2.3 is consistent with proposals Council has previously formally consulted the public on and has heard ongoing informal community views on, giving it a good understanding of the views and preferences of the Tasman community; and
- 11.2.4 provides a collaborative solution with another council, iwi, government agencies and irrigators, which results in a financially prudent outcome for the community; and
- 11.2.5 provides an opportunity for sustainable hydroelectricity generation.
- 11.3 The main disadvantages of this option are the costs associated with the proposal and the wide-ranging public views on it making it a controversial matter. Whichever option Council chooses will be unpopular with some members of the community. The costs are above what Council has provided for in its Long Term Plan 2018-2028. However, the rating impact is similar to what was consulted on in 2017 and in the Long Term Plan 2018-2028, meaning that the ratepayers will generally not see a difference to what was consulted on. Other capital projects may need to be adjusted in the short term in order for Council to keep within its debt and rates limits. A further disadvantage, is that despite strong mitigation of construction risks, as with any major infrastructure capital project, there is a risk of unforeseen issues which may lead to additional costs. However, the project does contain an \$8.5 million risk and contingency, which is considered adequate by professional advisors.
- 11.4 **Option 1** is the recommended option.
- 11.5 **Option 2: Decide, in principle, not to proceed with the Waimea Community Dam proposal and funding arrangements as outlined in this report; to commence further work towards identifying alternative options to the Dam (and their any associated funding arrangement), which will provide a secure community water supply and meet our regional council obligations; and commence a process to amend the Long Term Plan to reflect the fact that the Waimea Dam is no longer the Council's preferred water augmentation solution for the Waimea Plains** – The advantages of this option are it will defer the cost of the Dam construction in the short term. However, sunk costs will need to be met. Some members of the community who have vocally opposed the Dam will be happy with a decision which effectively ends the project.
- 11.6 The disadvantages of option 2 are outlined in the following paragraphs. The discussion on significance and engagement in section 9 of this report is of particular relevance to this option and should be read in conjunction with it.
- 11.7 The reason why Council can only make an “in principle” decision at this stage, is that a decision not to proceed with the Dam proposal would require a Long Term Plan amendment, as it would be a decision to significantly alter the intended level of service provision for a significant activity (being water supply). Therefore, a disadvantage of this option is the cost associated, time and effort with reviewing Council's growth strategy, activity management plans and the Long Term Plan 2018-2028. Any Long Term Plan amendment will require auditing and consultation through a special consultative procedure.
- 11.8 If Council was to make an in principle decision not to proceed with the Dam, the no dam provisions of the Tasman Resource Management Plan will be implemented and a

combination of alternative water solutions for present and anticipated future circumstances, must be found for:

- urban demand (residential, low flow residential, and commercial uses); and
- industry needs.

- 11.9 We will need to scope, investigate, design and obtain necessary consents and land, and consult on any alternative solution with the public. Any alternative is likely to take several years to develop to the stage of being implementable, assuming there is an affordable alternative to the current Dam proposal. Any alternatives investigated to date will likely only address the short-term urban water needs.
- 11.10 Council and ratepayers will need to fully fund any alternative. Any alternative proposal will lose all the external investment from Crown Irrigation Investments Limited, Ministry for the Environment Freshwater Improvement Fund, Nelson City Council and irrigators. The funding and concessional loans at risk totals approximately \$83 million.
- 11.11 Until we have identified and implemented an alternative water solution, the Waimea River will continue to have compromised health.
- 11.12 The Tasman Resource Management Plan rules under a no dam scenario, will come into effect. These rules will bring in greater controls on water use for all users and will mean restrictions on new residential, industrial and business development until we identify and commission any alternative community supply solutions. This will take time.
- 11.13 Under the Tasman Resource Management Plan rules, Stage 3 rationing could occur nine out of every ten years (based on the last 16 years of data). This level of rationing would require the greater of a 25% reduction in urban water consumption and a 50% reduction in water for the other consented takes. Stage 5 rationing, which could occur one in every five years based on last 16 years of data, allows for water takes of only 125 litres per day, per person for essential human health, and a cease take for rural permit holders.
- 11.14 Council's new water supply bylaw will apply restrictions to manage water demand. It will require enforcement and compliance action by Council, which will add additional cost to Council, and frustration and dissatisfaction to urban water users who are subject to enforcement action, fines and prosecution. The level of restrictions required is likely to cause significant disruptions to our community and to many businesses connected to Council's urban water supply.
- 11.15 There will be less water available for irrigation in droughts and a reduced security of supply for businesses who rely on water. This will negatively impact business investment and some businesses have already indicated that they may close down or relocate out of the District. Some businesses have indicated that they will not be able to operate, which will have impacts on their employees and the contracts they have with other providers and suppliers and on their customers.
- 11.16 Any attempt to amend the Tasman Resource Management Plan to enable more water abstraction from the Waimea River or aquifers, or to change the rules to give priority to urban water, is likely to be opposed, with the potential for even greater restrictions being imposed due to higher environmental flows and earlier triggers for cease takes. Council does not have an unfettered power to change the Tasman Resource Management Plan.
- 11.17 There will be a substantial financial and economic loss to the Nelson-Tasman region if the Dam does not proceed, as demonstrated in previous reports to Council.

- 11.18 The loan funded investment in the project to date will need to be repaid or be written off, including:
- 11.18.1 Approximately \$2.5m of council unrecoverable costs and \$6m of Joint Venture eligible project costs which were to be refunded by the joint venture and need to be loan funded over 5 years and rated for;
 - 11.18.2 The investment made to date by the multiple parties involved circa \$15.5m becomes a stranded investment.
- 11.19 A decision not to proceed with the Dam would also result in the lost opportunity for hydroelectricity generation.

12 Strategy and Risks

- 12.1 Providing a safe and secure urban water supply is a key activity for Council. The Waimea Dam proposal is designed to enable Council to achieve a safe and secure water supply to the residents and businesses on the Waimea Plains, while also achieving a range of public good benefits, including economic, environmental, social, recreational and cultural benefits.
- 12.2 There are a range of risks associated with the project should it proceed, including construction risks, funding risks, reputational risks for Council, among others. A full discussion on risk is outlined sections 6 and 17 of the 28 August 2018 report attached.
- 12.3 There are also risks should the project not proceed including economic risks to the Nelson-Tasman region, loss of employment opportunities, lost growth and development opportunities, constraints on growth, lost opportunities to improve the health of the Waimea River and reputation risks. Council has received information on these matters in various reports over recent years.

13 Policy / Legal Requirements / Plan

- 13.1 Councillors are reminded that your statutory declaration on taking office is to act in the best interest of the Tasman District **as a whole** (and not only the interests of your particular ward or community).
- 13.2 You are reminded that the Code of Conduct articulates general principles of good governance, which should be at the forefront of your mind in making this key decision. These principles dictate that you must:
- 13.2.1 act with impartiality, making your decision based on merit, and with the best interest of the District in mind; and
 - 13.2.2 act with openness, accountability, honesty and integrity; and
 - 13.2.3 exercise personal judgment, taking into account the views of others but reaching your own conclusions on the issues before you; and
 - 13.2.4 ensure that Council maintains sufficient resources to meet its statutory obligations, whilst using resources prudently and for lawful purposes; and
 - 13.2.5 respect the impartiality and integrity of Council staff;
 - 13.2.6 promote and support the above principles by example and demonstrate leadership in always endeavouring to act in the best interests of the community.

Conflicts of Interest/Predetermination

- 13.3 Councillors are reminded that they must be careful to maintain a clear separation between their personal interests and their duties as a member of the Council, so as to ensure decisions are made free from bias (whether real or perceived).
- 13.4 Councillors should remain mindful of (and satisfied of their compliance with) the statutory and common-law principles relating to conflicts (both pecuniary and non-pecuniary). A thorough summary of the general legal framework with respect to Conflicts of Interest has previously been articulated in detail to the Councillors in the presentation by Jonathan Salter and James Winchester of Simpson Grierson on 24 October 2017 and was reiterated by Jonathan Salter on 1 February 2018. If you would like further copies of the handout from that training session in advance of the 30 November 2018 meeting, please advise Council staff.
- 13.5 The Waimea Community Dam proposal is contentious within the community, with some members of the public holding strongly opposing and supporting views. Councillors have taken positions in previous decisions. This in itself does not de-bar them from participating in today's decision. Your obligation is to remain open to the debate and to fairly consider all the matters before you. However, all Councillors, should consider whether their previous statements and conduct about the Waimea Community Dam proposal indicate that they have predetermined forthcoming Council decisions about the proposal.
- 13.6 Councillors are referred to Standing Order 19.7 (Financial Conflicts of Interest) and 19.8 (Non-financial Conflicts of Interest) for the relevant rules for the conduct of the meeting on 30 November 2018. For the avoidance of doubt, where a Councillor decides that they have a conflict of interest, they must:
- 13.6.1 Declare that they have a conflict of interest when the matter comes up at the meeting;
 - 13.6.2 Refrain from discussing or voting on the matter;
 - 13.6.3 Leave the table when the matter is considered (and note where there is a financial conflict, they may also need to leave the room); and
 - 13.6.4 Ensure that their declaration and abstention is recorded in the minutes.

Local Government Act 2002 (LGA) Decision Making Requirements

- 13.7 The key provisions of the LGA relating to Council decision making are set out in s.76 to 82 of the LGA. The following is a summary of the key legislation and the steps taken by Council to ensure compliance with these provisions. Council is directed to <http://www.legislation.govt.nz/> should you wish to review the full provisions of the legislation.
- 13.8 In complying with the decision making provisions in the LGA, Council must have regard to, amongst others, the following statutory provisions:
- 13.8.1 **Section 10**, states (our emphasis) that the purpose of local government, includes meeting “*the **current and future** needs of communities for **good-quality local infrastructure**, local public services, and performance of regulatory functions in a way that is **most cost-effective for households and businesses.**” Funding and concessional loans in the order of \$83 million from external sources helps make this Dam proposal cost effective for households and businesses, and is an efficient and effective method of safeguarding both current and future water use for the region.*

- 13.8.2 **Section 11A** states that in performing its role, a local authority **must** have particular regard to the contribution that various core services make to its communities, and one of those core services is network infrastructure, such as water supply.
- 13.8.3 **Section 14** principles are the key principles which a local authority must act in accordance with, and these include:
- 13.8.3.1 Conducting itself in an open, transparent and democratically accountable manner; and
 - 13.8.3.2 Giving effect to identified priorities and desired outcomes in an efficient and effective manner; and
 - 13.8.3.3 Making itself aware of, and having regard to the views of all communities;
 - 13.8.3.4 When making a decision a council should take into account the diversity of the community (and the community's interest) as well as the interests of future as well as current communities and the likely impacts of the decision on these interests; and
 - 13.8.3.5 Providing opportunities for Maori to contribute to its decision making processes; and
 - 13.8.3.6 Actively seeking to collaborate and cooperate with other councils and bodies to improve the effectiveness and efficiency with which it serves its identified priorities and desired outcomes; and
 - 13.8.3.7 A council should undertake any commercial transactions in accordance with sound business practices; and
 - 13.8.3.8 Ensure prudent stewardship of a council's resources and effective use of its resources in the interests of its district or region, including by planning effectively for the future management of assets; and
 - 13.8.3.9 In taking a sustainable development approach, a council should take into account the social, economic, and cultural interests of people and communities, the need to maintain and enhance the quality of the environment, and the reasonably foreseeable needs of future generations.
- 13.9 **Section 77**, requires a council as part of the decision making process, to seek to, amongst other things, identify all reasonably practicable options for the achievement of the objective of a decision; and assess the options in terms of their advantages and disadvantages.
- 13.10 **Section 78**, states that a council must, in the course of its decision-making, give consideration to the views and preferences of persons likely to be affected by, or have an interest in, the matter. Although please note that this section alone does not require a council to undertake any consultation process or procedure, and should be considered in conjunction with other relevant sections of the legislation relating to consultation.
- 13.11 **Section 79**, states that it is a council's responsibility to use its discretion and make judgments on the extent to which the nature of a decision, or the circumstances in which a decision is taken, allow the council scope and opportunity to consider a range of options or the views and preferences of other persons.
- 13.12 **Section 82** outlines the general principles of consultation. It states that a council must, in exercising its discretion on consultation, have regard to the extent to which the current views

and preferences of persons who will or may be affected by, or have an interest in, the decision or matter are known to the council.

- 13.13 **Section 101(1)** requires the Council to manage its general financial dealings prudently and in a manner that promotes the current and future interests of the community.
- 13.14 **Section 130** of the Act outlines a council's obligation to maintain water services to its community and states that a council must continue to provide water services and maintain its capacity to meet its obligations. Water services are the only activity provided by councils where these types of provisions apply, which indicates the level of importance Parliament puts on councils being able to meet their communities water services needs.
- 13.15 Council has taken (and continues to take) all the requisite steps to ensure compliance with its decision making obligations in this long standing and detailed project. The decisions Council is being asked to make today are final determinative decisions in a sequence of related earlier decisions leading to this point. Over the years, Council has consistently demonstrated compliance with its statutory decision making obligations.

Consideration and Assessment of Alternate Options

- 13.16 Council has considered alternative options to the Waimea Community Dam since 2004, and has exhaustively assessed the relative merits of each of these options. Council is referred to the summary at paragraphs 4.16 to 4.39 in RCN18-08-01 (28 August 2018) to recap this extensive portfolio of work.

Consideration to views and preferences of persons likely affected

- 13.17 Council has heard the community's views on the current Dam proposal through public forums, Community Board and Community Association meetings, social media, email and letter correspondence, public meetings, social gatherings, and various other forums.
- 13.18 Council has also engaged in a great deal of formal consultation over the years on various water augmentation options for the Waimea Plains, including different Waimea Dam funding and governance proposals. Council has consulted on these proposal and specific options have been included in Council's Long Term Plans since at least 2006. Council has also undertaken specific consultation on a funding and governance proposal for the Dam in 2014, which resulted in rejection of that proposal. Subsequently, in its Long Term Plan 2015-2025, Council allocated \$25 million towards construction of a dam in the Lee Valley.
- 13.19 In October/November 2017, Council consulted on a new funding and governance proposal for the Waimea Dam. There were 1513 submissions to the proposal. While some of the comments in the submissions were out of scope of the proposal being consulted on, Council did read all submissions and hear from submitters who were opposed to and supporting the Dam, on grounds other than funding and governance. Therefore, Council did get an understanding of the wider views and preferences of the public as a result of the consultation process. Following deliberation on the submissions, Council made changes to some aspects of the proposal. Council decided to proceed with that funding and governance proposal, which it included in and consulted on through the current Long Term Plan 2018-2028.
- 13.20 Council adopted its Long Term Plan 2018-2028 on the 28 June 2018. During the Long Term Plan process Council received 122 submissions on the Waimea Dam proposal. Following consideration of those submissions, it confirmed the funding and governance for the Dam proposal in the Plan.

- 13.21 The current Dam proposal's funding and governance are consistent with and based on the proposal contained in the Long Term Plan 2018-2028. While it is true that the overall costs are above what Council had provided for in its Long Term Plan 2018-2028, the rating impact on the ratepayers is very similar to what was consulted on in 2017 and in the Long Term Plan 2018-2028.
- 13.22 There are details of the Dam proposal contained in the term sheets, which have been the subject of ongoing negotiations throughout November and are commercially sensitive. Therefore, these term sheets are confidential and contain information that is not in the public arena and has not been consulted on. These matters need to remain confidential. Given the extensive public engagement and consultation Council has had on the Dam proposal, it is likely to have a good understanding of what the community's views and preferences would be on those matters were they in the public arena.
- 13.23 Council's obligations are to have an understanding of the community's views and preferences prior to making major decisions. Given the extensive community engagement on the Dam undertaken over the years, both formal consultation and informal, Councillors will be well aware of the community's views and preferences on the Dam proposal.
- 13.24 On that basis, Council is not obligated to carry out further consultation in order to make a final decision on the Waimea Community Dam and may use its discretion and judgment to rely on its already extensive understanding of the views and preferences of those likely to be affected by this decision. In doing so, Council will have regard to:
- 13.24.1 the s.14 principles set out at paragraph 13.8.3 above, the significance of the decision and the extent of Council's resources; and
- 13.24.2 the circumstances in which this decision is taken, and specifically the critical deadline by which an unconditional decision to proceed must be made to secure substantial external funding. The CIIL funding in the order of \$33.5m will not be available after 15 December 2018. Without a Dam the Ministry for Environment Fresh Water Improvement funding of \$7m is lost. Any decision to engage in further consultation now would effectively end the project.
- 13.25 Our Revenue and Financing Policy, which we also consulted on through the Long Term Plan, allows Council to make provision for the allocation of costs associated with the Dam proposal.

Significant Alteration to intended service level of a 'Significant Activity' s.97 of LGA:

- 13.26 **Section 97** of the LGA provides that '*a decision to alter significantly the intended level of service provision for any significant activity undertaken by or on behalf of the local authority*'...must not be taken unless explicitly provided for in the long term plan, and a proposal to provide for that decision was included in a consultation document in accordance with s.93E. Staff are of the view that:
- 13.26.1 A decision to proceed with the Dam proposal would not be considered a decision 'to alter significantly the intended service level provision for any significant activity' as envisaged by s.97(1)(a) LGA, as the levels of service in the Long Term Plan are based on the Dam proceeding. The practical consequence of this is that a mandatory amendment to the Long Term Plan would not be required.
- 13.26.2 A decision not to continue would constitute a decision 'to alter significantly the intended service level provision for any significant activity' as envisaged by s

97(1)(a) LGA. Such a decision would require a Long Term Plan amendment, and that in itself, would need to be the subject of consultation.

- 13.27 It is important that Council fully appreciates the practical difficulties faced in, in the event of a decision not to proceed with the Dam. In short, any such decision could be made 'in principle' only. This is because such a decision cannot be made unless it is expressly provided for in Council's Long Term Plan (and that itself must be the subject of consultation).

14 Consideration of Financial or Budgetary Implications

- 14.1 The proposed Dam is among the larger single investments the Tasman community is proposing to make in its core infrastructure. As a water augmentation project it provides a range of benefits across the community – water supply benefits, public good benefits like economic, environmental, recreational, social and cultural benefits and irrigation benefits. This makes the division of Council's costs more complex than a pure irrigation or urban water supply scheme. However, it is but a proportion of the total infrastructure budget allocated in the Long Term Plan.
- 14.2 During the development of its Long Term Plan 2018-2028, Council consulted on the Waimea Dam Project with an estimated investment of \$75.9 million. The project estimate has now increased to \$105.9 million, which is an increase of around \$30 million. Offsetting this, we have seen an increase in funding support from central government (CIIL) by way of extending the term of the \$10 environmental loan to 20 years. They have also reduced the coupon rate on WIL borrowing. That has allowed Waimea Irrigators Ltd to service \$8.75m of shareholder debt (for 15 years) that debt would otherwise be a council responsibility. The change in funding structure and additional support from WIL and the Crown have allowed Council to keep the rates funding for this project close to the levels in the Long Term Plan 2018-2018.
- 14.3 The Long Term Plan 2018-2028 has a total infrastructure capital spend of \$587m. Council's commitment of \$41.7m is around 7% of this spend.

15 Significance and Engagement

- 15.1 The fundamental decision-making obligations in section 76 of the Local Government Act 2002 are to identify and assess the reasonably practicable options for achieving the objective of a decision and to consider the views and preferences of interested and affected persons (in proportion to the significance). Please refer to paragraphs [13.7 -13.25] above for further related commentary on key LGA decision making responsibilities.
- 15.2 In the present case, the objective of the decision before Council is to determine whether to proceed with the Dam proposal based on the construction price, the terms negotiated with Council's project partners, and based on the adopted funding and governance proposal contained in the Long Term Plan 2018-2028.
- 15.3 Staff consider that a Council decision to proceed with the Dam proposal would be of a moderate level of significance. There will be a moderate financial impact of the decision on ratepayers and it is likely to be a controversial decision for some ratepayers. In our view, Council will not need to consult further prior to making the decision to proceed with the Dam, as it has consulted on the project and its components already. This consultation, and the various other ways Council has heard public views, have provided Council with a good

understanding of the community views. Councillors are elected to make decisions on behalf of their communities. Community views are just one of the inputs councils need to consider when making decisions. Council has provided for the proposal in the Long Term Plan 2018-2028. There will be no change in the level of service resulting from the decision and there is no need to amend the Long Term Plan.

- 15.4 A decision to proceed with the Dam may mean that Council has to adjust other capital projects in order to stay within its debt limits. Any future decision to adjust other capital projects could potentially be inconsistent with the Long Term Plan and could be of interest to a number of the ratepayers in the District who may be affected by such a decision. However, any changes would not be until next financial year or the year after, so the Council can consult on any project delays through the Annual Plan consultation processes for those years, if needed.
- 15.5 A decision or indication not to proceed with the Dam proposal would be far more complicated in terms of its level of significance and the need for public consultation. Staff consider that a Council decision or indication not to proceed with the Dam proposal would be of a high level of significance. Staff consider that a no Dam decision would require a Long Term Plan amendment under section 97 of the Local Government Act 2002. Section 97 states that Council can only make certain decisions if “they are provided for” in the Council’s Long Term Plan. Such decisions include any decision to alter significantly the intended level of service provision for any significant activity undertaken by or on behalf of the Council, including a decision to commence or cease any such activity.
- 15.6 In our view, a no dam Council decision would lead to a reduction in the level of service for water supply and security on the Waimea Plains and for environmental enhancement of the Waimea River. Therefore, prior to making a decision not to proceed with the Dam, Council would be required to amend its Long Term Plan through a public consultation process. Council needs to carefully consider the decision it makes and the risks it could expose itself to if it does not follow correct process under the legislation.

Issue	Level of Significance if <u>proceeding with Dam</u>	Explanation of Assessment	Level of Significance if <u>no Dam decision</u>	Explanation of Assessment
Is there a high level of public interest, or is decision likely to be controversial?	High	The Dam project has attracted a lot of public interest and is controversial.	High	The Dam project has attracted a lot of public interest and is controversial.
Is there a significant impact arising from duration of the effects from the decision?	Moderate	The decision to continue with the Dam project is considered of low to moderate significance due to the rating and debt impacts on ratepayers. However, these impacts will be over a fairly long time period given the term of the loans. The benefits of the Dam will extend for a very long period	High	A no Dam decision will be of high significance due to the loss of the \$83 million funding and concessional loans and the implications for the District of lost water security, economic productivity, environmental impacts, social impacts (e.g. employment), etc.
Does the decision relate to a strategic asset? (refer Significance and Engagement Policy for list of strategic assets)	N/A	If the Dam is built, the Council has determined that its investment in the Council Controlled Organisation will be listed as a strategic asset in the Significance and Engagement Policy. However, the Dam is not currently listed.	N/A	
Does the decision create a substantial change in the level of service provided by Council?	Low	The Council has already decided it is going to provide this level of service in the Long Term Plan (LTP).	High	A no Dam decision would affect the degree of water supply and security for urban water users and it would negatively affect the level of environmental protection to the Waimea River and connected aquifers. Water restrictions would increase for residents, business and irrigators. Therefore, it would change the levels of service provided for in the LTP.

Issue	Level of Significance if proceeding with Dam	Explanation of Assessment	Level of Significance if no Dam decision	Explanation of Assessment
Does the proposal, activity or decision substantially affect debt, rates or Council finances in any one year or more of the LTP?	Moderate	Most of the additional cost will fall on the community and environmental good component, which will impact on all general ratepayers in the District. It will also impact more on the Zone of Benefit ratepayers. There will be a relatively minor impact on the urban water users.	High	A no Dam situation will require Council to look for alternative options to supply the urban water users. These alternatives are likely to be significantly more costly than Council's share of the Dam. The District will lose \$83 million funding and concessional loans towards a water solution and the joint venture parties contributions will be lost.
Does the decision involve sale of a substantial proportion or controlling interest in CCO?	N/A	If the CCO has been established it will not be sold through these decisions.	Moderate	If the CCO has been established, it will not be sold through these decisions. However, Council will probably need to wind up the CCO if it decides not to proceed with the Dam proposal.
Does the decision involve entry into a private sector partnership or contract to carry out the deliver on any group of activities?	Low	Already within a JV partnership. This decision would not change that.	High	This decision would involve the exiting of a JV partnership.
Does the decision involve Council exiting from or entering into a group of activities?	N/A		Moderate	The Dam is an activity proposed to be carried out by Council in the LTP. A no Dam decision would mean Council would be exiting from an activity but not the whole water supply group of activities.

16 Conclusion

- 16.1 The case for building the Waimea Community Dam and proceeding with the current funding and governance proposal for the project, remains compelling. A large-scale water augmentation scheme needs to be built if the Council is going to meet its obligation to provide households and businesses with a reliable water supply at least cost in the longer term and for long term community well-being. The project also enables Council to meet its freshwater management obligations and is critical to the future viability of local industry and rural land users. Without the Dam, the water supplies in the area of the District supplied from the Waimea aquifers will fail to meet people's needs now and into the future.
- 16.2 As unpalatable as the choices may seem, Council has to make a decision.

- 16.3 While the Waimea Dam project may seem large and complex, in reality Council's proposed capital contribution to the project is only about 10% of its Long Term Plan capital works budget over the next 10 years.
- 16.4 The proposal and Dam construction will not proceed unless the partners (primarily Waimea Irrigators Ltd, Council and Crown Irrigation Investments Ltd) also agree to the project and its funding. The case for all of the partners continuing to work together and collaborate on the project is strong. Since the increased construction costs became known, the partners committed to closing the funding gap, which has led to the funding proposal before you today and the completion of the details contained in the term sheets.
- 16.5 Council cannot meet its urban water supply needs now and in the future, without water augmentation on the scale that the Dam project provides. Demand control measures, even the most severe, will not reduce demand from households and businesses to the extent that the water allocation rules in the Tasman Resource Management Plan require, if there is no Dam.
- 16.6 The alternatives to the Dam proposal are either more costly; don't provide the same protection against droughts; don't provide for the increase in future demand; or don't meet Council's obligations under the National Policy Statement on Freshwater Management and the National Policy Statement on Urban Development Capacity. Some of the alternatives fail on all counts. The options for industrial and rural water users are also limited if Council decides not to proceed with the proposed Dam in the Lee Valley.
- 16.7 The Council's contribution to the project delivers the direct benefits needed for less cost than going it alone. As a bonus, the scheme delivers a suite of environmental, social, recreational, cultural and economic benefits that no other option does.
- 16.8 The current Dam proposal is still the most effective way of meeting the current and future water supply needs of the households and businesses in the area. All of the alternatives carry more risk than the Dam proposal; most are actually 'unrealistic' and none deliver the same level of water supply security now or in the future or the co-benefits that the Dam project does.

17 Next Steps

- 17.1 We will advise our partners and the public of the decision.
- 17.2 Staff will undertake the necessary work to implement the resolutions.

18 Attachments

- | | | |
|----|--|-----|
| 1. | 28 August 2018 Waimea Dam Report to Full Council | 43 |
| 2. | Waimea Community Dam Project Agreement Summaries | 127 |



8.1 WAIMEA COMMUNITY DAM PROJECT

Decision Required

Report To:	Full Council
Meeting Date:	28 August 2018
Report Author:	Janine Dowding, Chief Executive Officer; Mike Drummond, Corporate Services Manager; Susan Edwards, Community Development Manager; Richard Kirby, Engineering Services Manager; Rob Smith, Environmental Information Manager
Report Number:	RCN18-08-1
File Reference:	

Preamble

This report is in two sections. Section One is structured in Council's standard report template. Section Two provides information to support section one. This section contains information including that requested by the Full Council at its meeting on 9 August 2018.

1 Executive Summary

- 1.1 This report provides Council with the information it needs to make a decision on whether to proceed with the Waimea Community Dam (the Dam) Project.
- 1.2 During the development of its Long Term Plan 2018-2028, Council consulted on the Waimea Dam Project with an estimated investment of \$75.9 million. At the completion of the Early Contractor Involvement (ECI) process the project estimate has increased to \$102.2 million which is an increase of around \$26.3 million. It is apparent that around \$3.0-\$3.5 million of savings can be made in some aspects of the design and it is intended that these savings will be achieved. This reduces the funding gap to \$23.0 million. However, for this report we will continue to state the project estimate at \$102.2 million.
- 1.3 The Waimea Dam Project must reach financial close by 30 November 2018. The Crown Irrigation Investment Limited (CIIL) and the Ministry for the Environment Fresh Water Improvement funding will no longer be available after 15 December 2018. CIIL have indicated that the funding will still be available if the Local Bill is not passed by the 15 December 2018 deadline, provided all other matters have been resolved and contracts have been signed.
- 1.4 The report covers:
 - 1.4.1 the key principles Council should consider when making its decision on whether to proceed with the project;
 - 1.4.2 the drivers of the project since its inception;

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**WAIMEA COMMUNITY DAM PROJECT**

- 1.4.3 changes which have occurred in the environment over time;
 - 1.4.4 the factors which have made the Dam the preferred option over a number of years;
 - 1.4.5 the alternatives and how they compare to the Dam option;
 - 1.4.6 the impacts of Council meeting its share of the funding gap;
 - 1.4.7 the consequences of a decision to proceed with the Dam;
 - 1.4.8 the consequences of a decision that would end the project;
 - 1.4.9 other factors relevant to the decision; and
 - 1.4.10 balancing expert and staff advice against information provided by other parties.
- 1.5 Council has the following options to consider:
- 1.5.1 Option 1: Proceed with the Dam to financial close and fund Council's share of the increased project cost; or
 - 1.5.2 Option 2: Decide not to proceed with the Dam and commence work towards finding a combination of alternative options for affordable and effective solutions, that will provide a secure urban water supply and meet our regional council obligations.
- 1.6 The advantages and disadvantages of Options 1 and 2 above are outlined in the body of the report.
- 1.7 The report also discusses the Council's decision making obligations, the policy and legal context surrounding the decision and the financial implications of the decision Council is being asked to make.
- 1.8 We have also provided an extensive amount of supplementary information to this report, should Council wish to have further information to assist its decision making.
- 1.9 Unless the Council decides to help close the funding gap, the Dam will not proceed despite the compelling case for it. In addition the alternatives, which will cost more, do not deliver the same security of supply and long-term growth benefits that the project does, nor the social, environmental, economic and cultural co-benefits.
- 1.10 The Council needs to reconsider the funding contribution it proposed in the Long Term Plan 2018-2028 and decide whether to increase it. Waimea Irrigators Ltd have indicated their commitment to review their position and funding in order to reach financial close.



WAIMEA COMMUNITY DAM PROJECT

2 Draft Resolution

That the Full Council:

1. receives the Waimea Community Dam Project ; and
2. re-confirms its decision of 27 July 2017 (CN17-07-1) that the proposed Waimea Community Dam in the Lee Valley is the best solution for meeting the community's need for good quality local water supply infrastructure; and
3. agrees in principle to fund its share (51%) of the \$23m projected capital cost increases in the proposed Waimea Community Dam Project; and
4. notes that the \$23m in 3 above may be offset by a Provincial Growth Fund grant; and
5. instructs staff to progress negotiations and work streams through to a final agreement for Council approval as part of financial close in late November 2018; and
6. notes that the reasons for reviewing the Council's funding position include:
 - the broad range of benefits offered by the proposed Waimea Community Dam compared to the alternatives, including addressing Council's water management obligations under the Resource Management Act; the National Policy Statement on Freshwater Management; and the National Policy Statement on Urban Development Capacity; and
 - the costs, lesser benefits, risks and uncertainty associated with the alternatives; and
 - the obligation to provide good quality infrastructure that is most cost effective for households and businesses; and
7. notes that Waimea Irrigators Limited and Crown Irrigation Investments Limited have indicated their commitment to review their position and funding in order to reach financial close.

3 Purpose of the Report

- 3.1 The purpose of this report is to provide Council with the information it needs to make a considered, well-informed and robust decision on whether to proceed with the Waimea Community Dam project.



Report to Full Council Meeting - 28 August 2018

WAIMEA COMMUNITY DAM PROJECT

Section 1



WAIMEA COMMUNITY DAM PROJECT

4 Background and Discussion

Introduction

- 4.1 The Waimea Community Dam project has reached a critical juncture after 14 years (the Waimea Water Augmentation Committee started work in 2004) and Council must decide whether to progress with the project. Any decision not to proceed at this time is in effect a decision to end the project. Council is in the unenviable position of having the responsibility to reach a decision, which will be unpopular with some.
- 4.2 The Dam project has been analysed, tested, challenged and peer reviewed more than any other project in Council's recent history.
- 4.3 Council over the years has made numerous decisions to get us to the point we are today. Council has made those decisions following rigorous analysis and advice from staff, and numerous professional experts in their fields, along with input from various stakeholders and from the community.

Key decision making principles

- 4.4 As an elected Councillor, you hold an important leadership role and your primary duty is to serve the interests of the Tasman District as a whole.
- 4.5 You are responsible, following advice from commissioned experts and Council staff, for the strategic decision making that impacts the provision of services for the current and future ratepayers of the District.
- 4.6 The Code of Conduct articulates general principles of good governance. These principles dictate that, when approaching this decision, you must:
 - 4.6.1 act with impartiality, making your decision based on merit, and with the best interest of the District in mind (please refer to sections 12.9-12.12 of this report); and
 - 4.6.2 act with openness, accountability, honesty and integrity; and
 - 4.6.3 exercise personal judgment, taking into account the views of others but reaching your own conclusions on the issues before you; and
 - 4.6.4 ensure that Council maintains sufficient resources to meet its statutory obligations, whilst using resources prudently and for lawful purposes; and
 - 4.6.5 respect the impartiality and integrity of Council staff.

Discussion on key matters to address in this report

The Drivers of the Project Since Inception

- 4.7 The Waimea Plains and surrounding towns draw their water from the Waimea River and its associated aquifers. Since the 1980s, water in the Waimea Plains has been over-allocated (i.e. there is not enough water for all the people who have consents to take water, including urban water supplies, rural irrigators, commercial and industrial water users). Extended periods of dry weather or droughts have meant Council has had to impose water restrictions nearly every summer since 2001. These water restrictions affect the lives of everyone living and working in the Waimea Plains and the viability of businesses, which rely on a secure water source.



WAIMEA COMMUNITY DAM PROJECT

- 4.8 Minimum water flows are required in the Waimea River to maintain ecological, cultural and recreational values. We cannot achieve these values under the existing water allocation regime, which is likely to lead to severe reductions in water allocations to permit holders if a water augmentation scheme for the river is not undertaken.
- 4.9 If there is no Dam and river flows are low, all water take permits from the Waimea aquifers and river system could be cutback by as much as 100%, depending on the severity of the drought. This includes urban water supply permits also, but by a lesser amount. These cutbacks are required in order to protect the health of the Waimea River and avoid saltwater contamination of groundwater, by seeking to maintain a minimum river flow of 800 litres per second. This minimum flow is well below the 1,300 l/s required to maintain the river flows at the seven day mean annual low flow (MALF) level.
- 4.10 Water cutbacks would have a large impact on Waimea Plains urban, rural restricted and industrial water users in Richmond, Brightwater, Redwood Valley, Mapua and Nelson South; on commercial water users in the surrounding area; and on horticultural and agricultural water users.
- 4.11 Security of water supply, particularly over the summer period with peak water demands, is essential for the local economy. A third of all employment in the Tasman District is in the primary industries and manufacturing sectors. 50% of Council's urban water supply for the areas mentioned in 4.10 is used by businesses.

Changes that have occurred in the environment over time

- 4.12 With changing climatic conditions, our Region is projected to experience more extreme and more frequent drought conditions. Without a dam or other water augmentation project, we would currently have some form of water rationing for nine out of ten years. NIWA predicts that due to changing climatic conditions, parts of the Tasman Region, including the Waimea Plains, will by the year 2070 -2090, experience a 10% increase in the frequency of droughts that it currently experiences (NIWA August 2015 *Climate Change and Variability – Tasman District*).
- 4.13 Statistics New Zealand's medium series of population projections show Tasman's population growth is projected to be 9% between 2018 and 2038, with growth in the Waimea catchment area expected to be higher. However, recent population and dwelling growth rates indicate that growth is likely to be higher than the Statistics New Zealand medium growth scenario. Due to the combination of population growth and a trend for smaller households, we expect that housing demand will grow at a higher rate over this period, placing more pressure on our water supply.
- 4.14 The previous Government introduced a National Policy Statement for Urban Development Capacity (NPS-UDC). This new NPS-UDC requires us to plan and provide the necessary infrastructure such as water and wastewater to meet projected housing and business demand.
- 4.15 The demand for water will increase and Council must manage and meet this demand. That includes pressure to increase the minimum flows in the river above the current 1,100 l/s provided under the Dam option.



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The factors which have made the Dam the preferred option over a number of years

- 4.16 For many years, Council has accepted that 'doing nothing' is not an option when it comes to addressing the water allocation and water quality issues in the Waimea River catchment. There is an equally compelling case for action to secure the urban water supply against droughts and growth demand.
- 4.17 Council has broadly accepted that the proposed Waimea Community Dam in the Lee Valley is the preferred solution to the need to augment the Waimea River and its aquifers. This is in part due to it being the most cost effective and feasible solution to provide multiple benefits to urban water users (residential, commercial and industrial), the environment and to water users on the Waimea Plains.
- 4.18 This Council, as recently as 27 July 2017, has also confirmed this preference when it passed the following resolution (CN17-07-1):
- That the Full Council*
1. *receives the Waimea Community Dam – Project Report RCN17-07-07; and*
 2. *confirms, having sought and considered further advice about the alternative urban water supply augmentation options, that the proposed Waimea Community Dam in the Lee Valley is the best solution for meeting the community's need for good quality local water supply infrastructure; and*
 3. *... (parts 3-5 of the resolution covered different matters relating to the Dam).*
- 4.19 The Council is obliged to meet the current and future needs of communities for good quality local infrastructure, in a way that is most cost effective. Under the Local Government Act 2002:
- ...good quality in relation to local infrastructure, local public services and performance of regulatory functions, means infrastructure, services and performance that are:*
- a) *efficient*
 - b) *effective; and*
 - c) *appropriate to present and anticipated future circumstances.*
- 4.20 In mid-2017, Council reviewed a wide range of options prior to passing the resolution on 27 July.
- The alternatives and how they compare to the Dam option.***
- 4.21 Since 1991, Council has been involved in the investigation of water supply augmentation options for the Waimea Basin. We have commissioned many reports over the years including a feasibility study undertaken between 2004 and 2007 that looked at 18 different sites. Of all of the water augmentation options investigated, a dam in the Lee Valley was the preferred option.
- 4.22 In order to determine the effectiveness of the various options, we assessed the potential urban demands to determine the quantities of water required now and into the future. We then assessed the potential demand against the supply available under the various options and the gaps in supply were identified.



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- 4.23 Over the years since 2004, several of the 18 alternatives originally identified have been re-assessed and presented to Council in various forms. We have also considered options to reduce demand by water harvesting (e.g. rain water tanks). The demand requirements, scope and outcomes of these alternatives varied significantly. In June/July 2017, staff reviewed all the reports on these alternatives or variations of them. Staff recast the scope and deliverables of each of the alternatives utilising the urban demand and supply information. Staff presented the revised alternatives to Council at its meeting 27 July 2017. Essentially the water storage options fall into four categories:
- Option 1: Riverside Ponds storage (on banks of Waimea River);
 - Option 2: Motueka aquifer (piping from Motueka to Mapua/Richmond);
 - Option 3: Roding River storage (impoundment of Roding River); and
 - Option 4: Teapot Valley storage (impoundment in Teapot Valley).
- 4.24 An assessment of these options and their variations is contained in **section 16** of this report.
- 4.25 Council requested an independent review by specialists of three of the alternatives:
- 4.25.1 Riverside Pond with Storage 500,000 m³ and delivery of 4,000 m³/day;
 - 4.25.2 Riverside Pond with storage of 800,000 m³ and delivery of 13,000 m³/day; and
 - 4.25.3 Motueka Aquifer to Mapua delivering 5,900 m³/day.
- 4.26 In addition, staff have examined the potential for Nelson City Council to supply Tasman, delivering up to 5,000 m³ / day.
- 4.27 It is important to note that these options will only contribute to addressing the urban water supply problem, and will not address river health, biodiversity, economic, recreational or cultural matters.
- 4.28 **Section 16** of this report contains updated costs estimates and further analysis of these options.
- 4.29 This analysis shows that the Waimea Community Dam is the most cost effective, reliable, and complete solution for providing water for the urban water supply. The Waimea Community Dam will provide a very high level of security of supply for abstractive users, including Council.
- 4.30 While the dam will hold around 13M m³ of water at any point in time, its effective storage is much higher, at around 42M m³. The Dam storage is dynamic - it will continually be “refilled” from the catchments above. The urban water supply’s share of the Waimea Community Dam’s effective storage is 8.4M m³.
- 4.31 The Riverside Pond option with storage of 500,000m³ and delivery of 4,000m³/day is not likely to sufficiently mitigate rationing for urban and industrial users. Although it could meet the current demand gap during Stage 3 restrictions, it is likely that some form of rationing will occur concurrently. This option is therefore not considered viable for the associated investment of \$25 million. The Northington Report August 2018 reaches a similar conclusion.
- 4.32 The next best alternative to the Waimea Community Dam is the riverside pond option providing 800,000 m³ (0.8M m³) of storage. The cost of pursuing this option is \$60m.



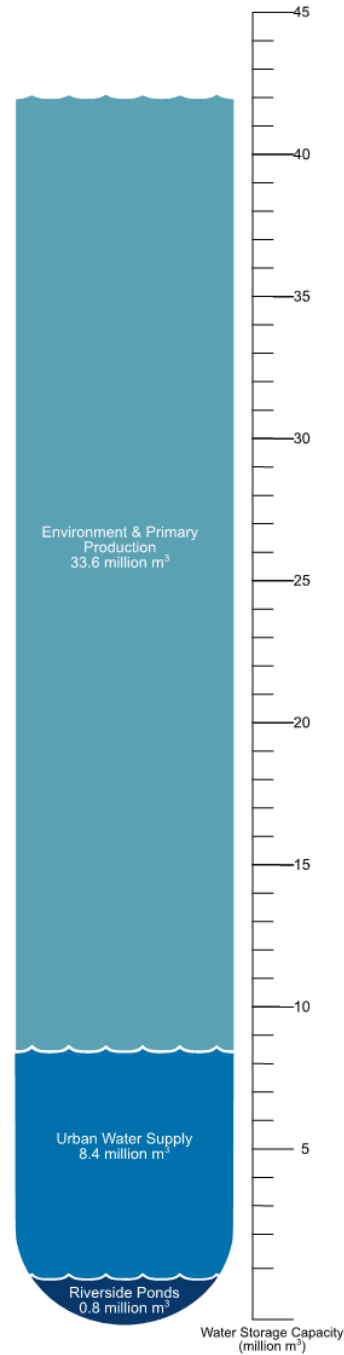
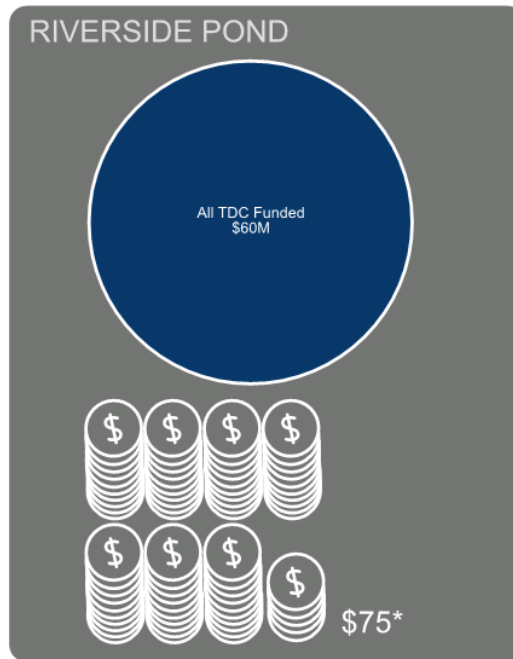
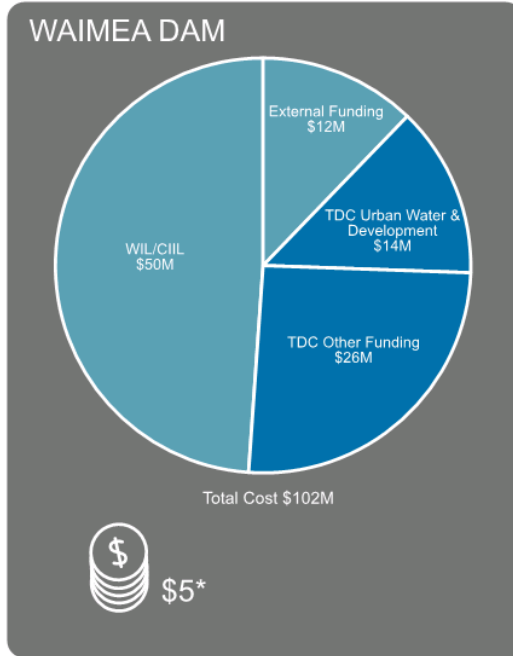
WAIMEA COMMUNITY DAM PROJECT

- 4.33 The difference in the value proposition between these two options is stark. Council can pursue a complete solution together with others in our community for a total Council contribution of \$39m or it can go it alone and pursue a partial solution with a lower level of water security for the urban water supply only, at \$60m.
- 4.34 The difference between the costs and the amount of water secured between these two options is illustrated below.



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*Council capital cost per cubic metre of urban water supply storage



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- 4.35 As noted above, “doing nothing” is not an option when it comes to addressing water allocation and water quality issues in the Waimea River catchment or for securing the urban water supply against droughts and demands from growth.
- 4.36 For Stage 3 rationing (which we can expect nine years out of 10), the water gap is 4,900 m³/day at its peak, and it will grow to around 12,300 m³/day in 100 years in the medium growth scenario. If we want to secure households and businesses against Stage 5 rationing (one in five years) then the peak water gap is 13,000 m³/day now and will be 21,000 m³/day in 2117.
- 4.37 Cost is not the only factor contributing to Council's previous decisions that the Waimea Community Dam is the preferred option. The wider social, economic, environmental and cultural benefits of the options were also relevant to the decision making. When other non-financial matters are considered, the choice becomes even clearer. The other matters include benefits such as to the environment, to irrigators and others in the community, as well as leveraging private and government funds.
- 4.38 There are also risks or dis-benefits of the options to consider. In the case of the Waimea Community Dam most of the risks have been mitigated through the Plan Change process, design, consenting, procurement process and use of the Public Works Act. There are residual (unmitigated risks) to be considered with the Dam such as flooding during construction and legal challenges. Those risks exist with every option on top of the risks that have already been managed in the case of the Dam.
- 4.39 The case for the Council investing in the Waimea Community Dam for the benefit of urban water users is compelling. The case is further strengthened because of the contribution the Dam makes to meeting the National Policy Statement on Freshwater Management objectives, Resource Management Act objectives (particularly in relation to water management) and Council's strategic goals.

The impacts of Council meetings its share of the funding gap for the project.

- 4.40 Council will meet its share of the funding gap through use of rates, fees and charges on the same basis as the existing model for funding the project. Council's approach to the allocation of these costs across the District is contained in Council's Revenue and Financing Policy. The increased capital and likely operating costs have been estimated and the revised rating impacts are set out later in the report. The allocation of costs have also been impacted by growth in households and the 2017 District wide revaluation. Any grant funding from the Provincial Growth Fund (PGF) would have a positive impact on reducing the level of rates required across the District to fund the environmental and public good aspects of the project and make the project more affordable for the community.

Consequences of a decision to proceed with the Dam.

- 4.41 If Council decides to proceed with the Dam it will need to make a commitment to fund its share of the additional costs of the project, on the understanding that other funding sources are not yet finalised and may not eventuate. The final decision to proceed or not will be made by all Joint Venture partners prior to financial close in late November 2018.
- 4.42 The portion of the project that is subject to overruns (i.e. not fixed) is \$18m. There is a contingency of \$2.355m (13%) built into this figure. Given the rigour applied to the project to date, it is not expected that this would be exceeded.

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- 4.43 There are tight timeframes to complete all of the work streams required to reach financial close. Council's cost for negotiations and professional support will be met from within the already approved budget. There is \$247,000 remaining available to fund the Council unrecoverable costs out to financial close.
- 4.44 There is still a risk, albeit unlikely, that the Local Bill will not be enacted. This is the only matter that can be outstanding at financial close if the Crown Irrigation Investments Limited and Ministry for the Environment funding is to be retained.
- 4.45 If the Dam proceeds, provision will be made for installation of hydroelectricity generation to utilise the stored energy in the water as it is released into the Lee River. This will generate some income. The marginal cost for installing (or providing for) hydroelectricity will need to be met by Council.

The consequences of a decision that would end the project.

- 4.46 If Council was to make a decision not to proceed with the Dam, a combination of alternative water solutions that are affordable and effective for present and anticipated future circumstances, must be found for:
- river health;
 - urban demand (residential and commercial uses);
 - horticulture and agriculture needs; and
 - industry needs.
- 4.47 We will need to scope, investigate, design and obtain necessary consents and land, and consult on any alternative solution with the public. Any alternative is likely to take several years to develop to the stage of being implementable, assuming there is an affordable alternative to the Dam. Any alternatives to date will likely only address the short-term urban water needs.
- 4.48 Council and ratepayers will need to fully fund any alternative. At the moment, under the Council's Revenue and Financing Policy, the funding allocation for the most likely alternative would all go to the Urban Water Club. If Council wished to change that allocation due to affordability concerns, it would need to publicly consult on an amendment to its Revenue and Financing Policy.
- 4.49 Until we have identified and implemented an alternative water solution, the Waimea River will continue to have compromised health.
- 4.50 The Tasman Resource Management Plan rules under a no dam scenario will come into immediate effect. These rules will bring in greater controls on water use for all users and will mean restrictions on new residential, industrial and business development until we identify and commission any alternative urban supply solutions.
- 4.51 Under the Tasman Resource Management Plan rules, Stage 3 rationing could occur nine out of every ten years (based on the last 16 years of data). This level of rationing would require the greater of a 25% reduction in urban water consumption and a 50% reduction in water for the other consented takes. Stage 5 rationing, which could occur one in every five years based on last 16 years of data, allows for water takes of only 125 litres per day, per person for essential human health.



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- 4.52 Council is currently considering a proposed bylaw, which will apply restrictions to manage water demand. The bylaw will require new enforcement and compliance action by Council, which will add additional cost to Council and frustration and dissatisfaction to urban water users who are subject to enforcement action, fines and prosecution. The level of restrictions required is likely to cause significant disruptions to our community and to many businesses connected to Council's urban water supply.
- 4.53 There will be less water available for irrigation in droughts and a reduced security of supply for businesses who rely on water. This will negatively impact on business investment and some businesses have already indicated that they may close down or relocate out of the District. Some businesses have indicated that they will not be able to operate, which will have impacts on their employees and the contracts they have with other providers and suppliers and customers.
- 4.54 Any attempt to amend the Tasman Resource Management Plan to enable more water abstraction from the Waimea River or aquifers, or to change the rules to give priority to urban water, is likely to be opposed, with the potential for even greater restrictions due to higher environmental flows and earlier triggers for cease takes being imposed. Council does not have an unfettered power to change the Tasman Resource Management Plan.
- 4.55 There will be a substantial financial and economic loss to the Nelson-Tasman region if the Dam does not proceed.
- 4.56 The loan funded investment in the project to date will need to be repaid or be written off, including:
- 4.56.1 \$2.5m unrecoverable costs and \$4-5m of Joint Venture project costs which were to be refunded by the joint venture and need to be loan funded over 5 years and rated for;
 - 4.56.2 The investment made to date by the multiple parties involved circa \$13m becomes a stranded investment.
- 4.57 The project will also lose all the external investment from Crown Irrigation Investments Limited, Ministry for the Environment Freshwater Improvement Fund, Nelson City Council, irrigators and any potential grant from the Provincial Growth Fund. The funding at risk totals approximately \$60 million. Any indication at this stage that Council will not be pursuing the Dam project will mean the loss of this funding and it will not be recoverable at any time in the future.
- 4.58 There is a strong belief within sections of the community that there is plenty of water in the aquifers and therefore abstraction restrictions are not necessary. It is true that there are large volumes of water in the aquifers, however the volume of water is not the issue. The issue is the water level in those aquifers. Abstraction will draw the water level down to a point where it detrimentally affects the flow in both the Wairoa and Waimea Rivers. The rivers dry up as the water naturally wants to drain into the aquifers to restore their water levels. The lower water level in the aquifers would also encourage salt water to drain into them from the Waimea Estuary thereby increasing the risk of salt water intrusion. It is therefore critical that the flow is maintained in the river to retain water levels in the aquifers as abstraction occurs.



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- 4.59 A decision not to proceed with the Dam would also result in the lost opportunity for hydroelectricity generation.
- 4.60 Staff consider that a Council decision or indication not to proceed with the Dam would be of a high level of significance. Such a decision would be inconsistent with Council's Long Term Plan 2018-2028 (refer to section 9 for details).

Other factors relevant to the decision.

- 4.61 Council's decision on the Dam will impact the economy of the Nelson-Tasman region. The New Zealand Institute of Economic Research (2017) report suggests that if the Dam does not proceed, the Nelson-Tasman economy would be \$20 million smaller each year on average with water allocation cuts of 20%, and \$49 million smaller with cuts of 35%.
- 4.62 The Northington Partners Report (2017) estimated the potential financial and economic loss from a no dam option at \$859m assuming a 20% water take cut, or \$1,132m assuming a 35% water take cut. Of this total, an estimated \$29m was the lost opportunity cost of environmental improvement in the river system.
- 4.63 The decision on the Dam will have an effect on wider community well-being in terms of river health, recreational opportunities, employment opportunities and the cultural values of the river.
- 4.64 Council has applied to the Provincial Growth Fund for a grant towards the Dam project. The success or otherwise of this application is not yet known. If the application is successful, the funding would help bridge the gap in funding created by the increased project costs.
- 4.65 As noted earlier in this report, the projected impacts of climate change are likely to lead to increased droughts in the Waimea catchment and increase the incidents of water rationing if a water augmentation project is not undertaken.
- 4.66 The Government is reviewing the management and delivery of the three-water activities as a result of the Havelock North Inquiry. It has signaled that this broad-ranging review will be undertaken this year. The Government recognises that the local government sector is facing variable service delivery challenges and significant cost pressures related to the management and delivery of the three-water services.
- 4.67 There has been some commentary that with the pending three waters review; the Council should not invest in the Waimea Community Dam because the government will soon take over the three-waters and it can then be responsible for water augmentation. This view is not supported because:
- 4.67.1 There is no certainty as to whether the 3 waters activities will be aggregated into a separate entity or the scale of any aggregation. If aggregation did occur then the aggregated entity would only be interested in water augmentation for the urban supply and not be interested in any other benefits. Alternative water augmentation options have already been identified as not being as cost-effective for urban water supplies as the Waimea Community Dam;
 - 4.67.2 The Council has a regional council responsibility to protect and enhance the environment. It would need to find another means to maintain and enhance the ecology of the rivers;

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- 4.67.3 The Council has a statutory responsibility to ensure the economic, social and environment wellbeing of its community. The economic multiplier of the Dam has been verified by the Northington report;
- 4.67.4 The government has not signalled how it may help in financing or subsidising the three-waters. Even if it does subsidise in some form or other, users would still bare the greater share of the funding. Any subsidy is not likely to match the current funding that the government has allocated to the Waimea Community Dam.
- 4.67.5 Potentially the transfer of the water supplies to a separate entity, would also result in the transfer of the water supplies' debt and share of operating costs related to the Waimea Community Dam.
- 4.67.6 It is likely that there will be a new regulator and review of the current regulations related to the three waters activity.
- 4.67.7 Any investment from government would likely be prioritised to areas of high depreivation.

Balancing expert and staff advice against information provided by other parties.

- 4.68 Council is entitled to rely on the advice of staff and the evidence of specialists engaged to contribute in their area of expertise to this project. They are professionals who are recognised experts in their field. They have professional membership and indemnity cover.
- 4.69 Commentary from members of the public is generally in the nature of views and preferences (which the Council is obliged to consider). As to technical and financial matters, the Council may be expected to rely on expert professional advice. Wherever possible, matters raised by submitters have been subject to review and commentary from officers and specialist advisors.
- 4.70 A full list of the reports commissioned by Waimea Water Augmentation Committee or Council on the Dam is outlined in **Appendix J**.



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5 Options

- 5.1 Council has the following options to consider:
- 5.1.1 Option 1: Proceed with the Dam through to financial close and fund Council's share of the increased project cost; or
- 5.1.2 Option 2: Decide not to proceed with the Dam and to commence work towards finding a combination of alternatives that are affordable and effective solutions, that will provide a secure urban water supply for the Waimea Plains and meet our regional council obligations.
- 5.2 **Option 1: Proceed with the Dam through to financial close and fund Council's share of the increased project cost** – the advantages of option one are that this option would have the least cost to Council and ratepayers. It would be the easiest option to achieve, given the Dam project is well scoped, consented and Council has a firm tender price for the Dam construction. The Dam project is consistent with proposals Council has previously consulted with the public on; and it would enable Council to provide a secure urban water supply to the Waimea Plains at the earliest time. This project also achieves wider benefits to the region, including to irrigators and public good outcomes such as improving the health of the Waimea River, recreational opportunities, employment opportunities, opportunities for growth, etc. There will also be an opportunity for Council to decide not to proceed with the Dam if all the agreements are not concluded successfully by financial close.
- 5.3 The main disadvantages of this option are the increased costs associated with the project. These are above what Council has provided for in its Long Term Plan 2018-2028. Other capital projects may need to be delayed in order for Council to keep within its debt and rates limits.
- 5.4 **Option 1** is the recommended option.
- 5.5 **Option 2: Decide not to proceed with the Dam and to commence work towards finding a combination of alternatives that are affordable and effective solutions, that will provide a secure urban water supply for the Waimea Plains and meet our regional council obligations**– the advantages of this option are it will defer the cost of the Dam project in the short term. The disadvantages of this option are outlined in paras 4.45–4.59 above. The discussion on significance and engagement in section 9 of this report is of particular relevance to this option and should be read in conjunction with it.

6 Strategy and Risks

- 6.1 Providing a safe and secure urban water supply is a key activity for Council. The Waimea Dam project is designed to enable Council to achieve a safe and secure water supply to the residents and businesses on the Waimea Plains, while also achieving a range of public good benefits, including economic, environmental, social, recreational and cultural benefits.
- 6.2 There are a range of risks associated with the project should it proceed, including construction risks, funding risks, reputational risks for Council, among others. A full discussion on risk is outlined in section 18 of the report.



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- 6.3 There are also risks should the project not proceed in terms of economic risks to the Nelson-Tasman region, loss of employment opportunities, lost growth and development opportunities, constraints on growth, lost opportunities to improve the health of the Waimea River and reputation. Council has received information on these matters in various reports over recent years.

7 Policy / Legal Requirements / Plan

- 7.1 Over the years, there has been a great deal of consultation on the Waimea Community Dam project. It has been contained in Council's Long Term Plans since at least 2006. Council has also undertaken specific consultation on the project in both 2014 and 2017.
- 7.2 Through the adoption of its Long Term Plan 2018-2028 on the 28 June 2018, Council confirmed its investment of \$26.8m towards the capital cost of the Dam, and approximately \$715,000 per annum (inflation adjusted) for operational costs. Council is meeting the Dam costs through a mix of targeted rates, development contributions, and revenue and enterprise activity surpluses.
- 7.3 Our Revenue and Financing Policy allows Council to make provision for the allocation of costs associated with the Dam.
- 7.4 Please refer to section 9 of this report for a discussion on the complex issues relating to the significance and engagement, and meeting the Local Government Act 2002 requirements.
- 7.5 There are other factors that the Council must have regard to in complying with the decision making provisions in the Local Government Act. These include the principles in s.14 of the Act, Council's resources and the extent to which the nature of the decision, or the circumstances in which it is taken allow the Council the scope to consider options, or the views and preferences of persons.
- 7.6 Among the s14 principles that are relevant here are:
- 7.6.1 Openness;
 - 7.6.2 The views of all communities;
 - 7.6.3 Your (strategic) priorities and desired outcomes;
 - 7.6.4 Collaboration with other bodies;
 - 7.6.5 Prudent stewardship of resources; and
 - 7.6.6 Effective future management of assets.



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8 Consideration of Financial or Budgetary Implications

- 8.1 The proposed Dam is among the larger single investments the Tasman community is proposing to make in its core infrastructure. As a water augmentation project it provides a range of benefits across the community – water supply benefits, public good benefits like economic, environmental, recreational, social and cultural benefits and irrigation benefits. This makes the division of Council's costs more complex than a pure irrigation or urban water supply scheme.
- 8.2 Section 101(3) of the Local Government Act 2002 sets out the matters that Council must consider when funding an activity. Council completed an analysis of those matters for the allocation of our funding contribution to the Dam project in October 2017. From that analysis, Council agreed on a preferred funding model to include in the 2017 Waimea Community Dam Consultation Document – Statement of Proposal for Governance and Funding arrangements. That funding model as subsequently adopted into our Long Term Plan 2018-2028.
- 8.3 In order to fund the proposed increase in our 51% share of the Dam costs of \$23m, we propose to retain the adopted funding model whereby the additional project costs are apportioned across direct and indirect beneficiaries on the same basis.
- 8.4 The extractive user contribution through the Urban Water Club would increase from \$9.58m to \$13.4m (including \$1.9m in development contributions).
- 8.5 The Community and Environmental benefits share of the costs would increase from \$4.29m to \$12.4m (without any Provincial Growth Fund funding). This would see the District wide rate increase from its maximum of approximately \$29/rateable rating unit/year to \$46 /rateable rating unit/year (based on the 2017/2018 number of rating units).
- 8.6 The table below sets out a comparison between the rates proposed in the October 2017 Consultation Document and current estimates (without any Provincial Growth Fund funding). The revised rates are based on the final Zone of Benefit area and property values post the 2017 district wide valuation. The property values have been increased to reflect the district wide revaluation.

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Typical Rates Inc GST				
		\$000s		
Total Project Capital Cost		\$	99,172	
Total Project Annual Operational Costs		\$	1,691	
Example Properties (Incl GST)	Property CV	Total Rates	CD Oct 2017	Annual increase
Richmond / Best Island	325,000	\$ 169	\$ 119	\$ 50
Richmond	975,000	\$ 212	\$ 147	\$ 65
Mapua	780,000	\$ 199	\$ 138	\$ 61
Brightwater/Hope	522,400	\$ 182	\$ 127	\$ 55
Kaiteriteri	n/a	\$ 148	\$ 105	\$ 43
Murchison, Wakefield, Pohara	n/a	\$ 148	\$ 105	\$ 43
Upper Moutere, Motueka and Takaka (excluding Upper Takaka)	n/a	\$ 46	\$ 29	\$ 17

9 Significance and Engagement

- 9.1 The fundamental decision-making obligations in section 76 of the Local Government Act 2002 are to identify and assess the reasonably practicable options for achieving the objective of a decision and to consider the views and preferences of interested and affected persons (in proportion to the significance). In the present case, the objective of the decision before Council is to determine how to respond to changed pricing information should a decision be to proceed with the Dam project.
- 9.2 Staff consider that a Council decision to proceed with the Dam project would be of a moderate level of significance. There will be a moderate financial impact of the decision on ratepayers and it is likely to be a controversial decision for some ratepayers. In our view, Council will not need to consult further prior to making the decision to proceed with the Dam, as it has consulted on the project already providing it with a good understanding of the community views and Council has provided for the project in the Long Term Plan 2018-2028. There will be no change in the level of service resulting from the decision and there is no need to amend the Long Term Plan.
- 9.3 A decision to proceed with the Dam is likely to mean that Council may in the future have to delay other capital projects in order to stay within its debt limits. Any future decision to delay other capital projects could potentially be inconsistent with the Long Term Plan and could be of interest to a number of the ratepayers in the District who may be affected by such a decision. However, any changes would not be until next financial year or the year after, so the Council can consult on any project delays through the Annual Plan consultation processes for those years, if needed.
- 9.4 The matter of a decision or indication not to proceed with the Dam is far more complicated in terms of its level of significance and the need for public consultation. Staff consider that a

**WAIMEA COMMUNITY DAM PROJECT**

Council decision or indication not to proceed with the Dam project would be of a high level of significance. Such a decision would be inconsistent with Council's Long Term Plan 2018-2028 and Council would need to clearly identify the inconsistency; the reasons for the inconsistency; and any intention to amend the Plan to accommodate the decision (section 80 of the Local Government Act 2002). Staff consider, that a no Dam decision would trigger a Long Term Plan amendment under section 97 of the Local Government Act 2002. Section 97 states that Council can only make certain decisions if they are provided for in the Council's Long Term Plan. Such decisions are a decision to alter significantly the intended level of service provision for any significant activity undertaken by or on behalf of the Council, including a decision to commence or cease any such activity; or a decision to transfer the ownership or control of a strategic asset to or from the Council. In our view, a no dam Council decision would lead to a reduction in the level of service for water supply and security on the Waimea Plains and for environmental enhancement of the Waimea River. Therefore, prior to making a decision not to proceed with the Dam, Council should amend its Long Term Plan through a public consultation process.

- 9.5 The difficulty Council faces in this situation is that there is unlikely to be sufficient time to undertake a Long Term Plan amendment prior to the 30 November deadline for financial close and the 15 December 2018 date for the withdrawal of Crown funding. Also, any indication by Council that it may wish to make a no Dam decision following consultation on a Long Term Plan amendment is likely to mean our joint venture partners are no longer willing to invest time and funding in completing the workstreams needing to be undertaken prior to financial close. Either way, the effect would be that the Dam project would fail. Therefore, Council needs to carefully consider the decision it makes and the risks it could expose itself to if it does not follow correct process under the legislation.

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Issue	Level of Significance if proceeding with Dam	Explanation of Assessment	Level of Significance if no Dam decision	Explanation of Assessment
Is there a high level of public interest, or is decision likely to be controversial?	High	The Dam project has attracted a lot of public interest and is controversial.	High	The Dam project has attracted a lot of public interest and is controversial.
Is there a significant impact arising from duration of the effects from the decision?	Low to Moderate	The decision to continue with the Dam project is considered of low to moderate significance due to the rating and debt impacts on ratepayers and that it is over a 30 year loan period.	High	A no Dam decision will be of high significance due to the loss of the \$55+ million of Government funding and the implications for the District of lost water security, economic productivity, environmental impacts, social impacts (e.g. employment), etc.
Does the decision relate to a strategic asset? (refer Significance and Engagement Policy for list of strategic assets)	N/A	If the Dam is built, the Council has determined that its investment in the Council Controlled Organisation will be listed as a strategic asset in the Significance and Engagement Policy. However, the Dam is not currently listed.	N/A	
Does the decision create a substantial change in the level of service provided by Council?	Low	The Council has already decided it is going to provide this level of service in the Long Term Plan (LTP).	High	A no Dam decision would affect the degree of water supply and security for urban water users and it would negatively affect the level of environmental protection to the Waimea River and connected aquifers. Therefore, it would change the levels of service provided for in the LTP.



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Issue	Level of Significance if <u>proceeding with Dam</u>	Explanation of Assessment	Level of Significance if <u>no Dam decision</u>	Explanation of Assessment
Does the proposal, activity or decision substantially affect debt, rates or Council finances in any one year or more of the LTP?	Moderate	Most of the additional cost will fall on the community and environmental good component, which will impact on all general ratepayers in the District. It will also impact more on the Zone of Benefit ratepayers. There will be a relatively minor impact on the urban water users.	High	A no Dam situation will require Council to look for alternative options to supply the urban water users. These alternatives are likely to be significantly more costly than Council's share of the Dam. The District will lose the Government's \$55+ million of funding towards a water solution and the joint venture parties contributions will be lost.
Does the decision involve sale of a substantial proportion or controlling interest in CCO?	N/A	The CCO has not yet been established and is not being proposed to be sold through these decisions.	N/A	The CCO has not yet been established and is not being proposed to be sold through these decisions.
Does the decision involve entry into a private sector partnership or contract to carry out the deliver on any group of activities?	Low	Already within a JV partnership. This decision would not change that.	High	This decision would involve the exiting of a JV partnership.
Does the decision involve Council exiting from or entering into a group of activities?	N/A		Moderate	The Dam is an activity proposed to be carried out by Council in the LTP. A no Dam decision would mean Council would be exiting from an activity but not the whole water supply group of activities.

10 Conclusion

10.1 The case for building the Waimea Community Dam remains compelling. A large-scale water augmentation scheme needs to be built if the Council is going to meet its obligation to provide households and businesses with a reliable water supply at least cost in the longer term. The project also enables Council to meet its freshwater management obligations and is critical to the future viability of local industry and rural land users. Without a dam, the water supplies in the area of the District supplied from the Waimea aquifers will fail to meet people's needs now and into the future.



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- 10.2 As unpalatable as the choices may seem, one has to be made.
- 10.3 While the Waimea Dam project may seem large and complex, in reality Council's proposed capital contribution to the project is only about 10% of its Long Term Plan capital works budget over the next 10 years.
- 10.4 The project will not proceed unless the partners (primarily Waimea Irrigators Ltd, Council and Crown Irrigation Investments Ltd) are able to find a solution to closing their share of the funding gap. The case for all of the partners continuing to work together and collaborate on the project is strong. Since the increased costs became known the partners have committed to closing the funding gap.
- 10.5 Council cannot meet its urban water supply needs now and in the future, without water augmentation on the scale that the project provides. Demand control measures, even the most severe, will not reduce demand from households and businesses to the extent that the water allocation rules in the Tasman Resource Management Plan require, if there is no Dam.
- 10.6 The alternatives to the proposed Dam are either more costly; don't provide the same protection against droughts; don't provide for the increase in future demand; or don't meet Council's obligations under the National Policy Statement on Freshwater Management and the National Policy Statement on Urban Development Capacity. Some of the alternatives fail on all counts. The options for industrial and rural water users are also limited if Council decides not to proceed with the proposed dam in the Lee Valley.
- 10.7 Increasing Council's contribution to the project and continuing the collaboration on the Dam delivers the direct benefits needed for less cost than going it alone. As a bonus, the scheme delivers a suite of environmental, social, recreational, cultural and economic benefits that no other option does. To realise those benefits, all the partners, including Council, need to reconsider the limits they previously placed on their contributions to the project.
- 10.8 Even with an increased Council contribution, the project is still the most effective way of meeting the current and future water supply needs of the households and businesses in the area. All of the alternatives carry more risk than the Dam project; most are actually 'unrealistic' and none deliver the same level of water supply security now or in the future or the co-benefits that the project does.

11 Next Steps / Timeline

- 11.1 If Council agrees to proceed with the Dam project, staff will continue negotiations with our joint venture partners to close the funding gap.
- 11.2 Staff will also continue working on the workstreams needed to get the project to financial close.



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Section 2



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12 Statutory Responsibilities

Legal Decision Making obligations

- 12.1 Given the duration, cost and significance of the project, Councillors should have due regard to the legal framework within which their decision making must occur. In particular, consideration should be had to the principles set out in section 14 of the Local Government Act 2002 (LGA), the decision-making requirements of sections 76 to 82, and the prudential financial management requirements of section 101.
- 12.2 The first principle in section 14(1)(a) is to conduct the Council's business in an open, transparent and democratically accountable way and give effect to identified priorities and desired outcomes in an efficient and effective manner. Through successive consultations, the Council has set a course towards a water augmentation scheme to achieve certain objectives. Those objectives remain and the Council's response to the pricing development should be guided by efficient and effective delivery.
- 12.3 The fundamental decision-making obligations in section 76 to 82 are to identify and assess the reasonably practicable options for achieving the objective of a decision and to consider the views and preferences of interested and affected persons (in proportion to the significance). In the present case, the objective of the decision properly before the Council now is to determine how to respond to changed pricing information. In the context of the history of this matter, this has at least medium significance. It certainly does not lend itself to an opportunist, reactive decision that would be irreversible and costly to the overall attainment of the desired outcomes.
- 12.4 The Council's purpose in section 10 LGA includes meeting the current and future needs of communities for good quality local infrastructure in a way that is most cost effective for household and businesses. Good quality means effective, efficient and appropriate to present as well as future circumstances. Network infrastructure is a core service and includes water collection and management.
- 12.5 In a similar vein, section 101(1) requires the Council to manage its general financial dealings prudently and in a manner that promotes the current and future interests of the community.
- 12.6 But the Council has other matters that need to be considered, alongside those relating to financial prudence in its decision-making. If, for example, a Councillor were of a mind to not proceed with the Dam because of a concern about a disproportionate allocation of cost and risk to the Council, the Councillor would need to consider the extent to which such a decision would or would not:
- 12.6.1 meet the current and future needs of the community for a safe and secure future water supply or as the LGA puts it – the need for good quality cost effective local infrastructure, (good quality meaning effective, efficient and appropriate to future circumstances);
 - 12.6.2 achieve Council's community outcomes;
 - 12.6.3 address the key issues for the community that were identified in Long Term Plan including water supply resilience;



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- 12.6.4 enable the Council to actively cooperate with other councils and bodies to achieve its priorities and outcomes;
 - 12.6.5 deliver on Council's infrastructure strategy;
 - 12.6.6 maintain and enhance the natural environment;
 - 12.6.7 constitute a sustainable development approach especially taking into account the needs of future generations;
 - 12.6.8 enable Council's obligations under both the National Policy Statement (NPS) on Urban Development Capacity and the NPS for Freshwater Management (NPSFM) to be met; and
 - 12.6.9 be consistent with Council's strategic direction – leadership, service, decisions that enable.
- 12.7 This is not an exhaustive list but Councillors will immediately see the tension that exists between the role of the Council in decision making and what many people may say to Councillors that it should be. While Councillors must have regard to the views of their communities and take account of their diversity and interest, this issue cannot be resolved by a popular community vote.
- 12.8 Councillors have made a declaration to make decisions impartially and according to the best of their skill and judgment, in the best interests of the whole District. This requires the exercise of prudential judgment on the information before them, in a manner that promotes the current and future interests of the community.

Conflicts/Interests

- 12.9 The Councillors are reminded that they must be careful to maintain a clear separation between their personal interests and their duties as a member of the Council, so as to ensure decisions are made free from bias (whether real or perceived).
- 12.10 The Councillors should remain mindful of (and satisfied of their compliance with) the statutory and common law principles relating to conflicts (both pecuniary and non-pecuniary). A thorough summary of the general legal framework with respect to Conflicts of Interest has previously been articulated in detail to the Councillors in the presentation by Jonathan Salter and James Winchester of Simpson Grierson on 24 October 2017 and was reiterated by Jonathan Salter on 1 February 2018.
- 12.11 In the interest of openness and fairness, the Councillors are encouraged to take a cautious approach to conflicts of interest.
- 12.12 The Councillors are respectfully referred to Standing Order 19.7 (Financial Conflicts of Interest) and 19.8 (Non-financial Conflicts of Interest) for the relevant rules for the conduct of the meeting on 28 August 2018. For the avoidance of doubt, where a Councillor decides that they have a conflict of interest, they must:
- 12.12.1 Declare that they have a conflict of interest when the matter comes up at the meeting;
 - 12.12.2 Refrain from discussing or voting on the matter;



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- 12.12.3 Leave the table when the matter is considered (and note where there is a financial conflict, they may also need to leave the room); and
- 12.12.4 Ensure that their declaration and abstention is recorded in the minutes.

Significance and Engagement

- 12.13 Council is of the view that:
 - 12.13.1 A decision to proceed to financial completion would not be considered a decision 'to alter significantly the intended service level provision for any significant activity' as envisaged by s.97(1)(a) LGA. The practical consequence of this is that a mandatory amendment to the Long Term Plan would not be required.
 - 12.13.2 A decision not to continue to financial completion would constitute a decision 'to alter significantly the intended service level provision for any significant activity' as envisaged by s 97(1)(a) LGA. This would require a Long Term Plan amendment, and that in itself, would need to be the subject of consultation. In this event, any consultation on this Long Term Plan amendment would be moot, since the consultation could not properly occur (and the results collated and considered) before the expiry of the 'drop dead date' for financial close.

The Council's Role as the Regulatory Authority

- 12.14 Regard must be had to Council's obligations under the Resource Management Act 1991 (RMA). The RMA covers, amongst other things, water management and water use (how it is taken, used, dammed or diverted). The RMA sets out requirements that Council must meet with regard to water management and use, processes it must follow, and things that it must consider when making decisions.
- 12.15 Central Government has a role in that it is responsible for making regulations that councils must implement. It also provides direction for water management through national policy statements, such as the NPSFM that councils must implement.
- 12.16 The NPSFM aims to safeguard healthy rivers and requires Council to avoid over-allocation of water quantity, and phase out existing over-allocation by reviewing permits and setting take limits as environmental flow regimes and allocation limits, using defensible approaches that include integrating surface and groundwater dynamics.
- 12.17 Under the NPSFM over-allocation means not meeting the management objectives set to sustain the values established for the water body. Under this meaning, the Waimea plains zones are substantially over-allocated despite the modest objectives and standards set in TRMP provisions.
- 12.18 The current government has signalled through the media that it intends to amend the NPSFM in the near future to strengthen the quantity allocation requirements among others; but at present there is no detail on this. Even without setting further national policy requirements, the development of freshwater limit-setting practice and associated case law around New Zealand is almost certain to drive an expectation that in the event of no dam or other substantially effective water augmentation, the response required to reduce over-allocation is still substantial by any measure.
- 12.19 The implications of not progressing with the Dam are:

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- 12.19.1 The Council would be expected to withdraw the current plan change 67 which seeks to delay the implementation of the 'no dam' provisions of the TRMP by one year (1 November 2018 to 1 November 2019).
- 12.19.2 The Council would have to release the decisions on the 329 water permits on the Waimea Plains on the basis of the 'no dam' TRMP provisions and following the results of the bona fide reviews. This will result in reductions in pre-plan change allocations as shown in the following table.

Percentage of permits affected (number of permits affected)	Percentage of reduction in current allocation
4% (14)	100%
13% (43)	50%-99%
34% (112)	20%-49%
27% (88)	1%-19%
22% (72)	No change

- 12.20 However, overall the bona fide review only managed to reduce over-allocation by 27.2% and the reduction target from the 2013 allocations required in the TRMP is 42%. If the Council were to manage the water system to achieve the 800 l/sec target minimum flow for about a 10 year security of supply with restriction, permits would have to be cut back by this amount.
- 12.20.1 To give effect to the National Policy Statement for Freshwater Management (NPSFM), the Council would be expected to move to resolve any inconsistency around minimum flow by way of a plan change. Given the 800 l/sec standard is only about 36% of the Mean Annual Low Flow (7-day MALF), the Council may come under pressure to change the TRMP to ensure compliance with the NPSFM. There may be other drivers for a plan change which will come with significant litigation risk either way.
- 12.20.2 Implementation of the new permit allocations, together with the new rationing restrictions which will come in earlier than in the past, will severely impact on water users in the event of a dry summer. Based on past trends, water users will be subject to 50% cuts for between five and 104 days each year (average 28 days/year). This would impact the smaller more vulnerable extractors.
- 12.20.3 The Council will likely have to allocate more resources to monitoring and enforcement as water abstractors seek to optimise use of scarce water over summer. There is an existing history of over-takes during restrictions, and this will only increase. The Council will have to take enforcement action to ensure compliance.

The Council's role as Community Water Supplier

- 12.21 The challenges of not having the Dam as a water augmentation solution is summarised as follows. They would apply until an alternative water augmentation solution is commissioned. They would affect over 20,000 residents in Brightwater, Richmond, Redwood Valley and



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- Mapua (around 40% of the District's population), as well as many commercial enterprises, and our customers in Nelson South.
- 12.22 The Council, as community water supply authority, during rationing will have to achieve a 25% cut based on the previous eight years usage rates, at the same time other permit holders are under rationing of 50%. This is expected to occur nine out of every ten years.
- 12.23 The Council will have to impose restrictions on our customers in order for us to comply (Public Water Supply Bylaw currently undergoing consultation). The actual reductions required from our customers will need to be proportionally higher than the percentage reduction required by the Council. This is due to recent growth in water demand and because non-revenue water makes up a portion of the water in our system.
- 12.24 In the worst case scenario, when Stage 5 rationing is in force, our customers would only be allowed water for essential human and animal health and safety. In these circumstances, many businesses may not be able to continue operations. The impact of these restrictions on our community and its economic well-being would be widespread, and should not be underestimated. As noted in previous reports, Stage 5 rationing would have occurred in five out of the last 18 years, or 28% of years, had the "no dam" TRMP rules applied.
- 12.25 Urban development would be confined to the 2013 residential zoning envelope in Richmond, Brightwater and Mapua. Until the Council commissions a water augmentation solution it will not be able to plan for future growth. The Council will also need to consider whether it ceases development of land with a deferred zoning for water services (including the recently advertised land at Brightwater). This would be contrary to our obligations under the RMA and National Policy Statement on Urban Development Capacity to provide adequate land to meet housing and business needs. It will also undermine future expected development contributions and rates income from development currently embedded in the Long Term Plan.
- 12.26 The Council will not be able to connect any new industry that uses more than 15m³ of water per day.
- 12.27 The Council will likely have to allocate more resources to monitoring and enforcement of water use during periods of rationing. There is an existing history of over-takes during restrictions, and this will only increase. The Council will have to take enforcement action to ensure compliance.
- 12.28 The Council will have to find an alternative supply option to cope with the risk of restrictions as well as catering for increased urban demand. The Council will have to reconsider the supply of water to Nelson City (Nelson South and the industrial area) as provided for in the current supply agreement if it meant a denial of water to Tasman residents. This currently provides around \$1 million in revenue per year to the Council.

13 Waimea Community Dam – Overview of the Dam Deliverables

- 13.1 The proposed Dam will provide water to ensure the health of the Waimea River and provide long term water security for community, industrial, commercial and irrigation needs on the Waimea Plains. It is a "joined up" solution intended to meet a wide range of water needs and



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address over allocation of the water resource on the Plains (and the resulting impact on the environment) – at the least cost to our community.

- 13.2 The need for some kind of augmentation to address over-allocation on the Waimea Plains has been identified for some decades with early water storage studies going back to the 1970's. The Dam proposal is the culmination of decades of work, studies and research in various fields that have determined that this is the most effective and feasible solution available for our community. This work has also addressed the various technical and environmental challenges needed to construct and operate the Dam. The Dam is consented, designed, has a known construction price, and potential risks are well understood.
- 13.3 The Waimea Community Dam will provide a very high level of security of supply for abstractive users. While the Dam will hold around 13M m³ of water at any point in time, its effective storage is much higher at around 42M m³. The dam storage is dynamic - it will continually be "refilled" from the catchments above.
- 13.4 The storage in the dam will provide a "60 year" level of drought security for irrigation on the Waimea Plains and for the urban water supplies (Brightwater, Richmond, Redwood Valley, and Mapua) for the next 100+ years.
- 13.5 This means that water rationing would not be needed except in the case of the most severe droughts exceeding, for example, the 2000/2001 year - and this only once the Dam capacity is fully allocated. The level of water security provided by Dam is further improved by the provisions in the TRMP where, in the event of a severe drought the minimum flow in the Waimea River can reduce to 800 l/s. In further extreme droughts and when dam storage level drops below 2M m³, stage one restrictions can be imposed. This would also extend the security of dam supply to beyond the 60 years drought security.
- 13.6 The Dam and the water it provides will provide a number of significant benefits for our community. These are outlined below and present a compelling case for progressing and investing in the Dam on behalf our community.
- 13.7 If the Dam does not proceed, these benefits will be lost. Our community will face more frequent and more severe restrictions. The impact will be significant and felt throughout our community and economy.

Environmental

- 13.8 The proposed Dam enables the Council to increase minimum river flows (at a measuring point above Appleby Bridge) from 800 litres per second to at least 1,100 litres per second. This minimum river flow will provide improved benefits to the instream flora and fauna, recreational users and surrounding environment. Although still to be determined for the Waimea River, it may also be sufficient to meet the requirements set out under the National Policy Statement for Freshwater Management.
- 13.9 The Dam also provides sufficient flow in the River to maintain aquifer water levels and prevent seawater intrusion into aquifers.



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Primary Production

- 13.10 The water needs of most of our primary producers on the Plains will be secured well into the future. The basis of our economy is in primary production and the Dam helps retain the viability of these industries, and the flow on impacts to their employees, contractors, and the wider economy.

Urban water supply

- 13.11 The Dam would meet the needs of the urban water supply for at least 100 years. Rationing in all but the most severe droughts will be unnecessary. We will have sufficient water to accommodate commercial and economic development and service new residential land, as required by the Resource Management Act and National Policy Statement on Urban Development Capacity.

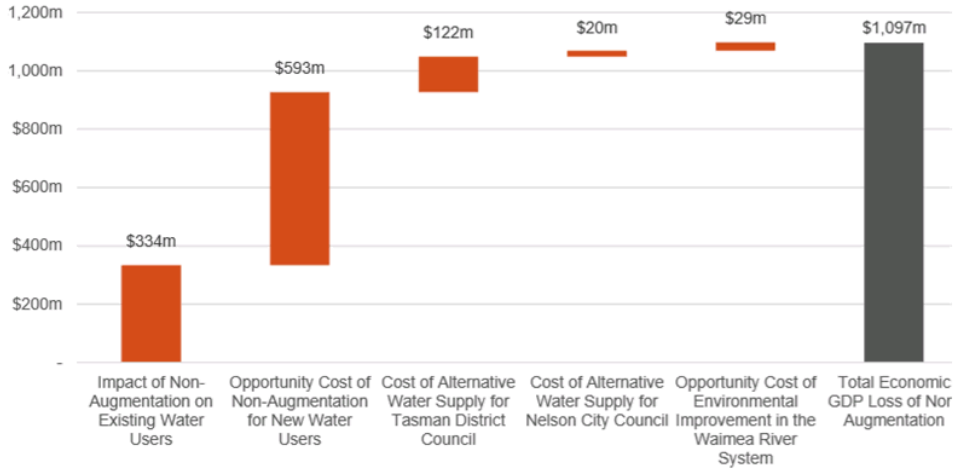
Economic

- 13.12 Water will be the key to the District's future prosperity. The investment in water infrastructure is a priority for our District. It is needed to sustain current use, and it enables growth and provides a return on investment to the Council and others.
- 13.13 Northington and Partners has completed an economic analysis detailing the implications of the not having a Dam (Attachment G). This analysis was updated in August 2018. The report provides a summary of the potential financial and economic impacts on the District of the proposed Waimea Community Dam not going ahead. The estimated total impact of a decision not to proceed with the Dam is assessed as being in the order of \$1100 million.
- 13.14 The Northington report deals with five core impacts arising from a decision not to proceed with the Dam.
1. Impact of Non-Augmentation on Existing Water Users;
 2. Opportunity Cost of Non-Augmentation for New Water Users;
 3. Cost of Alternative Water Supply for Tasman District Council;
 4. Cost of Alternative Water Supply for Nelson City Council; and
 5. Opportunity Cost of Environmental Improvement in the Waimea River System.
- 13.15 Figure 13.15 below illustrates the components that make up the impact on existing and new water users. Between these groups, the cost is \$927m over 25 years or \$37m pa. The impact of the alternative Tasman District Council and Nelson City water supplies totals \$142m and the environmental improvements another \$29m over the period. The conclusion reached is that a decision to not build the Dam will result in a significant negative economic impact on the District.



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Figure 1: Aggregate Cost of Non-Dam Alternative (Mid-Point)



13.16 There is also potential to gain greater economic gains through a potential hydro-power scheme at the Dam, and Council has indicated its intention to progress this option.

Partnership Benefits

13.17 The Dam provides a complete solution for our community. The funding model allows the Council to leverage an extensive central government (\$7m grant and \$10m interest free loan) and private sector (equity \$25-\$28m plus \$25m Crown Irrigation Investments Limited concessional loan and potential Provincial Growth Fund funding) capital investment in the project. This investment will not be forthcoming for any alternative augmented water supply solution, which will cost more. Council's share of the operational costs is estimated at \$862,000 per year, which is 45% of the nearest alternative water supply solution which would be circa \$1.9m per year. For any alternative, Council will also need to repay \$4-5m of costs for the Dam that would have been recoverable through the Joint Venture.

Least Cost Solution

13.18 The economies of scale that the Dam offers lowers the overall costs for our community. The Dam is a solution in the making for over two decades, and has been Council's preferred plan for addressing a range of issues since at least 2012. The Dam is still the most cost effective option (capital and operating costs) for meeting everyone's needs on the Waimea plains – including Council as an urban water supplier. We have investigated a range of alternative options, and in comparison to the Dam they are not cost efficient and do not deliver the range of benefits (i.e. environmental, urban water supply, and irrigation) that the Dam does. The alternatives would provide only an urban water supply solution with capital costs estimated from \$25 million to partially meet present urban water needs, to over \$100 million for our 100 year future required urban capacity.



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14 Tasman Resource Management Plan (TRMP)

Current situation

- 14.1 At present we are still operating under existing conditions with the historical trigger for step 1 rationing applying to permits being 2500 l/s flow at the Wairoa gorge. This rule came with no minimum flow for the Waimea River. Flow management is achieved by the Dry Weather Task Force issuing weekly directions for flow management during dry periods. These consents were issued prior to the Waimea zones TRMP changes (Changes 47, 55, 63 and 67) where by renewed consents, presently on hold, have updated conditions to replace this flow management regime.
- 14.2 The current TRMP situation sees water allocation restrictions for three dam-related scenarios in place now as sleeper rules (they do not apply yet). These provisions were intended to reduce the historical over-allocation in the Waimea Plains and are also to enhance the environmental flow regime. The rules rely on augmentation being provided by the Waimea Community Dam and are the outcome of public planning processes and operative TRMP changes.
- 14.3 These new rules: no-Dam, with-Dam affiliated (buy into the Dam), and with-Dam non-affiliated (don't buy in) are not yet active. They will be first triggered by either a Council No-Dam decision, or by a trigger where the default outcome is that there is no Dam (1 November 2019). The new rules come with new rationing stages which start when the river at the Wairoa gorge gets to 2750 l/s and are designed for a target minimum river flow of 800 l/s at Appleby, below which cease takes will start to apply using set policy criteria in the TRMP.
- 14.4 As part of renewing consents within the Waimea water management zones these new rules have been applied. A primary driver is the need to reduce the over-allocation of the water resource. Bona fide reviews have been done which addresses some of the over-allocation but at present all permit renewals are on hold, waiting for a Dam decision. Once a Dam decision is made, either yes or no, then the applicable set of allocation restrictions will apply through the consent conditions set in the replacement permits i.e. all present water permit restrictions will change.
- 14.5 For the reticulated community water supplies, Richmond, Brightwater, Mapua-Ruby Bay, rural extensions to these and the Redwood Valley rural supply, a no-Dam will trigger a limitation on the Council to only service those connections already in place and those areas zoned urban or deferred urban as at 27 April 2013. So Council's permits would not be able to accommodate extensions to urban areas.
- 14.6 The recent bona fide review of water permits only managed to reduce over-allocation by 27.2% and the reduction target from the 2013 allocations required in the TRMP is 42%. So without a dam there will be pressure to 'fix' this continuing over-allocation.

Is a change to the TRMP an option?

- 14.7 The short answer is no. The current TRMP regime seeks to balance a more sustainably managed water resource alongside enhanced economic production while allowing for urban growth. These benefits are set against the costs of a long term investment in water augmentation of sufficient scale for enhanced security and future demand.



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- 14.8 However the Waimea resource remains significantly over-allocated despite the consent renewal process reducing allocations, while the case for higher minimum flows remains strong. A most likely no-Dam TRMP change would be to seek to reduce the stringency of allocation restrictions or remove reliance on the Dam as the only augmentation solution. Regardless of the purpose or scope for any TRMP change, national policy directives and the RMA planning process would see significant challenge to the current or proposed allocation regime. Staff consider that any change attempt would result in much more stringent limits with substantially less security of access than at present under the existing “no Dam” scenario. Including for community water supplies.
- 14.9 The present rules are essentially an agreed compromise that enabled the many competing interests to all achieve progress. It is important that Council recognises that any TRMP change, from major changes right down to minor tweaks, would be a fully public Schedule 1 process. The process would be out of Council control once it was notified and the outcome would be determined not by Council but by independent commissioners, and following this very likely the Environment Court. Council is conflicted both as a water supplier and as a regulator, so the outcome would be uncertain, long and expensive.
- 14.10 If a TRMP change were proposed to the present TRMP under a no Dam decision, there are some certainties we could expect as part of process:
- 14.11 Greater emphasis would be placed on the requirements of the National Policy Statement for Freshwater Management 2014 (amended in 2017) for sustainable allocation of fresh water resources, requiring reduction of present over-allocation, integrated management, and recognition of Te Mana o te Wai. This includes possible further amendments indicated by the Government to strengthen water quantity management requirements of the NPSFM 2014/2017.
- 14.12 A re-examination of the evidence of the Waimea River’s instream ecosystem values and associated amenity, recreational and tikanga Maori values, their minimum flow requirements, and the risks to these values from low flows, with a likely much higher minimum flow being imposed.
- 14.13 Positions will be taken and may be vigorously pursued through the courts by submitters including the Crown, Department of Conservation, other statutory entities, Maori iwi, WIL or other irrigator collectives, industry groups, businesses, environmental Non-Government Organisations and potentially even ratepayer groups be they water user or environmental guardian.
- 14.14 The process requirements under the RMA (s 32, Schedule 1) to advance any TRMP change would bring into play any or all of the above influences through due process.
- 14.15 Regardless of the purpose for any potential TRMP change, under these external influences the outcome for a change is certain to gravitate in one direction: a substantially more stringent set of water allocation limits for the Waimea Plains zones. The outcome is most likely to be an environmental flow regime with a much higher minimum flow than the current no dam regime (a “minimum flow” of 800l/s but practically with lower flows possible), and more likely be 1300 l/s or higher. With a total allocation limit more likely to be towards 660 l/s than the present 2200 l/s presently consented following the bona fide reviews. Cease takes would be more stringent and the differential providing greater

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security of access for community water supplies, over other water users, would likely to be reduced.

What if an irrigation consent became available for use by Council?

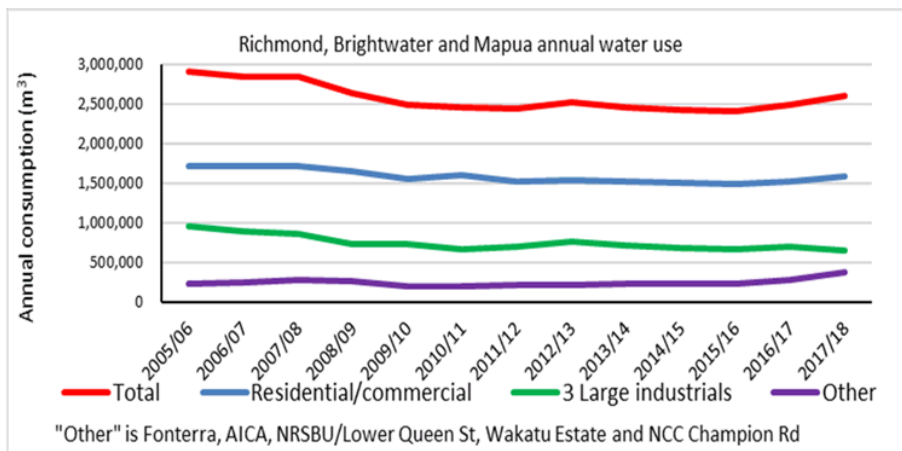
- 14.16 While reallocating present irrigation consents might provide some additional water for community supplies, if Council were able to negotiate access to them (we have no right to demand access), this would not be a panacea to the problem although it might if successfully granted, assist.
- 14.17 Irrigation use is different from community water supply use as it only applies during summer. These consents have all had a bona fide review so their allocation will have been reassessed and likely reduced and this could not be reconsidered under any previous approach exempting Community Water Supplies.
- 14.18 This reallocation for community supply would require a change in use consent to allow it to change from a seasonal irrigation use to a domestic supply which would be assessed based on 365 days maximum use. A localised impact assessment would be required in order to allow for the changed use. It is highly unlikely that any greater annual take would be granted. The allocation would need to be able to sustain increased drawdown on the surrounding users and still allow for present expected recharge capability to protect the existing security of supply expectation of the other users in the locality. Continuous demand does not allow the same capability to recharge as seasonal use does. Any such additional water would still be subject to the same rationing as Council's current permits.
- 14.19 Additionally if the new source was from those aquifers close to the coast, like the Lower Confined Aquifer, there would be added scrutiny due to the risk of continuous pumping over a longer term leading to sustained drawdown below sea level. Potentially exposing the aquifer to increased salt intrusion risk.



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15 Urban Water Supplies

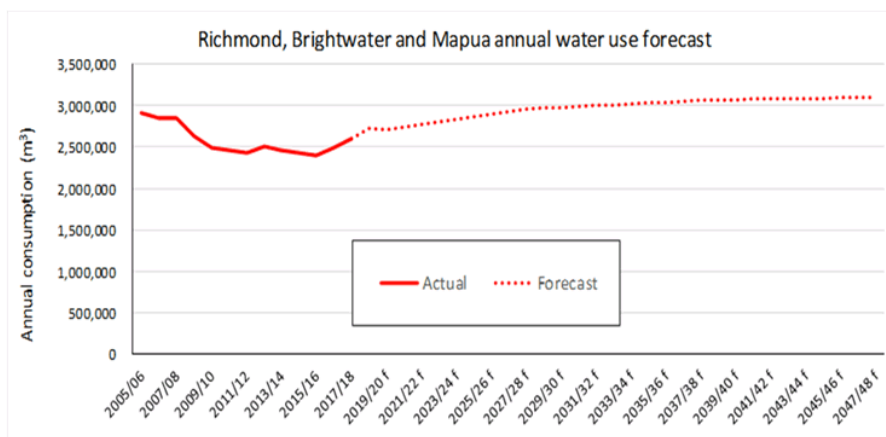
- 15.1 In the Waimea Basin Council provides urban water to 20,000+ people (40% of the District) in Brightwater, Richmond, Redwood Valley, and Mapua. 50% of water used by customers connected to these water supplies is for residential purposes, and 50% for commercial and industrial purposes.
- 15.2 Demand for urban water in these communities dropped away in the late 2000s and was steady for several years. Water use per property had been dropping until recently, which had outweighed the growth in number of connections, so overall water demand fell. Water use per property stabilised a few years ago, so the impacts of growth and development are starting to be felt more with overall water demand growing again.
- 15.3 Figure 15.3 Annual water use by sector since 2005:



- 15.4 Longer term, water demand is expected to grow even with water efficiency and conservation measures in place. Both staff forecasts and an independent 2017 MWH Waimea water demand model forecast steady and sustained growth into the future. In summary, they forecast:
 - 15.4.1 Increases of 10-12% in usage for the next 10 years under high growth.
 - 15.4.2 Increases of 17-19% in usage for the next 30 years under medium growth.
 - 15.4.3 Increases of 32 -118% in peak water demand by 2117 (MWH model only) depending on whether we experience medium or high growth (along with a range of other factors).
- 15.5 Council's subscription in the Dam is for 60,000 m³ per day. This forecast indicates this is adequate for at least the next 100 years.

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15.6 Graph showing 30 year annual demand forecast – all sectors:

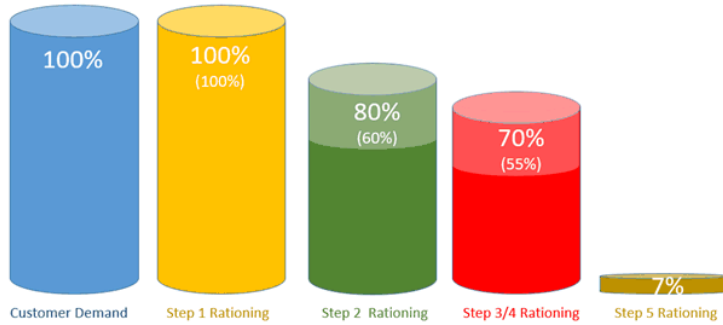


- 15.7 Without the Dam, Council's urban water supplies in Brightwater, Redwood Valley, Richmond, and Mapua are subject to a range of constraints under the TRMP, including rationing almost every summer. The "reduction rules" in the TRMP will generally prevail for rationing stages 1-3 for the urban water consents. These require reductions in abstraction compared to the average level of abstraction of the last eight years for that same week. Stage 1 requires a reduction of 10%, Stage 2 requires a reduction of 17.5% and Stage 3 requires a reduction of 25%.
- 15.8 The impact of these will differ from year to year, but based on drought information since 2000, Council will be subject to Stage 3 rationing nine out of every 10 years. Stage 5 rationing would have occurred in four out of the last 18 years, or around one year in five.
- 15.9 The reductions required by Council translate to a much greater reduction required by our customers, particularly for stages 2-3. This is due to recent growth in water demand and because an element of water use (unaccounted for water) is consumed within the network.
- 15.10 For example, using 2017/2018 summer water demand as a base, the 25% reduction required at Stage 3 by Council translates to an average reduction required by customers of 30-35%. Peak week reductions required by customers can approach 50%. These impacts can be seen for Richmond and Mapua in figure 15.13.
- 15.11 Stage 5 rationing permits Council to extract 125 litres per day per person. This limits Council abstraction to around 2,500 m³ per day for all of our schemes for all uses (commercial and residential). This is less than 20% of average daily demand in summer. The amount of water that can actually be delivered to the customer is even less, due to unaccounted for water.
- 15.12 This presents a major challenge for the urban water supplies and to our customers. Water use will be restricted to essential human and animal health, safety, and sanitation. Many households will struggle with these restrictions and many businesses will not be able to operate. This situation would prevail until the Council provides an alternative water augmentation scheme.



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15.13 Fig 15.13 Translating rationing into 2017/2018 customer restrictions in Richmond and Mapua:

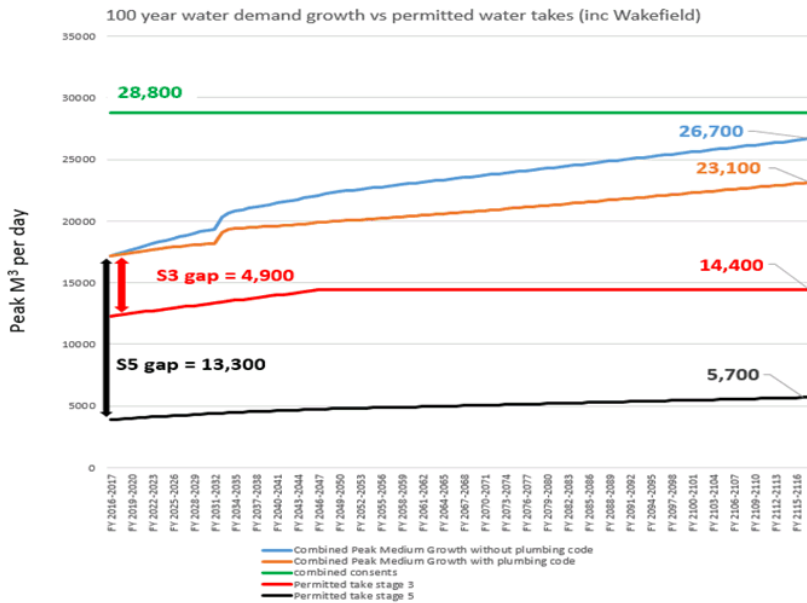


15.14 Rationing under stages 1-3 will get progressively more severe as time passes, requiring greater and greater cuts from the Council and our customers.

15.15 The 2017 MWH model forecast the peak week average daily water gap under the “no dam” TRMP rules for 100 years. The range of estimates are shown in Figure 15.17 for a medium growth future with and without water conservation and efficiency measures for our customers. In this case, Wakefield is included. (Wakefield will need water from the Waimea Community Dam for growth beyond 30 years).

15.16 This clearly shows that the rationing challenge will grow over time.

15.17 Figure 15.17 100 year MWH medium growth water demand forecast vs no dam rationing rules:





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Non-revenue water

- 15.18 Non-revenue water represents the difference between the volume of water delivered into a network and billed authorised consumption. The main components of non-revenue water include pipe breaks and leaks, storage overflows, house connection leaks, metering errors, operational flushing, water theft, billing anomalies and firefighting. There are several factors that contribute to water loss including infrastructure age, network size/distribution, pipe condition, network pressure, installation techniques and standards, and third party influences.
- 15.19 Council continually monitors network water use in various zones, typically overnight usage. Council reports annually on water loss and has two performance measures that assess it. The first performance measure assesses volume and percentage of real water loss for all urban networks. The second performance measure ensures water loss does not exceed 4 as measured by the Infrastructure Leakage Index (ILI). The ranges for ILI are 0-2 (considered low), 2-4 (moderate) and 4+ (high). ILI is considered the industry standard and best practice for reporting water loss.
- 15.20 Council is raising its level of service by continuing to lower the target on water loss. The 2016/17 annual report cites a weighted District average of 21% which is 2.9 ILI. This figure is down from 26% for the previous year (3.7ILI).
- 15.21 Council monitors the weekly system input and compares this to the previous year's usage and actively assesses any changes. We use Scada/telemetry to monitor zone flows which allows us to examine trends and look at night flow rates between 1- 5am providing a clear assessment of the low usage period. Council also optimises pressure zones to reduce the volumes of loss when a leak does occur. Council has an ongoing reactive maintenance budget of \$530,000 per annum for Urban Water Club reticulation.
- 15.22 Council has a \$150,000 annual leak detection programme, which involves using monitoring equipment to locate leaks and assess leakage rates. The amount of leak detection work being carried out has increased in the last few years and will be maintained into the future. Council repairs all leaks that we are advised of through the leak detection programme. In some locations, bulk meters have been installed to allow improved leakage identification to be isolated to a particular zone.
- 15.23 Council has an ongoing capital expenditure budget for pipe and meter replacements. This maintains the integrity of the network. The Urban Water Club Reticulation Renewal budget is \$200,000 over the next 5 years, and increases to \$750,000 in 2023/24 and to \$945,000 in 2028/29 (excluding major separately programmed renewals). The meter replacement programme has \$420,000 budgeted in 2020/21 to replace meters in Brightwater, Mapua and Richmond.
- 15.24 Council could elect to invest additional resources into improving systems maintenance by increasing leak detection and reactive maintenance budgets however, this would add significant operations and maintenance cost and there is a cut off based on benefits. Spot repairs of leaks typically cost in the region of \$2,000-\$10,000 for each instance. Council could also increase capital expenditure on the pipe and meter renewals programme.
- 15.25 It is impossible and unrealistic to eliminate all water loss from a network. A certain level of water loss cannot be avoided from a technical point of view. An aggressive renewals



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- programme could proactively reduce leakage, but the network in Brightwater, Richmond, Mapua, and Redwood Valley is valued at a minimum \$80m. Moreover, even newly constructed networks leak, and the scale of leakage grows over time as the network ages. Consequently, some losses are unavoidable and some leakage is too small or uneconomic to repair. Council must carefully balance the investment costs of reducing water loss, with the amount of water that can be realistically saved. There are diminishing returns and escalating costs.
- 15.26 Critics have argued that Council could solve its water shortage problem by addressing excessive water loss – or even by eliminating it somehow.
- 15.27 To put this into perspective, Richmond currently has 15% water loss which is good by national standards. Brightwater and Mapua have 27% and 26% water loss which is above our targets. If Council were to reduce water loss in Mapua and Brightwater to 15%, it would save 300 m³ of water per day. This is less than 10% of the water average daily water shortage at Stage 3 rationing, and an insignificant amount of water compared to our water shortage at Stage 5.
- 15.28 Even if the Council were able to reduce unaccounted water to zero somehow, it will not address the water shortage, especially at stage 5 rationing. Reducing water loss to zero for Brightwater, Mapua and Richmond would yield a total saving of 1,822 m³/day. This will not address today's needs, or the longer-term water gap challenge presented by growth and development, as seen in Figure 15.17.
- 15.29 Finally, we need to be aware that benefit of any water loss reduction toward addressing our water shortage (however small that contribution may be) will be also be short lived. Water loss reductions will eventually factor into water abstraction records, and therefore lower Council's entitlement to water under rationing in the future.
- 15.30 In short, addressing water leaks responsibly is an important aspect of our network and environment stewardship, but it is not the panacea to our water shortage problems.

16 Urban Water Augmentation Alternatives

Levels of Service

- 16.1 The Council's subscription in the Dam provides up to 60,000 m³ per day (8.4 million m³) of effective storage and is intended to provide a 60 year level of drought security for the next 100+ years for the urban water supply in Brightwater, Richmond, Redwood Valley and Mapua. It also effectively provides 100+ year growth and drought protection for Wakefield, as the Wai-iti dam only provides a nine out of ten year level of drought protection, and only for the next 30 years or so.
- 16.2 This means the Council supply will not be rationed in all but the most extreme droughts (circa 1/60 years). As noted earlier, in these instances, we are likely to be limited only to stage 1 rationing. None of the alternatives for the urban water supply approach this level of water security.
- 16.3 The two key parameters for any drought level of service for alternatives to the Dam are to what extent and for how long they protect against the 'no dam' rules for:



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- 16.3.1 Stage 3 rationing, which is expected most years; and
- 16.3.2 Stage 5 rationing, which is expected less frequently, perhaps once in every years. However, the impact of Stage 5 rationing is extreme.
- 16.4 Several of the options potentially available to Council can help ease the pain of rationing on our community during rationing Stages 1-3, but most are not reliable and will not avoid the need for significant restrictions on our customers nine out of every ten years. The water gap at stage 3 rationing is generally around around 4,900 m³ per day on average, with a peak of around 5,000 m³ per day. As noted earlier in this report, this is forecast to grow.
- 16.5 Most of the alternatives to the Dam considered by Council are completely inadequate to deal with stage 5 rationing. At stage 5 rationing, the vast majority of our water supply needs for Brightwater, Richmond, Redwood Valley, Nelson South and Mapua needs to come from an alternative source. The amount of water needed to supplement our existing sources at stage 5 rationing is in the order of 11,000 m³ on average per day, with a peak of around 13,300 m³ per day.
- 16.6 Only a large scale water augmentation scheme can provide a level of water security against stage 5 rationing for today's customers, or for the future. A scheme that can provide for stage 5 rationing will generally provide some level of water security for earlier stages of rationing.
- 16.7 The two schemes previously considered that could provide some level of security against Stage 5 rationing have been the small dam and the ponds/lake storage. The level of service these provide actually depends on the intensity and duration of the drought – how many days do you spend at different stages of rationing. Moreover, the level of security will also erode as growth occurs. Nevertheless, the examples below give an indication of the levels of service these schemes could provide.
- 16.8 A riverside pond comprising 500,000 m³ storage (400,000 m³ of effective storage) and able to supply 4,000 m³/day would cover Stage 3 restrictions in most drought years at current demand levels – up to 100 days. This is similar to the number of days we would have been in stage 3/4 rationing in 2000/2001 had the 'no dam' rule been in place. Some weeks of peak demand may still require restrictions in the order of 10%. However, this capacity would have been exhausted had the Council then moved to Stage 5 rationing.
- 16.9 A riverside pond comprising 800,000 m³ storage (700,000 m³ of effective storage) and able to supply peak demand of 13,000 m³/day could cover 60 days at stage 3, and a further 40 days at stage 5 rationing without restrictions on our customers. This would have met all our needs in the most severe recent drought (2000/2001) at current demand levels, and could even accommodate some growth.
- 16.10 In reality, the Council will be able to extract more security out of the ponds by imposing some restrictions on our customers to preserve more of the storage capacity for longer.

Early Assessment of Alternatives

- 16.11 Since 1991 Council has been identifying and assessing options for water augmentation for the Waimea Plains. The following is a chronology of investigations undertaken to date;
- 16.11.1 1991 Agriculture New Zealand (MAF) Report – Water Augmentation Options Waimea Basin



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- 16.11.2 2003 Tasman Regional Water Study
- 16.11.3 Waimea Water Augmentation Committee (WWAC)
 - i. 2004 to 2007 - Phase 1 Feasibility Study – this identified 18 sites; Lee Valley Dam identified as preferred option
 - ii. 2007 to 2010 - Phase 2 Detailed Investigation – Lee Valley Dam (Site 11)
 - iii. 2011 to 2014 – Phase 3 Preliminary Design – Lee Valley Dam (Site 11)
 - iv. March 2015 – Resource Consent Granted – Lee Valley Dam (Site 11)
- 16.12 The investigations into the options began in 2004 with the formation of the Waimea Water Augmentation Committee.
- 16.13 More recently (2014/2015), the Council commissioned a high-level assessment of short listed alternatives was undertaken by MWH. This assessment was intended to help better understand our next best alternatives to the Waimea Community Dam for the urban water supply and identify what the most feasible alternatives were for further development. This assessment focused only on providing the urban water supply and ignores the need of the Waimea River.
- 16.14 The summary of the analysis is attached in Appendix A. Key themes that appear through the analysis:
 - 16.14.1 Most options provide insufficient security or reliability. When our normal supply is rationed, there will be constraints on the alternatives.
 - 16.14.2 Most options do not provide adequate flow, even when available. Restrictions still apply most years. At best, they provide stop-gap measures.
 - 16.14.3 Only two options could provide any enduring reliability, security against a major drought, and provide for growth.
- 16.15 The best long term options identified in the report were water storage ponds or a small dam. These have the potential to provide adequate equivalent daily flow to deal with rationing most years as well as a major drought when Stage 5 rationing is in force if they are large enough. An assessment of the pond options is below.

The Level of Demand Required

- 16.16 The potential urban demands were assessed to determine the quantities of water required now and into the future. The urban water areas being considered are Richmond, Mapua, Ruby Bay and Brightwater. The following table outlines the urban water demand under a medium growth scenario and shows the rationing gaps for Stages 3 and 5 of abstraction restrictions in the Tasman Resource Management Plan;

**WAIMEA COMMUNITY DAM PROJECT****Table showing Urban Water Demand (medium growth scenario) and Rationing Gaps**

	Daily 2017 (excl. Wakefield) (m3/day)	Daily 2047 (excl. Wakefield) (m3/day)	Daily 2117 (incl. Wakefield) (m3/day)
Peak Week Daily Demand	15,900	22,000	26,700
Stage 3 permitted take	11,000	12,200	14,400
Stage 5 permitted take	2,600	3,500	5,700
Rationing stage water gaps	2017	2047	2117
Stage 3	-4,900	-9,800	-12,300
Stage 5	-13,300	-18,500	-21,000

Note – the Rationing scenario based on 2000/201 drought

- 60 days at Stage 3 rationing
- 40 days at Stage 5 rationing

- 16.17 This table outlines that the current gap during Stage 3 restrictions is around 4,900 m3/day and for Stage 5 restrictions it is 13,300 m3/day. In the next 29-30 years the gap between demand and supply is likely to increase to 11,800m3/day for Stage 3 restrictions and 20,500m3/day for Stage 5 restrictions. This is based on the current abstraction infrastructure (bores and treatment plant) and resource consents conditions.
- 16.18 Wakefield is considered to have sufficient headroom in water supply capacity to last the next 30 years. This is primarily due to the benefits of the Wai-iti Dam and its ability to increase flows in the Wai-iti River. After 30 years it is expected that Wakefield will also need additional water and it is therefore included in the demands predicted from 2047 onwards.
- 16.19 In considering alternatives to the augmenting the urban supply, it is necessary that we convert the water gap into storage. The following table outlines the storage requirements based on the water gaps outlined in the table above.

**WAIMEA COMMUNITY DAM PROJECT****Table showing Present and Future Water Storage Requirements for each Stage of Restrictions**

	2017 Storage (m3)	2047 Storage (m3)	2117 Storage (m3)
Rationing Stage 3 (60 days)	249,000	601,000	1,153,000
Rationing Stage 5 (40 days)	452,000	697,000	1,064,000
Total (100 days)	701,000	1,298,000	2,217,000
Allowance for Losses	100,000	100,000	100,000
Design Storage	800,000	1,400,000	2,300,000

16.20 The design storage was utilised to determine what any alternatives needed to deliver to meet the urban demands.

Alternatives Assessment

16.21 Over the years since 2004, several of the 18 alternatives originally identified by WWAC have been re-assessed and presented to Council in various forms. The demand requirements, scope and outcomes of these alternatives varied significantly. In June/July 2017 staff reviewed all the reports continuing these alternatives or variances of them. Staff have recast scope and deliverables of each of the alternatives utilizing the urban demand gaps outlined in the tables above. These revised alternatives were presented to Council at its meeting 27 July 2017. Essentially they fall into four categories:

- 16.21.1 Riverside Ponds storage (on banks of Waimea River)
- 16.21.2 Motueka aquifer (piping from Motueka to Mapua/Richmond)
- 16.21.3 Roding River storage (impoundment of Roding River)
- 16.21.4 Teapot Valley storage (impoundment in Teapot Valley)
- 16.21.5 Nelson City Council

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16.22 The following table summarises the outcomes of this July 2017 review.

Table Outlining the Alternative Options, Capital and Operating Costs, Daily Flow and ability to meet water gap for Stages 3 and 5 Water Restrictions

Water Augmentation Options	Storage (m3)	Capital Cost (\$'000)	Opex (\$'000 p.a.)	Daily Flow (m3)	Rationing Stage	Daily Water Gap 2017	Daily Water Gap 2047	Daily Water Gap 2117
Riverside Storage	500,000	\$24,600	\$788	4,000	3	4,900	11,800	22,600
					5	13,300	20,500	31,300
	800,000	\$54,000	\$2,297	13,000	3	4,900	11,800	22,600
					5	13,300	20,500	31,300
	1,400,000	\$84,000	\$3,498	20,000	3	4,900	11,800	22,600
					5	13,300	20,500	31,300
2,300,000	\$108,000	\$5,024	31,000	3	4,900	11,800	22,600	
				5	13,300	20,500	31,300	
Motueka Aquifer	N/A	\$35-\$40,000	\$750	5,900	3	4,900	11,800	22,600
					5	13,300	20,500	31,300
		\$100 - \$120,000	\$1,600	13,000	3	4,900	11,800	22,600
					5	13,300	20,500	31,300
		\$160 - \$200,000	\$2,800	31,000	3	4,900	11,800	22,600
					5	13,300	20,500	31,300
Roding River Storage	4,000,000	\$110,000	\$3,600	30,000	3	4,900	11,800	22,600
					5	13,300	20,500	31,300
Teapot Valley Dam	500,000	\$46,150	\$1,111	4,000	3	4,900	11,800	22,600
					5	13,300	20,500	31,300
Nelson City Council	N/A	\$12-\$14,000	NCC water charges	5,000	3	4,900	11,800	22,600

16.23 Council requested an independent review of three of these alternatives and for the option of utilizing potential surplus from Nelson City Council;

16.23.1 Riverside Pond with Storage 500,000m3 and delivery of 4,000m3/day;

16.23.2 Riverside Pond with storage of 800,000m3 and delivery of 13,000m3/day;

16.23.3 Motueka Aquifer to Mapua delivering 5,900m3/day.

16.23.4 Nelson City Council delivering up to 5,000m3/day.

Review of Alternative Option Estimates

16.24 The scope and quantities of the alternative options have been reviewed. The review incorporated the following assumptions and do differ from what was included in the July 2017 estimates;

16.24.1 Utilised independent specialists on key components of the options, such as riverside pond construction and treatment plant sizing and construction;

16.24.2 The scheduled rates have been on current construction rates;

16.24.3 Preliminary & General plus margins have been calculated at 25% of the construction costs and are reflective of the current construction market;

16.24.4 Construction contingency of 10% is applied to the construction estimate;



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- 16.24.5 Scope risk of 25% has been applied to reflect the fact that they are based on concepts with limited design and reflect the uncertainties at this stage of assessment;
- 16.24.6 The estimates are still reasonably high level and detailed schedule items can only be identified in the design stages;
- 16.24.7 Land values are based on current rating valuations, but we have been advised that these are the lower end of likely land values given the current buoyant market. The land values used are \$120,000/ha.

Riverside Pond Alternatives

Pond Construction

- 16.25 The review of the pond component of the Riverside Pond alternatives was undertaken by Damwatch – a company that specializes in the construction of dams and has been involved in the construction of irrigation schemes and riverside ponds in the Canterbury region.
- 16.26 Damwatch have assumed that the ponds would be located on the right bank of Waimea River upstream of Appleby Bridge. They have noted that these ponds are indicatively located on the riverside of the stop bank. The ponds would therefore act as an impediment to flood flows and as a result cause backing up of flows in the river. This aspect would need to be considered in the final siting of the ponds.
- 16.27 The scope of work for the ponds assume 5m water depth, 1.0m excavation and 5.0m high embankment heights. Within the ponds this provides for a 5m depth of water and 1m freeboard between top water level and embankment crest. No allowance for dead storage at the bottom of the pond has been made at this stage. The width of the embankment crest and slopes is assumed to be 5m crest width, 1V:3H inside slope and 1V:2.5H outside slope. The ponds to be fully lined with an HDPE liner.
- 16.28 The available area of pond is limited by the present river bank and stop bank. This is an area of approximately 170,000m² although the useable area may be less than this. This area restricts the size of pond that can be built and it may not be possible to build the larger 800,000m³ storage pond. The restraint on the depth of excavation due to groundwater may make a cut and fill balance of the materials for the embankments difficult with potentially insufficient material to form embankments of 5m in height. However, there may be alternative sources of material close by that could be used.
- 16.29 The cost estimates have been made based on costs from other larger ponds of the same design. These costs are compared with the combined cost of the reservoir construction earthworks and reservoir structures for both options. It is assumed that;
- All material can be won from within the pond area (this may mean that the depth of excavation needs to be deeper than 1m).
 - No costs have been included for river erosion protection, which may be needed.
 - Preliminary and General, margins and contingency not included.
 - The following table summarises the costs of the reservoir construction earthworks and reservoir structures that Damwatch prepared for Council.

**WAIMEA COMMUNITY DAM PROJECT****Table Outlining the variation in Costs Estimates for Riverside Pond construction compared to July 2017 Estimates**

Storage	July 2017 Estimate	August 2018 Estimate	% Difference
500,000m ³	\$4.42M	\$3.48M	79%
800,000m ³	\$7.07M	\$5.57M	79%
Cost/m ³ storage	\$8.84/m ³	\$6.96/m ³	

- 16.30 There is a difference in costs of about \$1.0 million for the smaller pond and \$1.5 million for the larger pond. The July 2017 estimates may have allowed river protection works and these could easily be of this order of cost.
- 16.31 The above costs without the river protection works equate to a storage cost rate of about \$7/m³ compared with \$9/m³ in the July 2017 estimates.
- 16.32 Damwatch has indicated that the values derived from its experience on the construction of other ponds is that the rate is of the order of \$5.00–\$5.50/m³ of storage for unlined ponds. However a more detailed design and refined estimate of quantities and costs could reduce the overall cost to below the estimated of \$7/m³.

Reticulation and Treatment Plant

- 16.33 Council is currently undertaking reticulation construction and treatment plant upgrades as part of its normal project delivery programme. Stantec were requested to review the estimates for the treatment plant component and Council staff undertook a review of both the reticulation and treatment plant components of the estimates.
- 16.34 Stantec has confirmed that for small to mid size water treatment plants the direct capital cost is around \$1.0 million per 1000m³/day with additional cost for treatment of algae. The allowance for algae treatment is relatively small part of the overall treatment cost. Approximately \$375,000 is considered appropriate to treat algae for a 4000m³/day plant and \$3.0 million for a 13,000m³/day plant. Stantec comments that the allowance for the treatment of algae for the 4000m³/day plant could be under-estimated so an increase maybe prudent. At this stage we have left it at \$3.0 million.
- 16.35 It is probable with this scheme that the water will be retained in the reservoirs for long periods during warm weather so algae is likely to be a problem. More so where the storage is relatively shallow and when raw water has nutrients in it that will promote growth.
- 16.36 The aim in the first instance is to minimise algae growth through raw water quality management and reservoir mixing. Chemical dosing for algal blooms is generally not preferred and is an action of last resort. The aim is not the break up the algae cells as this leads to odour and taste problems in the water supply.
- 16.37 Removal of algae intact through treatment processes such as pre-screening and dissolved air flotation followed by sand or membrane filtration would then be the usual choice for treatment. Having ancillary processes to manage taste and odours such as advanced oxidation and activated carbon would need to be considered depending on the likely frequency, type and extent of algal blooms.

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16.38 Ultrasonic control maybe another option to manage algal blooms but we are unsure of its effectiveness in shallow reservoirs. It is reported to provide some suppression of algal growth. This option could be considered in more detail but at this stage Stantec does not believe there will be any significant savings on algae treatment as the risk of algal blooms and associated taste and odour will still apply.

16.39 The estimates for the alternatives are summarised as follows;

16.39.1 Riverside Pond with 500,000m3 Storage and delivery of 4,000m3/day

	Aug 2018	July 2017
• Reservoir Construction	\$ 3,480,000	\$ 4,420,000
• Riverside Bores & Pipework	\$ 526,000	\$ 400,000
• Pump & Watermain to WTP	\$ 2,607,000	\$ 3,172,000
• Power Supply/Scada to Reservoir site	\$ 80,000	\$ 80,000
• Water Treatment Plant (4,000m3/day)	\$ 4,375,000	\$ 4,375,000
• P&G & Profit Margin (25%)	\$ 2,767,000	\$ 1,245,000
• Contingency (10%)	<u>\$ 1,384,000</u>	<u>\$ 1,369,000</u>
Construction Total	\$15,219,000	\$15,061,000
• Land Purchase and Survey (16 ha)	\$ 2,020,000	\$2,150,000
• Professional Fees	\$ 1,991,000	\$1,930,000
• Consents	\$ 140,000	\$ 140,000
• Project Management and Delivery	\$ 395,000	\$ 386,000
• Scope Risk (25%)	<u>\$ 4,941,000</u>	<u>\$ 4,917,000</u>
Total Estimate	\$ 24,706,000	\$24,584,000

16.39.2 Riverside Pond with 800,000m3 Storage and delivery of 13,000m3/day

	Aug 2018	July 2017
• Reservoir Construction	\$ 5,570,000	\$ 7,072,000
• Riverside Bores & Pipework	\$ 927,000	\$ 680,000
• Pump & Watermain to WTP	\$ 4,830,000	\$ 5,220,000
• Power Supply/Scada to Reservoir site	\$ 128,000	\$ 80,000
• Water Treatment Plant (13,000m3/day)	\$16,000,000	\$16,000,000
• P&G	\$ 6,864,000	\$ 2,905,000
• Contingency (10%)	<u>\$ 3,432,000</u>	<u>\$ 3,196,000</u>
Construction Total	\$ 37,751,000	\$35,153,000
• Land Purchase and Survey (32 ha)	\$ 3,940,000	\$ 3,330,000
• Professional Fees	\$ 5,036,000	\$ 3,815,000
• Consents	\$ 160,000	\$ 160,000
• Project Management and Delivery	\$ 993,000	\$ 849,000
• Scope Risk (25%)	<u>\$ 11,970,000</u>	<u>\$10,827,000</u>
Total Estimate	\$ 59,850,000	\$54,134,000

**WAIMEA COMMUNITY DAM PROJECT****Motueka Aquifer to Mapua Option (5,900m³/day)*****Reticulation and Treatment Plant***

16.40 Council is currently undertaking reticulation construction and treatment plant upgrades as part of its normal project delivery programme. Stantec were requested to review the estimates for the treatment plant component and Council staff undertook a review of both the reticulation and treatment plant components of the estimates.

16.41 Stantec has confirmed that for small to mid size water treatment plants the direct capital cost is around \$1.0 million per 1000m³/day.

16.42 This option comprises

Motueka Aquifer to Mapua with delivery of 5,900m³/day

	Aug 2018	July 2017
• Bores for extraction	\$ 270,000	\$ 270,000
• Treatment Plant (5,900m ³ /day)	\$ 5,900,000	\$ 6,500,000
• Storage tanks (2 x 10,000m ³)	\$ 8,600,000	\$ 2,000,000
• Pumps and Pump Building	\$ 1,106,000	\$ 913,000
• Water main (18km of 350mm dia)	\$12,600,000	\$11,900,000
• P&G	\$ 7,119,000	\$ 2,158,000
• Contingency (10%)	<u>\$ 3,560,000</u>	<u>\$ 2,374,000</u>
Construction Total	\$ 39,155,000	\$26,115,000
• Land Purchase and Survey (1,000m ²)	\$ 130,000	\$ 130,000
• Professional Fees	\$ 4,627,000	\$ 3,086,000
• Consents	\$ 150,000	\$ 850,000
• Project Management and Delivery	\$ 881,000	\$ 604,000
• Scope Risk (25%)	<u>\$ 11,236,000</u>	<u>\$ 7,696,000</u>
Total Estimate	\$ 56,179,000	\$38,481,000

Operating Costs

16.43 The operating costs for each of these options have also been reviewed. It has been assumed that the alternative options would only be fully operational during the 100 days of drought (60 days at Stage 3 rationing and 40 days at Stage 5 rationing). There is also an allowance for ramping up the treatment plant in readiness for full production and then ramping it down again at the end of the drought.

16.44 The Riverside Pond 500,000m³ option only delivers 4,000m³/day so it is assumed that it would operate at this level for the full 100 days. Should Step 5 rationing be implemented then even with this is operating there will still need to be some restrictions as the 4,000m³/day will not fill the gap in demand.

16.45 The Riverside Pond 800,000m³ option delivers 13,000m³/day so it is assumed that it would partially operate over the 60 days of stage 3 rationing but operate at full capacity for the 40 days of stage 5 rationing. Some restrictions may still need to be applied in the event that the demand exceeds the delivery capacity of 13,000m³/day.

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16.46 The Motueka Aquifer Option delivers 5,900m³/day to Mapua. It is assumed that this would operate at full capacity for 100 days of the year and may operate at lesser capacity at other times.

16.47 The operational costs are outlined as follows:

	Riverside Pond (500,000m³)	Riverside Pond (800,000m³)	Motueka Aquifer (5,900 m³/day)
Treatment Plant	\$ 269,600	\$698,100	\$157,600
Pumping	\$ 6,180	\$ 16,481	\$255,300
Riverside Bore Pumping	\$ 28,000	\$56,000	N/A
Maintenance	\$150,000	\$250,000	\$195,000
Depreciation, Rates, Insurance, Administration	\$280,000	\$900,000	\$300,700
Totals (\$/yr)	\$733,780	\$1,920,581	908,600

Nelson City Council Alternative

16.48 The Nelson City Council has confirmed that it could only provide Tasman District Council up to 5,000m³/day. Previously it indicated 5-10,000m³ per day could be available, however until the primary clarifier is installed in 2029/30 more than 5,000m³/day is not possible.

16.49 The details of this option are outlined in Attachment D.

16.50 If the Tasman District Council wanted to utilise up to 5,000m³/day that could be available from the Nelson City Council it would probably need to consider providing some investment to implement specific upgrades sooner. The likely investment required would be;

Maitai duplicate pipeline pump station upgrade	\$2.0 million
Second clear water reservoir at Tantragee Water Treatment Plant	\$1.0 million
Tantragee WTP pumps/pH correction/general plant upgrades	\$1.0 million
Install new reticulation Suffolk Road, Stoke Main Road Stoke	\$3.0 million
Install new reticulation Main Road, Stoke	<u>\$6.0 million</u>
Total	\$13.0 million

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16.51 The Nelson City Council has indicated that it cannot make more than 5,000m³/day available at this stage. If the Tasman District Council needed up to 10,000m³/day then it would need to convince the Nelson City Council with a value proposition. Council would probably need to not only invest \$13.0 million in the infrastructure outlined above, but also offer some sort of investment in the other major upgrades identified and not yet funded by the Nelson City Council. These are outlined and are summarised as follows;

Primary Clarifier at the Tantragee WTP	\$18.0 million
Upsizing the Suffolk Road Hill Street North Link	\$ 1.0 million
Total	\$19.0 million

Comment

16.52 The Nelson City Council has invested in its water supply including investing in the Maitai Dam. It is well within its rights to not allow permanent access to additional water as it needs to protect its future. From a regional and resilience perspective placing reliance on Nelson City Council to augment the water supply to Richmond and beyond is not sustainable. Additional augmentation will be required at some time in the short to medium term

Comparison with July 2017 Estimates

16.53 The following table compares the current estimates with the July 2017 Estimates.

Table comparing current estimates to July 2017 Estimates

	July 2017 Estimate	Aug 2018 Estimate	Operating Estimates
Riverside Pond (500,000m ³)	\$24,600,000	\$24,706,000	\$733,780 per year
Riverside Pond (800,000m ³)	\$54,000,00	\$59,850,000	\$1,920,581 per year
Motueka to Mapua (5,900m ³ /day)	\$38,500,000	\$59,850,000	\$893,700 per year

Comparison with Waimea Community Dam

- 16.54 The Waimea Community Dam is currently costed at \$102.171 million.
- 16.55 As outlined in the financial sections of this report, the portion of this cost that is allocated to Council totals \$38.6 million. Approximately \$16.30 million is allocated to the urban water account and \$22.300 allocated to public good and essentially covers the environmental component of the project.
- 16.56 The following table summarises the capital and operating costs of the urban water alternatives. It also outlines the daily flow each of the alternatives deliver to the urban supply and whether they meet the water gap requirements already derived.



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Table Comparing the Capex, Opex and Daily delivery outputs for each of the Urban Water Alternatives

Water Augmentation Options	Storage (m3)	Capital Cost (\$'000)	Opex (\$'000 p.a.)	Daily Flow (m3)	Capital Cost/Daily Flow (\$'000/m3/day)	Rationing Stage	Daily Water Gap	Daily Water Gap	Daily Water Gap
							2017	2047	2117
Riverside Storage	500,000	\$24,700	\$734	4,000	6.17	3	4,900	9,800	12,300
						5	13,300	18,500	21,000
	800,000	\$59,900	\$1,921	13,000	4.61	3	4,900	9,800	12,300
						5	13,300	18,500	21,000
	1,400,000	\$84,000	\$3,498	20,000	4.2	3	4,900	9,800	12,300
						5	13,300	18,500	21,000
2,300,000	\$108,000	\$5,024	31,000	3.48	3	4,900	9,800	12,300	
					5	13,300	18,500	21,000	
Motueka Aquifer	N/A	\$54,200	\$894	5,900	9.19	3	4,900	9,800	12,300
		\$100 - \$120,000	\$1,600	13,000	8.46	5	13,300	18,500	21,000
						3	4,900	9,800	12,300
		\$160 - \$200,000	\$2,800	31,000	5.81	3	4,900	9,800	12,300
						5	13,300	18,500	21,000
Roding River Storage	4,000,000	\$110,000	\$3,600	30,000	3.67	3	4,900	9,800	12,300
Teapot Valley Dam	500,000	\$46,150	\$1,111	4,000	11.54	3	4,900	9,800	12,300
Nelson City Council	N/A	\$13,000	NCC water charges	5,000	2.6	3	4,900	11,800	22,600
Waimea Community Dam	Urban	\$16,300	\$714	21,000	0.78	3	4,900	11,800	22,600
	Environmental	\$22,300				5	13,300	18,500	21,000
	Combined	\$38,600				1.84			
2018 Revised Estimate									

- 16.57 The table also includes a column which calculates the investment for every 1.0 m3 of urban water delivered per day for the life of the option. The most expensive option is the Teapot Valley dam option which costs \$11,540 per m3/day. The Nelson City Council option requires an investment of \$2,600 per m3/day to obtain the up to 5,000m3/day
- 16.58 The first two Riverside Storage options (500,000m3 and 800,000m3) have investments of \$6,170 and \$4,610 per m3/day respectively.
- 16.59 The Waimea Community Dam can allow up to 60,000 m3/day to be abstracted to meet the urban water supply demand. For this exercise we have used 21,000m3/day as it is the expected water gap in 2117 for medium growth. Using the 21,000m3/day figure means that the Waimea Dam has an investment of \$780 per m3/day for the urban delivery of up to 21,000m3/day.
- 16.60 If the environmental is combined with the urban water then the investment for both is \$1,840 per m3/day. This investment is still more cost-effective than all the other alternatives and it also provides the environmental benefits as well. The other alternatives do not provide this benefit other than providing abstraction relief.
- 16.61 If the urban water 60,000m3/day allocation was utilised in the calculation the investment would drop to \$643 per m3/day for both urban water and the environmental benefits.
- 16.62 The Riverside Pond Option A (500,000m3 Storage) could be discounted as not being the most cost-effective option for delivering 4,000m3/day for an investment of \$24.7 million. The Nelson City Council option provides up to 5,000m3/day which is a similar level of service for an investment of up to \$13.0 million. Both of these options only meet Stage 3 restrictions now and do not provide security for Stage 5 restrictions. The Riverside Pond



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Option B (800,000m³ Storage) provides better security in the short to medium term and therefore it is considered as being the preferred of all the alternative options.

- 16.63 The smaller storage of 500,000m³ and delivery of 4,000m³/day is not likely to sufficiently mitigate rationing for urban and industrial users. Although it could meet the current demand gap during Stage 3 restrictions, it is likely that some form of rationing will occur concurrently. This option is therefore not considered viable for the associated investment of \$25 million. The Northington Report August 2018 reaches a similar conclusion.
- 16.64 This analysis indicates that even with the environmental benefits included, the Waimea Community Dam has an investment profile of between \$643 per m³/day and \$1,840 per m³/day. This is compared to the Riverside Pond 800,000m³ storage option of \$4,610 per m³/day. Therefore, an investment of \$38.600 million delivers far more benefits over a much longer period than \$59,900 million for the Riverside Pond Option with 800,000m³ storage and only delivering up to 13,000m³/day.

Water Tanks

- 16.65 Attachment 3 provides an analysis comparing the value proposition of individual water tanks compared to the WCD. The conclusion of this analysis that water secured from the Waimea Community Dam is a much lower cost option for our customers when compared to tanks – and will provide a level of security many times greater.
- 16.66 The average cost of providing a basic tank system per customer connected to Council's water supply is estimated conservatively at \$5,000. This compares to around \$1,350 for the WCD if the urban water club's proposed contribution of \$11.5m (net) to the WCD is shared among those same customers. For a lower cost, the amount of water stored and available for use by the WCD will be 20 to 60 times the amount of water available by the tank scheme.
- 16.67 The tank systems used in this analysis will not address our water shortage. Tank systems can be developed to provide a greater level of security or use, and/or can fit the constraints of existing sites and smaller sites, but are significantly more expensive than that used in the analysis.
- 16.68 Requiring new developments to install tanks will address only a portion of new demand and will not offset existing demand. In practice, a wide scale urban tank scheme for all customers is going to be difficult to implement, and it may take decades to approach the level of impact contemplated in the analysis above.
- 16.69 At Stage 5 rationing, no urban tank system will provide a meaningful benefit to businesses, households, or the water supply network or stave off restrictions limiting urban water supply to essential human health only.
- 16.70 The cost of the Waimea Community Dam to our customers is lower than tanks in any configuration, even if we significantly increase our contribution to the Waimea Community Dam or use larger tanks. The Waimea Community Dam provides security for all business and household water uses including potable supply, provides for growth, protects against extreme drought, and protects our environment. In short, the Waimea Community Dam provides large-scale storage and economies of scale that tanks cannot match. Our community will get less and pay more with any tank scheme.

**WAIMEA COMMUNITY DAM PROJECT****17 Risk Identification, Assessment and Treatment****Project Estimate and Fixed Price Component**

17.1 The Total Project Cost is currently estimated at \$102.171 million. The following table outlines all the work streams within the project and the estimated cost of each work stream.

17.2 The right hand column of the table contains the remaining value of work within each work stream that contains either measure and value items, or items that have not been fixed or committed. The total of these values make-up \$22.084m.

17.3 Table showing the value of work that has not been committed or fixed price:

	Estimated Final Cost (\$m)	Value not committed and not fixed price (\$m)
1. Procurement, ECI Phase, Design, Project Office	\$6.092	\$2.104
2. Land	\$3.216	\$0.424
3. Governance & Company	\$1.603	\$1.470
4. Dam Construction	\$68.114	\$9.067
5. Site Access, Clearing, Roding	\$4.183	\$0.0
6. Escalation/Inflation Allowance	\$3.266	\$3.266
7. Waimea Water Risk Allowance	\$6.546	
8. Waimea Water Contingency Allowance	\$2.000	
9. Construction Related Professional Services	\$4.709	\$4.644
10. Consent Compliance	\$1.122	\$1.109m
11. Sunk Costs	\$1,320	\$0.0
Totals	\$102.171	\$22.084

Note – The estimate of \$102.171 assumes we will achieve financial close by 15 December 2018, with construction mobilisation following immediately for works to commence in January 2019.

Risk and Contingency

17.4 The Early Contractor Involvement (ECI) process has delivered significant certainty in the construction component of the project. The current project estimate of \$68.114 million has \$59.084 million of fixed prices. Prices that the contractor is to be paid and not subject to further increase.

17.5 The Waimea Water Risk Allowance (\$6.546m) and Waimea Water Contingency Allowance (\$2.000m) components have been assessed in detail. The background, detail and outcomes of the assessments are outlined in the following sections.



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Risk

- 17.6 A Risk Register was developed early in the ECI process. Most of the risks identified were treated during the development of the construction methodology.
- 17.7 Each risk was allocated to the entity that could manage it most appropriately. Consequently there are risks allocated to Waimea Water and risks allocated to the contractor (FHTJV). The FHTJV risks are primarily risks related to construction and are included in the construction price.
- 17.8 The risks and associated allowance that have been allocated to Waimea Water are:
- **Flood Risk** – a flood risk model was developed during the ECI process to estimate the likelihoods and related costs of flooding during construction. Flood insurance has been included to cover large flood events. The insurance has a deductible (excess) of \$200,000 per event. The allowance of \$1.670m covers the costs of repairing flood damage for events less than \$200,000. It also covers the cost of the deductible on larger events.
 - **Shared Risks** – These are risks that have been identified as not being under the control of either entity but require both Waimea Water and FHTJV to cooperate in order to mitigate and manage them. An allowance of \$0.438m has been calculated to cover costs associated with the mitigation of these risks.
 - **Measurable items** – These are items in the schedule in which the volume of work and associated quantities cannot be predicted with certainty. These are specifically beyond the control of the contractor. They primarily relate to geological features beside and under the dam site within the river bed.
- 17.9 The quantities allowed for under the measure and value items in the priced contract amount to \$3.476m. The quantities and associated rates were derived from the site investigation knowledge acquired and the construction methodology adopted. The likelihood of the quantities being higher or lower than expected have been statistically analysed and a risk allowance of \$456,000 has been calculated. This equates to around 13.1% of the value of the measurable items.
- 17.10 It should be noted that the quantities in the schedule may be conservative and the actual required quantities may be less than estimated. The contractor will only be paid for work done under the measurable items.

Waimea Water Risks

- 17.11 These are risks that have been identified as beyond the control of the contractor and therefore need to be allocated to Waimea Water. An allowance of \$3.892m has been calculated to cover costs associated with these risks.



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17.12 The allowance has been derived from the risk register and an assessment of the likelihood and potential cost implication of each risk. In summary, the risk allocation breakdown of \$6.546m is as follows;

• Flood Risk	\$1.670m
• Shared Risks	\$0.438m
• Measurable Items	\$0.456m
• Waimea Water Risks	\$3.982m
Total	\$6.546m

17.13 The risks and associated allowances that have been allocated to FHTJV total \$1.500 million. These have been included in the construction price of \$68.117 million.

17.14 This risk allowance of \$6.546 million is for the 'known unknowns'.

Contingency

17.15 Determining an appropriate contingency has involved an assessment of each of the critical aspects of the project. The following points outline the context in determining a contingency amount:

- 17.15.1 The construction price has been developed on a substantially completed detailed design.
- 17.15.2 The construction methodology determined during the ECI process has been carefully planned to a high level of detail by an appropriately experienced team. The construction methodology has been robustly costed.
- 17.15.3 The risks to construction have been determined, mitigated, costed and statistically analysed.
- 17.15.4 The \$68.114m construction price includes \$59.038m of fixed price items. The remaining \$9.076 comprises a Prime Cost sum of \$5.6m for Mechanical and Electrical (M&E) and \$3.476m for measure and value items. The PC sum for the M&E component will become fixed once the detailed design is complete and this will be finalised prior to financial close. The details around the \$3.476m of measurable items are outlined above.
- 17.15.5 Costs associated with land acquisition work stream is largely complete. Costs have either been incurred or have already been determined.
- 17.15.6 The design and ECI work stream is nearing completion. Costs have mostly been incurred.
- 17.15.7 As outlined in the table above an estimated \$22.084 million of the \$102.172m project estimate is still to be committed and is not a fixed price.
- 17.15.8 Of the \$22.084 million, \$3.476 million for measured items has a risk of \$0.456 million linked to it so we do not need to consider additional contingency for this item. This leaves \$18.608 million that needs to be assessed for a contingency.



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- 17.16 Given that detailed considerations and associated certainty ascribed to this project, a contingency of between 10% and 15% would be considered appropriate within the \$18.608 million.
- 17.17 Waimea Water has included contingencies totalling \$355,750 in five work streams; Project Office, Land, Governance & Company, Professional Fees and Consent Compliance. Combine this with the Waimea Water Contingency Allowance of \$2.0 million gives a total contingency of \$2,355,750. This is around 14.5 % of the \$18.608 million.
- 17.18 The contingency allowance of \$2,355,750 is for the 'unknown unknowns', or things that can't reasonably be foreseen.

Project Management and Delivery

- 17.19 The project is currently being managed by Waimea Water. Waimea Water comprises a Project Governance Board made up of the following members;
- John Palmer, Waimea Irrigators Ltd (Chair)
 - Janine Dowding, Tasman District Council
 - Natasha Berkett, Waimea Irrigators Ltd
 - Richard Kirby, Tasman District Council
- 17.20 The Project Governance Board has also had observers from Crown Irrigation Investments Ltd, Nelson City Council and staff from Tasman District Council. The staff have specifically been the Environmental & Planning Manager (Dennis Bush-King) and the Corporate Services Manager (Mike Drummond).
- 17.21 The Waimea Water Project Office has been resourced with a team of appropriately skilled personnel who have managed the day to day aspects of the project. These are;
- Alex Adams, Risk Manager
 - Andy Nelson, Project Director
 - Rhonda Marshall, Document Controller
 - Rachel Fraser, Financial Support
- 17.22 There have also been legal advisers (Anderson Lloyd), Professional Designers (Tonkin and Taylor), Independent Estimator (Bond CM), Engineer to the Contract (Stantec) and Probity Auditor (Brian Smith Advisory Services Ltd).
- 17.23 It is intended that the Project Governance Board and the Project Office will manage the project through until financial close. In the meantime it is intended to establish the Council Controlled Organisation by completing the necessary formation documents and legal agreements. It is also intended to advertise and appoint four Tasman District Council Directors to the CCO. Waimea Irrigators Limited have already selected its two Directors.



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17.24 The 7 Directors on the Board comprise the following appointments;

- Directors appointed by the Tasman District Council;
- Director appointed jointly by Tasman District and Nelson City Councils;
- Directors appointed by Waimea Irrigators Ltd;
- Director appointed by iwi

17.25 The Directors will have the appropriate experience as professional directors and have a combination of commercial, technical and governance experience to oversee the construction phase of the project. It is intended that the Board of Directors be established to take over the project prior to the construction phase commencing.

17.26 There will be a Project Director that will report directly to the Board of Directors. The project Office will comprise the following expertise and skills. Note that these skills will have input into the project thought some will not be involved fulltime on the project.

- Project Director
- Document Controller
- Administration Officer
- Financial Officer
- Engineer to the Contract (Stantec)
- Engineer's Representative (Stantec)
- Structural Engineer (Tonkin and Taylor)
- Geotechnical Engineer (Tonkin and Taylor)
- Construction Manager (Fulton Hogan Taylor Joint Venture)
- Design Manager (Fulton Hogan Taylor Joint Venture)
- Safety Manager (Fulton Hogan Taylor Joint Venture)

17.27 The Fulton Hogan Taylor Joint Venture will also have other skilled staff on site undertaking the physical works.

17.28 The Governance and Management Structure that is intended to be established will manage the risks and the delivery of the project. There is sufficient experience in the team to ensure that the project is delivered to meet its intended objectives and to manage the risks associated with that delivery.

Oxford University Paper - '*Should we build more large dams? The actual costs of hydropower mega-project development*'

17.29 Understanding the purpose of this research paper is critical to understanding its relevance to the Community dam.

17.30 The research paper's clearly stated purpose was to examine "whether the benefits of new dams will outweigh the costs" when providing electricity supplies - particularly in developing countries. This was because the de facto response to electricity needs is still often 'big



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- solutions' at a time when it's becoming clear that alternative electricity sources (such as solar and wind) and much smaller dams can be provided much more quickly, with greatly reduced environmental impacts and scope for community ownership.
- 17.31 A key point is that the paper examines a sample of 245 dams (mostly hydro) out of over 50,000 globally and focused on very large ones (80% of the sample had a wall height of over 30 meters and 30% over 100 meters). In addition 75% of the dams were in developing countries and the average cost was US\$1.44 billion in 2010 dollars.
- 17.32 All the focus of study elements outlined above indicate that the conclusions from 'Should we build more large dams? The actual costs of hydropower mega-project development' are not directly applicable to the Waimea Community Dam. The purpose of the study and scale and circumstance of projects examined are very different from those we face in NZ today and the Waimea Community Dam project in particular. However some more specific comment is valid.
- 17.33 The Study states that there was overwhelming evidence that costs were systematically biased towards underestimation. It implies that this bias was to enhance the business case to ensure the project was initiated. The natural consequence of this is would increase the overrun percentage. The ECI process has minimised the risk of any underestimation in the construction component of the project.
- 17.34 The costs attributed to the sample of 245 dams appear to be a misrepresentation. In a subsequent study by the International Commission on Large Dams (ICOLD) questions are raised about the voracity of the 99% overrun in costs as it cannot be explained by the six references quoted in the study. Another important aspect that is not clear in the study is - which estimate is used to calculate the cost overruns. Is it when the business case is developed to determine viability? Or is it after preliminary design and before procurement? Or is it when procurement has been completed and the construction contract signed?
- 17.35 The study has endeavoured to account for the variables and characteristics of each of the 245 dams in regard to scope, estimates, detailed design, procurement and project management. However it is not clear whether these inputs into the model were specific enough to give robust outputs - but given its focus on mega hydro projects that is, to some extent, an unknown.
- 17.36 As highlighted above the focus of the study was on hydropower mega-project development. The Waimea dam does not fall into this category given its modest size and a 2018 projected budget of US\$68.184 million compared with the studies average of US\$1.44 billion in 2010 dollars. It is primarily for maintaining river flows, augmenting the aquifers under the Waimea Plains to facilitate abstraction for urban water supplies and for horticulture and agriculture - thus it has multiple benefits.
- 17.37 The study does observe that the proponents of large dams envisage multiple benefits but given the primary justification was mostly hydro electricity production the cost-effective delivery of wider benefits was seldom achieved. The study suggests the use of an 'outside view' or independent advisors is preferable to minimise the risk of this occurring. That has been our approach and in particular the extensive involvement of the community in the earlier stages of developing means of water augmentation has been a very important part of the planning process.



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Government Review of Three-Water Activities

General Overview

- 17.38 The Government is reviewing the management and delivery of the three-water activities as a result of the Havelock North Inquiry. It has signaled that this broad-ranging review will be undertaken this year. The Government recognises that the local government sector is facing variable service delivery challenges and significant cost pressures related to the management and delivery of the three-water services.
- 17.39 The Government intends to deal more effectively with the pressing issues confronting the three-water activities with a strategic approach in mind. It is committed to confronting the scope of this challenge whilst seeking to protect the health of people and the environment whilst also supporting a strong economy. This is in the context of climate change, declining populations in rural areas and increasing funding and financing pressures on small communities.
- 17.40 The Government is undertaking the review with a strategic review of;
- Capability and Capacity – holistic asset management and governance;
 - Affordability – reviewing the main funding pressures
 - Regulation – compliance, monitoring and enforcement
- 17.41 The cross government agency review will be led by the Department of Internal Affairs who will work with councils, industry, sector groups and others to assess and scope options to deal with the key issues, including costs relating to better management and delivery of water services. Government Officials have been tasked to develop options and recommendations to create a strong sustainable three waters system. They have been tasked report back to the Minister in October 2018.
- 17.42 Although the Government has signaled that it will take the lead, it is expecting strong cooperation from councils, iwi and business to work with it to ensure risk, opportunities and costs are identified and managed.
- 17.43 The review will also include looking at the structures and entities that are best suited for the provision of the three-waters. The Government has signaled that the core principles of public ownership will underpin any considerations that will result from the review.
- 17.44 The review will also look at whether the existing regulatory framework for the three-waters is appropriate and fit-for-purpose.
- 17.45 The Review has four inter-related workstreams;
- 17.45.1 Effective oversight, regulatory settings and institutional arrangements;
 - 17.45.2 Funding and Financing mechanisms;
 - 17.45.3 Capacity and capability of decision makers and suppliers
 - 17.45.4 Information for transparency, accountability and decision making

Implications for Council

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- 17.46 It is very difficult to predict the outcomes of the review and what course the government will take. It is highly likely that the following will occur;
- 17.46.1 A specific regulator be established to regulate the 3 waters activities;
 - 17.46.2 There will be some form of change in both the governance and management of the 3 water activities;
- 17.47 The funding and financing will be focused around users of the 3 water services.
- 17.48 The current Waimea Community Dam project has three main beneficiaries;
- 17.48.1 The ecology and environmental outcomes of the Wairoa and Waimea Rivers;
 - 17.48.2 The urban water supplies (Richmond, Hope, Brightwater, Mapua and Nelson);
 - 17.48.3 The horticultural and agricultural activities on the Waimea Plains.
- 17.49 The current proposal for the Waimea Community Dam is funded by the three beneficiaries in some form or other. There is also funding coming from the government through the Fresh Water Improvement Fund (\$7.0 million grant) and Crown Irrigation Investments Limited (\$32 million in loans).
- 17.50 The 3 Waters Review is primarily focused on the water, wastewater and stormwater activities. Most of these in the Tasman district are managed by Council in one form or the other. They are also funded by the general ratepayer and by specific users. Of the three beneficiaries of the Waimea Community Dam only the urban water supply will be affected by the 3 waters review.
- 17.51 Although the governance and management of the three waters may be taken out of Council's direct control, the ecological and environmental responsibilities associated with the Wairoa and Waimea Rivers will still remain the responsibility of Council. It is clear from public opinion and recent government announcements that the environment will be given greater protection in future. Consequently, It is very likely that minimum trigger river flows in the Waimea and Wairoa rivers are likely to increase, thus putting more stress on abstractors whether urban or rural.
- 17.52 The horticultural and agricultural sector has a reliance on water. And although this is not a direct responsibility of Council, Council does have a responsibility for the economic wellbeing of its community. The ongoing wellbeing and sustainability of the horticultural and agricultural sector is of mutual benefit to the urban communities and is an economic driver. The Northington Report has confirmed the extent of this. Council cannot ignore its statutory responsibility in this respect.
- 17.53 Council's responsibility is more than just urban water supplies.
- 17.54 There has been some commentary that with the pending 3 waters review, Council should not invest in the Waimea Community Dam because the government will soon take over the 3 waters and it can then be responsible for water augmentation. This is a very short-sighted view for the following reasons;
- 17.55 There is no certainty as to whether the 3 waters activities will be aggregated into a separate entity or the scale of any aggregation. If aggregation did occur then the aggregated entity would only be interested in water augmentation for the urban supply and not be interested in any other benefits. Alternative water augmentation options have



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- already been identified as not being as cost-effective for urban water supplies as the Waimea Community Dam;
- 17.56 Council has a regional council responsibility of protecting and enhancing the environment. It would need to find another means to maintain and enhance the ecology of the rivers;
- 17.57 Council has a statutory responsibility of ensuring the economic, social and environment wellbeing of its community. The economic multiplier of the dam has been verified by the Northington Report;
- 17.58 The government has not signaled how it may help in financing or subsidising the 3 waters. Even if it does subsidise in some form or other, users will still bear the greater share of the funding. Any subsidy is not likely to match the current funding that the government has allocated to the Waimea Community Dam.
- 17.59 Potentially the transfer of the water supplies to a separate entity, would also result in the transfer of the water supplies' debt and share of operating costs related to Waimea Community Dam.
- 17.60 It is likely that there will be a new regulator and review of the current regulations related to the three waters activities.

18 Funding and Financial Considerations

Funding and Finance - General

- 18.1 There is a clear trade-off between operational costs and capital costs and over the longer term the cost of loan repayments in real terms reduces and the cost of operational expenses increases. Given current borrowing costs on a 30 year table loan each \$1m in opex is the equivalent of \$16m in additional borrowing in year one. When comparing between water augmentation alternatives this differential needs to be taken into account.
- 18.2 Any contribution to water augmentation solution capital costs needs to be accommodated within the net debt limit (\$200m) in the Council's Financial Strategy. The cost of servicing the additional loans needs to be accommodated within the rates increase limit of 3% (excluding growth). Both of these may require re-prioritisation of capital and operational projects.
- 18.3 The opening net debt as at 30 June 2018 was \$141m. The opening position in the Long Term Plan 2018-2028 was \$159m creating \$18m headroom. In addition, the Council does not usually complete its planned capital works programme each year. Carried over capital works from 2017/2018 to 2018/2019 will be in the order of \$17m - \$20m. This creates some ongoing headroom which combined with some reprioritisation should accommodate any increase in capital commitment for a water augmentation solution. The Chief Executive and the Senior Management Team could undertake to manage Council expenditure and the overall capital works programme to remain under the debt cap, which can be managed through Annual Plan processes.
- 18.4 A decision to not proceed with the Waimea Community Dam will mean that \$4-5m of Joint Venture refundable work in progress project costs currently loan funded by the Council will need to be met from future rates income over (say) a five year period leading up to the



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construction of an alternative solution. This figure is in addition to the costs of developing and implementing an alternative solution.

- 18.5 In addition to these recoverable costs (from the Joint Venture) the Council will have incurred circa \$2.5m in unrecoverable costs that need to be met from rates or other funding sources.
- 18.6 The decision on the form and timing of a water augmentation scheme will likely impact on the Council's credit rating. In its assessment Standard and Poors evaluates the Council's current and future financial performance, along with the management and governance of the organisation. In addition they consider the performance of the local economy and in particular the risks and diversity within that economy. A decision that would likely have significant negative impacts on the local economy will give cause for concern and will be taken into account in the Council's annual rating review. A down-grading in our credit rating will impact on our overall borrowing costs.

Prudent Decision Making

- 18.7 Section 101(1) of the Local Government Act 2002 requires the Council to manage its general financial dealings prudently and in a manner that promotes both the current and future interests of the community. Financial prudence means making a decision with deliberation, due care and forethought; it applies equally to both making a decision to do something as to making a decision not to take a course of action. It also requires the Council to identify and manage the risks associated with the decision. For this project it would include the financial risks of both proceeding, not proceeding, or delaying the project.

Financial Impact of drought and income from Nelson City

- 18.8 During a drought like that in 2000/01, if the Council were able to comply with the TRMP rules, the total revenue lost through lower water sales would be approximately \$1.6m (incl GST). This would need to be recovered the following year through higher water charges. Over 90% of the water supply costs are fixed and are not impacted by the volume of water consumed.
- 18.9 In 2017/18 we received \$1m (incl GST) from water sales to customers in Nelson City. While we could curtail supplies to these customers in order to provide water to customers in Tasman District, this would only have a short term benefit due to the way the TRMP rules work. Any large reduction in supply to Nelson City would need to be used by Tasman District otherwise the reduction would be factored into the eight year average usage and lost over time through the operation of the TRMP provisions.

Funding and Finance – Waimea Community Dam

The Nature of Public Investments

- 18.10 Concerns have been raised in the past about the Council's investment in the proposed Waimea Dam being a subsidy to irrigators. What is proposed is not that but is an increased Council contribution to get a project over the line. The Council should be motivated to do that (within limits) because the do nothing and alternative augmentation options cost the community more and/or deliver less value.
- 18.11 Public capital investment in government-owned assets creates the opportunity for private investment and productivity – that is why councils and central governments do it. The effect of public capital investment on economic growth is hotly debated. While analysts debate



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- the magnitude, the evidence is that there is a statistically significant positive relationship between infrastructure investment and economic performance.
- 18.12 In the case of this project the investment opportunities are for the irrigators and others to take. Some may argue that there is an element of exclusivity here in that 'affiliation' and a water supply agreement is required to gain access to the benefits. In other words, access is available for a fee.
- 18.13 Other public investments in assets such as roads, airports, ports, transit systems, and even community facilities create investment opportunities for and 'subsidise' someone. Our consenting and regulatory work enables developers and others to profit also. While some may be genuine public good and access is 'free' there are many other examples where a fee is needed to particulate.
- 18.14 There are various reports about the nature and extent of the economic benefits that will accrue from the proposed Waimea Community Dam and who will derive them. The cost of not proceeding with the proposed Waimea Community Dam on the economy and sectors of the economy has also been quantified. New Zealand Institute of Economic Research, Northington and Partners and John Cook and Associates have all written reports.
- 18.15 As noted earlier, academics and practitioners will debate and attempt to quantify these costs and benefits so long as someone commissions them. However, there should be no debate about the principles.
- 18.16 Trying to quantify the costs and benefits beyond the established principles is unproductive. There is so much we don't know about production methods, crops of the future, markets, the climate, the choices entrepreneurs will make, capital and labour availability and so on to be certain.
- 18.17 What we do know is that without a dam (or an alternative) there will be a negative impact, the urban footprint in the Waimea Basin area will be locked into its 2013 configuration, there will be no wet industries and so on.

Finance and Funding

- 18.18 This project now has an overall project cost estimated at \$102m excluding unrecoverable costs to date. Several funding proposals have been advanced over the years but none have been successful. The underlying challenge is that this is a large infrastructure project based on estimated water demand circa 100 years out and the project cannot be staged.
- 18.19 Reducing the size of the proposed Dam does not reduce the costs proportionally. This is because most of the cost is in the lower parts of the Dam and most of the storage capacity is in the higher areas. The design capacity of the Dam (hectare equivalents (hae)) provides for 7,765 hae of extractive capacity. That capacity under the current proposal is allocated 5,425 hae being taken up by irrigators, 1,825 hae by Tasman District Council and 515 hae via Tasman District Council for Nelson City Council. The proposed Dam also provides for environmental flows in the river and a public good contribution to the District. These two components have been assessed as 30% of the capital cost of the project.
- 18.20 Following the unsuccessful Council-proposed fully rates-funded approach consulted on in 2014, irrigators undertook to develop an investment ready proposal for consideration by the Council. That proposal was subsequently received and rejected by the Council. Over the last



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18 months or so the Council, Irrigators, Crown Irrigation Investments Limited and our advisors have been meeting and developed a proposal that would see this key project proceed. That work identified a need by all parties to move significantly from their opening positions. **In essence we all get there together or we don't get there at all.** The negotiated approach was agreed and a commitment letter setting out the respective parties obligations was signed on behalf of the Council in February 2018. Now that the ECI process has been concluded and the budgets revised we have identified an increase in costs of circa \$26m. That means that the Council and the irrigators will both need to make a larger financial contribution to the project if it is to proceed.

18.21 Enquiries have been received from iwi and Industrial users on how they could assist in funding the project. The most logical place to insert this funding would be directly into the Council Controlled Organisation (CCO). This could be by way of "dry" shares. These shares do not link to a right to for affiliation. The share issue would need to be to a small number of sophisticated investors and in large denominations (\$500k-\$1m+). An issue of redeemable preference shares could provide for a return at rates at or below what Council could borrow from the Local Government Funding Agency. The shares could be redeemable at a future date out (say 15-25 years). At this time Council would be able to replace the shares with a capital injection to the CCO. At all times however, Council would need to control 51% of the voting shares in the CCO.

18.22 This option along with others would be explored in the lead up to financial close and subject to agreement with the other joint venture parties would be included as an option in the agreements.

Financial rationale for Water Re-supply provisions

18.23 The water re-supply provisions that cover Waimea Irrigators Limited (WIL) resupplying industrial users and Council supplying rural users are set out in the Shareholder's Agreement term sheet. They are designed to ensure continued financial viability of the funding arrangements for both parties.

18.24 WIL and Council have agreed the following "Re-supply Principles":

- WIL agrees that it will not supply any water to, or enter into any water supply agreement with, any person who is, at the time of supply, connected to Council's reticulated and extended reticulated networks, without the agreement of Council; and
- Council agrees that it will not supply water to anyone other than for any Base Case Use and not supply augmentation water to apple growers, vineyards, dairy farms or other horticultural or agricultural water users, without the agreement of WIL.
- Other than in respect of any current industrial activities for customers currently supplied by Council, prior to either Party supplying any augmented and non-potable water for any new industrial activities, both Parties shall discuss and agree the proposed supply arrangements.

Costs to Date

18.25 The project costs to 31 July 2018 are set out in the table below. The Council has loan funded costs totalling \$6,362m. These comprise two components, costs recoverable from

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the Joint Venture CCO should the project proceed totalling \$4.557m and unrecoverable costs totalling \$1.805m.

Figure 18.26

Waimea Project - Summary Financials							
	Pre June 14	14/15	15/16	16/17	17/18	18/19	Total
Expenditure (excludes WIL WCDL Costs)	Actual	Actual	Actual	Actual	Actual	Actual	Actual
Stage 1 - Pre Feasibility	412	0	0	0	0	0	412
Stage 2 - Feasibility	1,564	0	0	0	0	0	1,564
Stage 3	222	0	0	0	0	0	222
Design	1,929	0	0	0	0	0	1,929
Governance	214	0	0	0	0	0	214
Project Management	59	335	69	308	487	10	1,269
Consenting	205	815	8	8	36	0	1,073
Water Supply Solution (Tonkin Taylor/Beca)	0	557	86	125	1,886	276	2,930
Land and Access	0	102	288	273	1,406	41	2,110
Professional Support CCO Structure/Borrowing Agreement	0	4	26	234	295	0	559
Communications	0	17	0	18	1	0	36
Statutory Process	0	16	0	2	3	0	21
Hydro	0	0	0	0	68	3	71
Project Office	0	0	0	29	510	48	587
Interest on Loan Funding	0	0	74	71	165	0	310
Total	4,606	1,846	552	1,067	4,858	378	13,307
The above is funded by;							
WIL 50%	0	0	0	65	1,246	162	1,473
TDC WCD BAU Loan	0	322	110	507	863	3	1,805
TDC WCD JV Loan	0	658	442	495	2,749	213	4,557
Historic Funding Sources	4,606	866	0	-0	0	0	5,472
Total	4,606	1,846	552	1,067	4,858	378	13,307

Cost to Financial Close

18.26 There are three sets of costs that will be incurred through to financial close.

- 18.26.1 The Council specific costs that are paid in full by the Council. These include director recruitment costs, professional advice including on the commercial negotiations and documents, public consultation and support for the Council decision making processes.
- 18.26.2 WIL specific costs that are paid in full by WIL. These include their normal company costs, capital raising costs, professional advice including on the commercial negotiations and documents.
- 18.26.3 JV core project costs – These are costs that cover work streams within the overall project budget. Examples are the conclusion of the ECI design work. Meeting

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the consent conditions setting up the CCO etc. Promoting the local bill and completing the land and access negotiations. Some of these JV costs are initially met by the Council and others shared through the heads of agreement with WIL. All these costs will be reimbursed to WIL and the Council at financial close should the project proceed.

18.27 Council specific costs - In October 2017, the Council approved (unrecoverable) expenditure on the project through to financial close of \$640,000 plus an additional \$100,000 to investigate further the hydro-power options. To the end of July 2018 \$493,000 has been spent. This leaves \$247,000 available to fund the Council costs out to financial close. I expect that we can complete the negotiations and commercial arrangements within this budget. These costs along with other unrecoverable costs have been provided for in the LTP by way of a 30-year loan. If a decision is made to engage in a further round of public consultation then additional funding will be required. If a decision is made not to proceed with the project these costs will need to fully funded over the next 5 years.

18.28 Joint Venture Costs The JV office has assessed JV costs to financial close. These include Councils costs to complete the land and access process. These costs are recoverable from CCO if the project proceeds.

Summary Estimated Costs to Financial Close	August Budget	September Budget	October Budget	November Budget	December Budget
Procurement & ECI Phase	1,131,644	140,289	50,000	50,000	0
Land and Access	50,000	0	0	25,000	100,648
Project Office	46,669	45,036	47,475	47,475	47,475
Governance & Corporate	10,000	10,000	10,000	54,915	68,832
Construction	0	0	0	0	0
Consent Compliance	1,000	1,000	1,000	1,000	1,000
Construction Related Professional Services	48,400	28,000	0	0	0
Total	1,287,713	224,325	108,475	178,390	217,955

Allocation of Project Costs

18.29 The Joint Venture Working Group developed a cost allocation proposal for consideration that was subsequently agreed by all parties that involves the Council covering the full capital costs of the environmental flows. The Council has also agreed to meet the operating costs on the environmental capacity. The Council's capital and operating costs for the environmental flow capacity will be partly offset by the government funding of up to \$7 million over three years from the Freshwater Improvement Fund and a \$10m interest free loan over 10 years from CIIL.

18.30 The current allocation of operating costs will see the Council contribute 51% of operating costs and irrigators 49%. This approach would see the Council's operating cost contribution to be in the order of \$864k per annum based on current LTP and dam operating cost estimates, (inflation adjusted to year 4 and with the \$100k uplift). This assumes that Tasman District Council meets Nelson City Council's dam capacity operating costs and that Nelson City Council makes a capital grant of \$5 million. The final arrangements with Nelson City Council are subject to the successful completion of negotiations over the cross-boundary water supply agreement.

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18.31 Under the current proposal central government and irrigators meet \$48.5m of the project capital costs (excluding the CIIL loan to the Council) and 49% of the operating costs. The Council also benefits from a \$10m CIIL concessional loan at nil interest rate over 10 years. In any alternative scheme, the Council will meet 100% of the capital and operating costs.

		JV Capital \$000s	TDC		TDC Share of Operational Costs \$000s	TDC Annual Loan Repayments \$000s	TDC Total Annual Costs \$000s
			Unrecoverable Costs Loan Funded \$000s	Total TDC Loans net of other funding \$000s			
Project Cost		\$ 99,172	2,500				
Environmental Flow	30%	29,752	1,468	13,824	507	821	1,328
Balance to be funded by extractive Users							
Irrigation Interests	5,425 Ha	48,500					
Urban - TDC	1,825 Hae	16,316					
Urban Ncc	515 Hae	4,604					
Total Urban	2,340 Hae	20,920	1,032	12,538	357	745	1,101
Total Extractive Use	7,765 Hae	69,420	1,032	12,538	357	745	1,101
Total Project Cost Recovery		99,172	2,500	26,362	864	1,565	2,429

Operational Expenditure

18.32A review of operating costs is being undertaken. These updated estimates will be finalised by financial close. Most operational costs have previously been peer reviewed. The exception has been the costs of consent compliance a rigorous review of these cost will be undertaken in September. All costs will be subject to another final review prior to financial close.

18.33 In the 2018-28 Long Term Plan the estimated Council share of operating costs (\$715,000 pa) were inflation adjusted. These may need to be adjusted upwards as numbers are finalised for the Council's share of operating costs.

18.34 Waimea Community Dam Council share of operational costs (at practical completion) only make up 34 % of the total annual costs to the Council. In the rates modelling we have included the inflation adjusted operating costs provided for in year 4 (\$811,000) of the Long Term Plan plus an uplift in JV costs of \$100,000 pa.

Rates

18.35 In the rates modelling we have included the inflation adjusted operating costs provided for in year 4 (\$811,000) of the Long Term Plan plus an uplift in JV costs of \$100,000 pa. The allocations of the rates are based on 2018/19 base for rates ie Capital value in the ZOB, number of rateable properties, water usage and water meter numbers. With the growth projections and a 3- yearly revaluation should the dam proceed, there will a different final allocation of costs. It should be noted that the rates examples are at year 4 of the LTP ie post the practical completion of the dam when the full operating costs need to be met.

18.36 The allocation of Council capital and operating costs was consulted as part of the Revenue and Financing Policy review leading up to the adoption of the 2018-28 Long Term Plan. A



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layered approach was taken with the costs related to the community water supplies being charged to the “Water Club”. These costs are combined with other water club costs and are recovered from club members through a combination of fees and charges, a fixed targeted rate and a volumetric targeted rate.

18.37 The portion of costs related to the public good and environmental benefits are being recovered through two targeted rates. The first is a fixed charge per rateable unit across all units in the district. The second is a charge based on capital value for all properties within the geographically defined Zone of Benefit.

18.38 The high level rate modelling is based on the 2017/18 rates strike. That included the number of rateable units and the capital value in the current ZOB. The water rates are modelled on current budget consumption and meter numbers. There will be another district wide property revaluation before the dam project reaches final completion that is likely to move the incidence of rates again.

18.39 Annual Costs with No PGF support and \$3m in savings on \$102m of project capital costs:

Typical Rates Inc GST					
		\$000s		\$000s	
Total Project Capital Cost		\$	99,172	less PGF Funding	\$ -
Total Project Annual Operational Costs		\$	1,690,653		
Rates Funding					
Zone of Benefit Rates Costs	Annual Charges (Inc GST)				
\$ 458,196	\$ 458,196	Zone of Benefit CV Rate			
\$ 429,690	\$ 1,069,125	District Wide Fixed Charge – approx 40% collected in the ZOB			
\$ 312,057	\$ 405,240	Water Rates Fixed Charge approx 77% collected in ZOB		77%	
\$ 620,018	\$ 861,136	Water Rates Volumetric Charges Est 77% collected in ZOB			
\$ 1,819,961	\$ 2,793,697				

Typical Rates Inc GST						
		\$000s		\$000s		
Total Project Capital Cost		\$	99,172	less PGF Funding	-	
Total Project Annual Operational Costs		\$	1,690,653			
Example Properties (Incl GST)	Property CV	Fixed Water Charge	Vol Water Charge	Fixed Charge	ZOB Charge	Peak Annual Cost
Richmond / Best Island	325,000	41	61	46	21	\$ 169
Richmond	975,000	41	61	46	64	\$ 212
Mapua	780,000	41	61	46	51	\$ 199
Brightwater/Hope	522,400	41	61	46	34	\$ 182
Kaiteriteri	1,300,000	41	61	46	n/a	\$ 148
Murchison, Wakefield, Pohara	n/a	41	61	46	n/a	\$ 148
Upper Moutere, Motueka and Takaka (excluding Upper Takaka)	n/a	n/a	n/a	46	n/a	\$ 46

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18.40 These typical rates would be reduced if funding is received through the Provincial Growth Fund. The receipt of \$5m in funding would reduce the rates funding of the Environmental and public good components of the project. This impact is set out in the table below:

Typical Rates Inc GST						
		\$000s			\$000s	
Total Project Capital Cost		\$ 99,172		less PGF Funding	5,000	
Total Project Annual Operational Costs		\$ 1,690,653				
Example Properties (Incl GST)	Property	Fixed Water		Fixed Charge	ZOB	Peak Annual Cost
	CV	Charge	Vol Water Charge		Charge	
Richmond / Best Island	325,000	41	61	36	17	\$ 154
Richmond	975,000	41	61	36	50	\$ 187
Mapua	780,000	41	61	36	40	\$ 177
Brightwater/Hope	522,400	41	61	36	27	\$ 164
Kaiteriteri	1,300,000	41	61	36	n/a	\$ 137
Murchison, Wakefield, Pohara	n/a	41	61	36	n/a	\$ 137
Upper Moutere, Motueka and Takaka (excluding Upper Takaka)	n/a	n/a	n/a	36	n/a	\$ 36

Credit Support

18.41 The irrigator capital contribution will need to increase to cover their share of the increased capital costs. WIL are currently looking at options to raise additional funds.. As previously noted CIIL require security (credit support for the loan to the CCO for Irrigators). That security includes the loan being secured over the whole dam asset and given a dam is an illiquid asset (you can't sell it easily) additional credit support by the Council is key to securing the CIIL borrowing.

18.42 A key component in arriving at an acceptable funding and finance outcome is the commercial negotiations with CIIL to achieve acceptable loan conditions. These conditions were set out in the respective Term Sheets. We continue to work with CIIL and WIL to finalise the detailed documentation covering rate, tenor and structures/security for the loans.

18.43 The level of credit support provided by the Council and the decision that the loan is made directly to the joint venture CCO has enabled the lending to proceed and reduced loan interest costs significantly. This decision has made the project more affordable to irrigators, this helped ensure that there was adequate irrigator uptake. CIIL also required a financial exit strategy when the loan matures in 15 years.

18.44 As noted above, at or before maturity, the outstanding CIIL irrigator loan will need to be refinanced at commercial rates. Those additional costs will need to be met by WIL. The request for a high level of Council credit support should be seen in light of the fact that the Council in any case would step in in a financial crisis to protect its own investment and the benefits the project provides for the wider community.

18.45 As large and as complex as the Waimea Water Augmentation project may seem, the reality is that the Council's funded capital contribution of \$38.7m to the project is only about 10% of its likely \$390m capital works budget over the next 10 years.

Current Provisions of the Long Term Plan 2018-2028

18.46 In the current Financial Strategy adopted with the 2018-28 LTP, a key assumption is that the Waimea Community Dam confirmed by the Council in July 2017 as the most cost



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effective alternative for augmenting the water supply would be operational from 31 July 2021.

18.47 The LTP provides \$26.8m in capital funding and \$715,000pa (inflation adjusted) in opex to fund the building and operation of the dam.

Long Term Plan Funding Provision		Budget LTP 2018/19
Waimea Community Dam Council Investment - 2018-2028 LTP		
CCO JV Funding		
Equity Investment in CCO		26,844
Equity Investment in CCO (FIF)		7,000
Investment in CCO shares		33,844
Funded by:		
Funding from Development Contributions		1,916
Unallocated Capacity - Enterprise Activities Transfer		2,910
Environmental CIIL (Interest free, 10 years)		10,000
30 year table loans		12,018
FIF Grant		7,000
Total		33,844
WIP unrecoverable cost loan converted to 30 year table loan		2,500

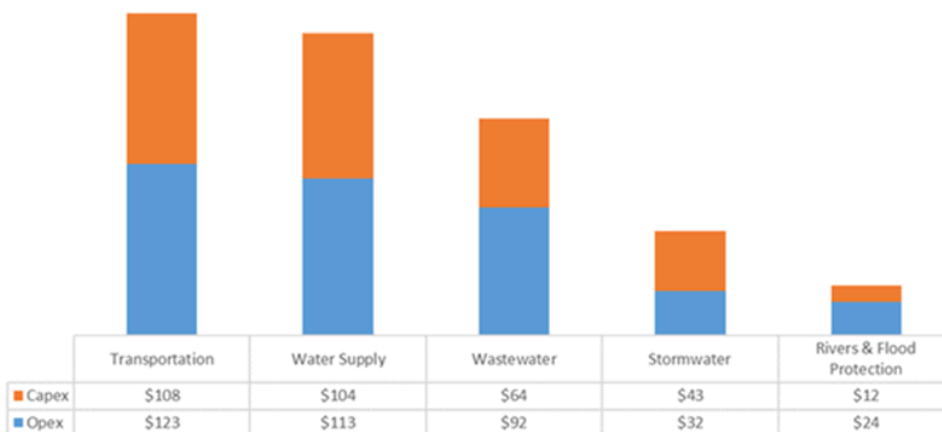
Long Term Plan Funding Provision		Budget LTP 2018/19
Waimea Community Dam Council Investment - 2018-2028 LTP		
Council Loan Funding		
30 Yr Table Loan - Public Good JV Investment	36%	4,383
30 Yr Table Loan - Water Club JV Investment	64%	7,635
Total		12,018
30 Yr Table Loan - Public Good Unrecoverable Costs	36%	912
30 Yr Table Loan - Water Club Unrecoverable Costs	64%	1,588
Total		2,500

Long Term Plan Funding Provision											
Council Investment	Budget LTP 2018/19	Budget LTP 2019/20	Budget LTP 2020/21	Budget LTP 2021/22	Budget LTP 2022/23	Budget LTP 2023/24	Budget LTP 2024/25	Budget LTP 2025/26	Budget LTP 2026/27	Budget LTP 2027/28	
Annual Charges Recovered from the Community											
	Construction	Construction	Construction	Operating	Operating	Operating	Operating	Operating	Operating	Operating	
Water Club											
Share of CCO Operating Costs	70,518	90,506	210,029	295,631	301,929	308,371	315,248	322,583	330,102	338,117	
Loan Interest/Repayments	577,869	545,780	545,780	545,780	545,780	545,780	545,780	545,780	545,780	545,780	
Total	648,387	636,286	755,809	841,411	847,709	854,151	861,028	868,363	875,882	883,897	
District Wide and ZOB											
Share of CC Operating Costs	89,267	129,324	354,402	515,602	527,460	539,592	552,542	566,356	580,515	595,608	
Interest on Loan	332,161	313,716	313,716	313,716	313,716	313,716	313,716	313,716	313,716	313,716	
Total	421,428	443,040	668,118	829,318	841,176	853,308	866,258	880,072	894,231	909,324	
Total	1,069,815	1,079,326	1,423,927	1,670,729	1,688,885	1,707,459	1,727,286	1,748,435	1,770,113	1,793,221	

18.48 Cost increases in the context of the 2018-28 LTP investment in infrastructure services



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18.49 In the Long Term Plan, the Council proposes to spend \$331m on infrastructure capex and \$384m on operational costs for infrastructure. The additional Council funding required for the proposed Waimea Community Dam project of circa \$11.5m only represents 3.5% of this total capex. The overall accuracy of the budgets are unlikely to exceed +/- 10-15%. This supports a view that the additional costs can be accommodated within in the overall budgets and can be incorporated with the updates to the programme and its costings that will occur with the Annual Plan budgets and certainly within the next iteration of the Long Term Plan.

Finance and Funding – Alternative Options

18.50 All proposed alternatives to the Waimea Community Dam only deal with the community water supply (urban water) fed from the Richmond treatment plant (Richmond, Mapua, Hope, and possibly Brightwater). Under the current Revenue and Financing policy the entire cost would be borne by the urban water club. The urban water club consists of Richmond, Murchison, Upper Takaka, Pohara, Collingwood, Brightwater, Hope, Wakefield, Tapawera, Mapua, Kaiteriteri, Riwaka and rural extensions to the urban supply.

18.51 In addition to funding the capital and operating costs of any alternatives. Council Council would need to fund the sunk and non-recoverable costs from the abandoned Community Dam project these would be circa \$7.5-\$8m. They would need to be fully funded over 5 years from 2018/19. This adds to the cost of any alternative.

18.52 The most likely alternative to the proposed Waimea Community dam is the 800,000M3 Riverside pond option. This has a Capital Cost of \$60m and operating costs of circa \$1.9m pa. Given the transition of time to completion the design, obtaining consents etc capital and operating costs are likely to increase further due to inflation over a 5 year period.

	July 2017 Estimate	August 2018 Estimate	Operating Estimates
Riverside Pond (500,000m3 Storage, 4,000m3/day)	\$24,827,933	\$24,706,500	\$733,780 per year

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Riverside Pond (800,000m ³ Storage, 13,000m ³ /day)	\$54,134,220	\$59,849,500	\$1,920,581 per year
Motueka Aquifer to Mapua (5,900m ³ /day)	\$38,481,859	\$56,178,114	\$908,663 per year

18.53 The Council funded capital contribution to the \$99m Waimea Community dam is \$38.7m plus \$2.5m in unrecoverable costs. A total of \$41.2m with annual operating costs of \$864K in year 4. The capital costs and operating costs of the alternative (after taking into account a loan for the \$4-5m cost otherwise recoverable from the WCD JV) is \$64-\$65m with annual operating costs of \$1.9m.

18.54 Accommodating the increased capital (+\$27m) and operational spend (+\$1m) within the fiscal limits set in the LTP would require a substantial reprioritisation of capital projects and operational spend. That reprioritisation could likely lead to a drop in levels of service.

Rates for an alternative

18.55 As the alternative only provides water to meet urban demand all costs need to be met from the water account. Council would need to determine which ratepayers would need to meet the costs of the loan repayments for the WCD costs. For rates modelling purposes we have included the Public good element (58.7%) of the residual WCD costs as a fixed district wide charge in the rates table below.

18.56 Currently approximately 64% of the water costs are recovered through volumetric charge (\$2.17/m³) plus approximately 36% is through a fixed service charge - currently \$332.74/year in urban water supply metered connections (these figures are in Page 11, Volume 2, of the Long Term Plan 2018-28).

18.57 We have used the current split between fixed and variable rates charges. Should council choose an alternative to the Waimea Community dam option then the current allocation between fixed and variable charging is likely to change.

18.58 Notwithstanding the charging the current costs are primarily fixed (94%) due to the significant investment in infrastructure and operational costs that are not strongly aligned to the volume of water delivered. This means that the costs will not reduce substantially or in line with any reduction in demand due to price increases.



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Typical Rates Inc GST							
			\$000s				
Total Project Capital Cost			\$ 59,850				
Waimea Dam Loans			\$ 7,000				
Total Project Annual Operational Costs			\$ 1,921				
Example Properties (Incl GST)	Property CV	Fixed Water Charge	Vol Water Charge	Fixed Charge	ZOB Charge	WDS Fixed	Peak Annual Cost
Richmond / Best Island	325,000	211	310	-	-	12	\$ 521
Richmond	975,000	211	310	-	-	12	\$ 521
Mapua	780,000	211	310	-	-	12	\$ 521
Brightwater/Hope	522,400	211	310	-	-	12	\$ 521
Kaiteriteri	1,300,000	211	310	-	n/a	12	\$ 521
Murchison, Wakefield, Pohara	n/a	211	310	-	n/a	12	\$ 521
Upper Moutere, Motueka and Takaka (excluding Upper Takaka)	n/a	n/a	n/a	-	n/a	12	\$ 12

18.59 The impact on ratepayers in the water club is significant if the alternative option is chosen. The annual costs is \$521 per property with typical water use. For industrial users and high use properties the increases would be higher.

Example Properties (Incl GST)	Property CV	WCD Rates	Alternative option		
			Rates	Increase \$	Increase %
Richmond / Best Island	325,000	169	\$ 521	352	208%
Richmond	975,000	212	\$ 521	310	146%
Mapua	780,000	199	\$ 521	322	162%
Brightwater/Hope	522,400	182	\$ 521	339	186%
Kaiteriteri	1,300,000	148	\$ 521	373	253%
Murchison, Wakefield, Pohara	n/a	148	\$ 521	373	253%
Upper Moutere, Motueka and Takaka (excluding Upper Takaka)	n/a	46	\$ 12	34	-74%

18.60 As shown in the table above the additional costs to water club members over the Dam option range between \$310 and \$373 per annum the only reduction is in the district wide fixed rate.

18.61 There would be similar increases for industry and the cross boundary water supplied to Nelson South. It is not clear that Nelson City Council and industries based in Nelson South would in the long term want to be supplied by Tasman District Council. Their disconnection from the Tasman District Council supply would increase costs further to other users.



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19 Technical Aspects of the Waimea Community Dam

Land and Access

- 19.1 All of the private interests have been acquired except for Ngati Koata and Tasman Pine. Although agreements with Ngati Koata and Tasman Pine have not been finalised, we are down to finalising detail.
- 19.2 The draft Ngati Koata agreement has been provided to them. The main compensation is the roading and the modest annual fee.
- 19.3 The proposed agreement with Tasman Pine is nearly complete. The main issue with Tasman Pine is replacement access; all parties are happy with the proposed options which have been finalised and costed. The compensation for the affected trees is fairly minor.
- 19.4 The required interests have been taken compulsorily from JWW Forestry Limited. An agreement on compensation has been sent in draft form. The company is considering this. If in the unlikely event that agreement cannot be reached, the matter will be determined by the Land Valuation Tribunal.
- 19.5 The Local Bill is progressing and will provide for the inundation of the Department of Conservation land. The bill is not expected to pass prior to financial close. CIIL have confirmed provided all other conditions have been met, that their support will be confirmed by 15 December 2018 subject only to the bill passing in due course. The Local Bill is covered in more detail below.

Commercial Arrangements

- 19.6 Work on the various documents to establish the CCO and give effect to the JV agreed terms will recommence post this meeting. As noted previously initial drafts of key documents have been produced and are currently being reviewed by all parties. Most matters are covered by the existing term sheets and these term sheets remain commercially confidential. Any changes to the proposed structure as it is finalised may require adjustment to the documents.
- 19.7 By way of a reminder the project documents comprise -
- 19.7.1. Direct Deed
 - 19.7.2. Project Agreement
 - 19.7.3. Shareholders Agreement and CCO Constitution
 - 19.7.4. Wholesale Water Augmentation Agreement and 'downstream' agreements
 - 19.7.5. Documents relating to the CIIL/WIL facility
 - 19.7.6. Documents relating to the CIIL/Council environmental loan facility
 - 19.7.7. Credit Support Agreement.
- 19.8 A number of these documents are likely to be impacted by the commercial arrangements surrounding closing the \$26m funding gap. Notwithstanding, we will continue with our JV partners to work to complete key provisions in the documents. This is to ensure that a target 30 November 2018 financial close can be met and all matters can be finalised by 15



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December 2018 when the CIIL funding would cease to be available. Negotiations will recommence on the finalisation of the documents underlying the JV post this Council meeting.

- 19.9 WIL may raise additional funding by the issuing of Convertible Preference Shares (CPS) to an institutional investor. This would dilute the long term value of the existing shares. In effect they would be discounting future share sales to obtain additional cash up front. This would be advantageous for the Council as it reduces some of the risks surrounding the refinancing of the CIIL borrowing. This is because as CPS convert to normal shares in WIL, the holders will be responsible for meeting an ongoing share of the operating and finance costs. Having refinancing costs spread over a wider shareholder base will assist with keeping those costs affordable.
- 19.10 The JV partners have now agreed that arrangements for hydro-power generation will be included with in the existing agreements prior to financial close. This will be by way of a separate heads of agreement covering the costs of hydro-power and its operation. Any hydro-power scheme will need to operate without impacting on the primary purpose of the dam. The marginal cost of including a hydro-power option will need to be met in full by the Council.
- 19.11 The construction of the dam is only made possible through Tasman District Council and WIL working collaboratively in the funding and development of the dam, during the construction phase, but also on an ongoing basis as the debt funding to develop the dam is repaid and the operating and capital expenses for the operation of the dam are shared between the parties. Accordingly, the Re-Supply Principles prevent WIL from supplying water to Tasman District Council's existing reticulated water supply customers, and prevent Tasman District Council from supplying water to WIL's agricultural and horticultural irrigation scheme customers. The Council has considered these Re-Supply Principles from a competition law perspective, and is comfortable that the principles do not give rise to issues under the Commerce Act, including because:
- 19.11.1 The Council and WIL be owning and operating the dam as a collaborative joint venture activity on an ongoing basis;
- 19.11.2 The Council is committing to the dam project in order to achieve water supply for its Council water supply obligations, and WIL is committing to the dam project in order to achieve water for irrigation scheme purposes;
- 19.11.3 Neither could commit to funding and operating the dam without the returns provided under the Re-Supply Principles; and
- 19.11.4 In the absence of the collaborative joint venture between the Council and WIL, the dam could not be built and operated on an ongoing and viable basis.
- 19.12 Accordingly, we are comfortable that enabling the construction and funding of the dam is in the interests of customers, and does not reduce any competition that could otherwise exist in the absence of the Re-supply Principles.
- 19.13 Concern has been raised that a major industrial water user has purchased shares in WIL. WIL have confirmed that they have made it clear in a very specific discussion with them, that they would NOT be able to use these WIL share rights for their industrial water. They resolved to purchase WIL shares anyway on the basis of their land holdings.



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Local Bill

- 19.14 In order for the construction of the Waimea Community Dam to proceed, security of tenure of the dam structure and the inundated area behind the dam is needed. The Dam will be constructed on 1.35 hectares (ha) of Lee riverbed land that is presently vested in the Crown. The Dam will result in the formation of an 87.5 ha lake. Approximately 11% of the lake (i.e. 9.67 hectares) will inundate land of the Mount Richmond State Forest Park that is vested in the Crown. Council has been advised that it is unable to acquire (vest or easement) this land through the Public Works Act. As such, the Council has decided to pursue the option of a Local Bill. The Tasman District Council (Waimea Water Augmentation Scheme) Bill 2018 seeks to vest the 1.35 ha of land for the Dam structure to the Council and to confer a 9.67 ha inundation easement directly to the Council.
- 19.15 The Bill states that the land vested to the Council may be transferred to a Council- controlled organisation. Should the dam not proceed or is subsequently removed, there is an obligation to sell the land back to the Crown. The easement will only be in effect for so long as there is a lake inundating the easement area. At all other times, the public will have the same level of access to the non-inundated area as they currently have to the immediately surrounding Mount Richmond State Forest Park.
- 19.16 The Council has completed the required preliminary procedures for a Local Bill. A three-week notification period ceased on 26 July 2018 and all directly interested parties have been informed of the Bill (including iwi, relevant government departments and other relevant stakeholders). All documentation for the Bill was submitted to Parliament's Office of the Clerk and Hon. Dr Nick Smith introduced the Bill to the House on 14 August 2018. It is likely it will receive its First Reading on 5 September 2018, and assuming it passes the First Reading, it will be sent to the Select Committee for consideration. The Select Committee may or may not make modifications to the Bill and then a public consultation process may follow. The Council remains in control of the process and may withdraw the Bill at any time.

Construction Programme

- 19.17 The project has been developed and priced on the basis of starting the construction phase in early January 2019. The following table outlines the various components of the construction phase with their intended commencement and completion dates.

Table Showing Construction Tasks and Programme

Task	Start Date	End Date
Contractor Mobilises	23/11/2018	7/12/21
Establish on Site	7/1/2019	29/03/19
Clear Vegetation	7/1/2019	29/3/2019
Site Roothing Works	7/1/2019	29/3/2019
Earthworks	14/1/2019	5/2/2021
River Diversions	28/1/2019	6/7/2020
Plinth and Grouting Works	1/2/2019	7/10/2020
Concrete Face	18/5/2020	26/5/2021

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Wave Protection	17/11/2020	24/9/2021
Spillway	27/7/2020	9/7/2021
Bridges	11/3/2021	8/9/2021
Mechanical & Electrical	21/6/2021	7/10/2021
Fish Pass	27/7/2020	19/3/2021
Instrumentation	1/2/2021	22/9/2021
Miscellaneous Structures	18/9/2020	28/7/2021
Fill Reservoir	22/9/2021	3/12/2021
Commissioning	22/9/2021	9/12/2021
Project Close Out	18/11/2021	9/2/2022
Official Opening	10/2/2022	

19.18 At this stage the programme indicates that the reservoir will start filling in September 2021 and be filled by early December 2021. With final commissioning and project closeout it is intended that the dam will be officially opened in February 2022. Potentially the dam could be releasing water during the summer of 2021/22.

Vegetation/Detritus Clearing

19.19 The vegetation clearance methodology has been finalised with Fulton Hogan Taylor Joint Venture during the ECI phase and is outlined as follows:

- a) The mature pines are to be logged by a logging contractor and sold where appropriate. The remaining vegetation will be raked down the hill by excavator and mulched. The mulching will either be undertaken by a mobile mulcher or the vegetation will be carted to a mulching site. Stumps will be removed within the dam and spillway construction footprint. Where the terrain is steep the vegetation raking will be winch assisted.
- b) The medium size pines and scrub will be cut down by mechanical felling or manual felling depending on the terrain. It will be cleared off the hill by shovel logging/slash raking to where it can be put through the mobile mulcher or loaded and carted to the mulcher site. In steep terrain the shovel logging/slash raking will be winch assisted. In steeper terrain a winch logging operation will clear the hill.
- c) Small pines and scrub will be mulched by an excavator and/or a tractor fitted with mulching attachments. The mulched material will be left on the ground to decompose. These areas will need to be mulched twice about 12-18mths after first mulch to further break down the vegetation and enhance decomposition. In steep terrain the excavator mulching will be winch assisted. Where the ground conditions are too rocky for excavator and tractor mulchers they will need to be raked and mulched by the mobile mulcher.
- d) In the areas where there are steep terrain and bluffs, the vegetation will be felled by a rope access manual felling team.

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- e) The same methodology as outlined above will be used for native vegetation areas. Any mature native logs will be stockpiled and offered to iwi/landowners depending on where they come from.
 - f) The Douglas fir trees will be logged by Tasman Pine. The clearing of vegetation off the hill and at the landing will be raked up and mulched.
 - g) The mulching will be done by a 950hp Horizontal Grinder. The grinder is mobile and can either be taken to the work site and vegetation fed directly or it can be fixed in an appropriate location and the vegetation brought to it.
 - h) The mulch will be spread by a large wheel tractor and mulch spreader with side conveyer. Mulch will be spread within appropriate areas of the reservoir footprint and on adjacent landowner forests. The landowners have indicated they would like to benefit from the mulch compost. Mulch will also be used to stabilise exposed areas as appropriate.
- 19.20 The vegetation clearance has been scoped, assessed and priced by Fulton Hogan Taylor Joint Venture. The fixed price for vegetation clearance is \$2,435,265 (plus GST). Any revenue from the sale of timber has not been accounted for but will be credited to Waimea Water as a recovery against the project. An assessment of likely revenue has not been undertaken.

Geology of the Lake Footprint and Potential Leakage

- 19.21 The rock beneath the dam and reservoir generally has a very low permeability. There are a number of fractures in the basement rock and these do influence groundwater flow. During its geological investigations and assessments, Tonkin and Taylor has not encountered any defects that could lead to loss of water from the reservoir that would have a long term effect on reservoir storage.
- 19.22 Higher permeability joints and zones of shattered rock were identified in the investigations, notably in the near surface rock where weathering has acted to dilate the rock mass. Tonkin and Taylor expect that these features will take up water on initial lake filling and will provide an additional (small) storage volume to the reservoir. In dryer periods when the reservoir is drawn down, the stored water in the rock will seep back into the reservoir, ie, it is not lost.
- 19.23 There is potential for loss of water beneath the dam footprint as this is where the hydraulic gradient is the highest i.e. the water level on the upstream side of the dam is 50 m higher than the water on the downstream side of the dam. The difference in water level acts as a driving force to push water through cracks. This is why Tonkin and Taylor has designed a number of measures into the dam to limit the potential for seepage beneath and around the side of the dam.
- 19.24 Special attention is paid during construction to provide a seal along the base of the dam and up the full height of the dam abutments. This is the area where there is the greatest potential for seepage. This seal is achieved by drilling holes and pumping cement into any open joints in the rock. The design is to ensure that seepage through the rock around the dam will be less than one million times lower than the flow in the river. Hence seepage losses are insignificant with regard to inflow into the river.



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19.25 It is always expected that there is some seepage back into the river downstream of the dam. This will be significantly lower than the requirement for a minimum discharge from the dam to maintain a residual flow in the river. The residual flow requirement is 500 litres per second. Seepage losses will form a small part of this flow and will not adversely impact on reservoir storage.

Sedimentation of the Reservoir

19.26 In November 2009 NIWA presented a report on the "Analysis of Suspended Sediment Data from the Upper Lee River, Nelson".

19.27 From April 2007 until the time of the NIWA report, the Council undertook the monitoring of water turbidity and suspended sediment concentration at a site draining 65 kms of the native-forested Upper Lee River catchment in the Richmond Range, Nelson. The main objectives of this monitoring was to assess water clarity and potential sedimentation rates in a proposed reservoir. NIWA then analysed the data and determined the annual average sediment load expected at the monitoring site.

19.28 The analysis approach included calibrating the turbidity record to a record of cross-section mean suspended sediment concentration using sediment samples collected with an auto-sampler and with a depth-integrating sampler. A good relationship was found between event sediment yield and event peak discharge, and this was used to estimate the average suspended sediment yield over the 2.2 year duration of flow record (April 2007-August 2009). The sediment yield over this period was approximately 2900 tonnes/year (45 tonnes/km²/year).

19.29 By comparison with the longer flow record from the adjacent Wairoa catchment, this figure is considered to be representative of the average sediment yield over the past two decades. The Upper Lee sediment yield per unit catchment area is 3-7.5 times less than that from the adjacent Wairoa and Pelorus catchments.

Hydrological Links between Wairoa and Waimea Rivers and Aquifers

19.30 There has been extensive research, modelling and peer reviewing of the hydrological links between the Wairoa and Waimea Rivers and the aquifers under the Waimea Plains.

19.31 The initial groundwater modelling was undertaken by GNS and outlined in its report "Groundwater-river interaction modelling for a water augmentation feasibility study, Waimea Plains Nelson" dated March 2007. Tonkin and Taylor referred to the GNS report in its report "Waimea Water Augmentation – Component 1 Water Demand and Availability" dated May 2007. The conclusion from these reports was that for the Wairoa and Waimea Rivers there was a strong connection with the aquifers.

19.32 The Waimea Plains cover an area of 75km². They are formed of late Quaternary terrestrial terrace and floodplain gravels deposited by the Waimea River major tributaries. There are three major aquifers under the Waimea Plains;

- Lower Confined Aquifer (LCA);
- Upper Confined Aquifer (UCA); and
- Appleby Gravel Unconfined Aquifer (AGUA).



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- 19.33 The AGUA is 15m thick with the water table two to three metres below ground level. The main river recharge zones are between the Wairoa Gorge and Brightwater Township, the area upstream of the State Highway 60 Bridge near Appleby and downstream of Spring Grove on the Wai-iti River.
- 19.34 The UCA extends from its recharge zone near the Wairoa Gorge towards the coast at Rabbit Island in the depth range of 18-32m. The UCA is ruptured within the recharge zone and also from the Appleby northwards, providing a hydraulic connection with the overlying AGUA.
- 19.35 The LCA is lithologically similar to the UCA. It extends from the Wairoa Gorge to beyond the entrance of the Waimea Inlet east of Rabbit Island. It is 30-50m deep and is recharged near the Wairoa Gorge. Recharge occurs in winter from gravel fans, which recharge the UCA from the eastern hills. Seawater intrusion is a potential concern in this aquifer because of large pumping wells near the coast.
- 19.36 The groundwater-river interaction model was developed by GNS incorporating all three aquifers. Three generations of groundwater models have been developed and tested for the Waimea Plains. All three models were calibrated using river flow information available at the time. Landcare Research stated in its September 2016 peer review that the MODFLOW groundwater flow model is well calibrated and can be relied on to predict the response of the groundwater system to varying scenarios of water management.
- 19.37 The March 2007 GNS report outlined three modelling stages that were undertaken:
- a) Stage 1 comprised establishing the river flow at Irvine-Wairoa Gorge to maintain a minimum flow of 500 l/s at the Nursery-Appleby Bridge in the Waimea River based on actual usage in a 1-in-10 dry year (1991/92). The modelling calculated that the minimum flow at Irvine-Wairoa Gorge would need to be 1650 l/s and 1825 l/s to maintain minimum flows of 250 l/s and 500 l/s respectively at Nursery Appleby Bridge;
 - b) Stage 2 built on Stage 1 and deduced the flow rate at the Irvine-Wairoa Gorge needed to maintain the target minimum flows for two scenarios: 600 l/s and 1100 l/s in the Waimea River at the Nursery-Appleby Bridge in the Waimea River in a nominal dry year (1982/83). The modelling calculates that a minimum flow at Irvine-Wairoa Gorge of 2513 l/s and 2981 l/s would be required to maintain a minimum flow of 600 l/s and 1100 l/s respectively at the Nursery-Appleby Bridge;
 - c) Stage 3 was a forward scenario simulation using a 1-in-20 year drought (1982/83) to confirm that the proposed augmented water release regime by Tonkin and Taylor will meet the downstream requirements. The modelling confirmed that a minimum flow at Irvine-Wairoa Gorge of 2663 l/s and 2981 l/s would be required to maintain a minimum flow of 600 l/s and 1100 l/s respectively at the Nursery-Appleby Bridge.
- 19.38 The March 2007 GNS report did also note that the sensitivity of aquifer recharge was affected by riverbed level changes and potential seawater intrusion in certain areas. Landcare Research also undertook a peer review of the this report covering the groundwater modelling as well as water demand profiling, catchment and storage modelling and the coupling of groundwater and surface water components.
- 19.39 This whole subject was further peer reviewed by Landcare Research in answering specific questions from individuals in the community. This review by Landcare Research is outlined in its report "Waimea Community Dam: Peer Review of Waimea Plains hydrology

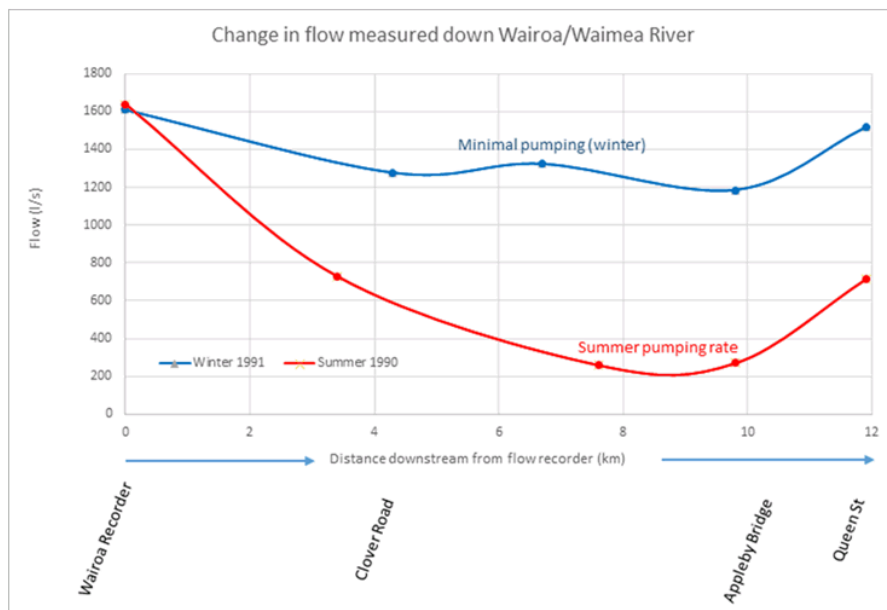


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underpinning the proposal" dated September 2016. This report concluded that based on the review of the documents, comparison of the GNS and Aqualinc modelling results and additional modelling of scenarios that, subject to the observations made in its review, the hydrological and modelling basis for recommendations affecting design and operation of the proposed Waimea Community Dam is fit-for-purpose.

- 19.40 In addition to this information the Council has also logged flows in the Wairoa and Waimea Rivers from the Wairoa Gorge recorder to Lower Queen Street. In 1990/91 there was an occasion where the summer and winter flows coincided at the Wairoa Gorge recorder. The summer flows were measured whilst abstraction was occurring from the aquifers in the Waimea Plains.
- 19.41 The graph below shows how the summer flows dropped compared to the corresponding winter flows when abstraction was presumed to be at minimal levels. It is clear that over the first 4km that approximately 1000 l/sec is lost in summer compared to 300 l/sec in winter. Over 7.5 km approximately 1,300 l/sec in the summer and 500 l/sec in the winter. Although there would be greater evaporation in the summer, it is likely that most of the loss would be to groundwater and aquifers.

Table Showing the Changes in flow in summer and in winter



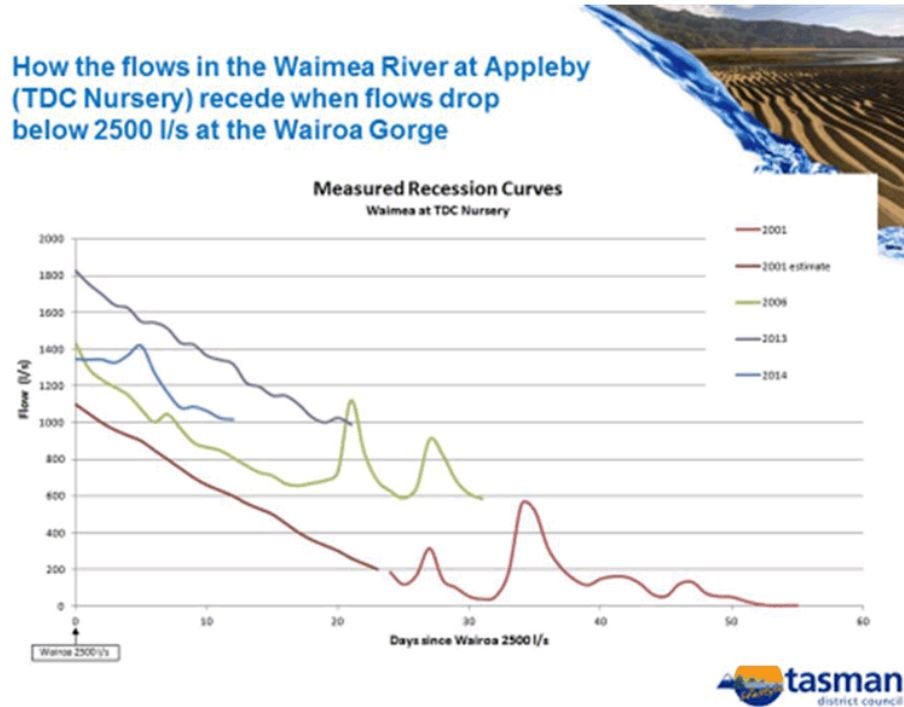
- 19.42 The graph below outlines the actual flow recession that is measured at the Nursery-Appleby Bridge when the flows at the Wairoa Gorge reach 2,500 l/sec.
- 19.43 It is clear from this graph that in 2013 the flow was around 1,800 l/sec which indicates a loss of 700 l/sec over the reaches of the Wairoa and Waimea Rivers between the Wairoa Gorge and Nursery-Appleby Bridge.



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- 19.44 Correspondingly in 2001 it is estimated that the flow was around 1,000 l/sec which indicates a loss of 1,500 l/sec over the same reaches.
- 19.45 Although there will be some losses arising from evaporation, it is very likely that most of the losses are a direct consequence of water being transmitted into the aquifers.

Table Showing how the flows in the Waimea River recede when flows drop below 2,500 l/sec at the Wairoa Gorge



Hydro Generation Option

- 19.46 At its meeting 28 June 2018, Council considered a report that indicated that the hydro generation option was still viable. However it needed to have more certainty around construction costs and commercial items to confirm its viability. The indicative costs were outlined as being in the range of \$5.68 million to \$6.54 million with estimated revenue of between \$485,000 and \$624,000 per annum in 2023.
- 19.47 Council passed the following resolution that kept the option of hydro-generation on the table for inclusion into the Waimea Community Dam project;
 1. That the Full Council receives the Waimea Community Dam - Hydroelectric Power Generation report RCN18-06-05; and

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2. instructs staff to negotiate a separate agreement with the Joint Venture Partners for the provision of hydro generation in association with the proposed Waimea Community Dam; and
 3. notes that the Council does not expect there to be any compensation or facilitation payments to the Joint Venture Partners or any adjustment to the previously agreed allocation of operating costs as a result of any agreement on the provision of hydro generation in association with the proposed Waimea Community Dam; and
 4. notes that progressing with detailed design and marketing scenario assessments for the hydro generation option will be delayed until the dam project is approaching financial close; and
 5. approves Council funding of up to \$80,000 to ensure that a 22kV power line is installed as part of the dam construction.
- 19.48 The hydro-generation will be considered further by Council when the project is approaching financial close.

20 Attachments

1. Attachment A - MWH Evaluation of Urban Water Supply Alternatives
2. Attachment B - Further Information on Urban Water Supplies
3. Attachment C - Onsite Storage vs Waimea Community Dam
4. Attachment D - Nelson City Council Water Supply
5. Attachment E - Weirs on the Waimea and Wairoa Rivers
6. Attachment F - Managed Aquifer Recharge (MARs)
7. Attachment G - Northington Report
8. Attachment H - Oxford University Paper
9. Attachment I - List of Specialist Reports
10. Attachment J - 9 August 2018 Report to Full Council

Waimea Community Dam – Project Agreement Summaries

The Following Table sets out the agreements that make up the overall project.

Document Name

Waimea Water Ltd - Constitution

Shareholders Agreement - Waimea Water Ltd

Wholesale Water Augmentation Agreement - Council

Wholesale Water Augmentation Agreement - Waimea Irrigators Ltd

Facility Agreement (Waimea Community Dam - Environmental Term Loan)

Project Facility Agreement (Waimea Community Dam)

TDC/WWL Shareholder Loan Agreement

General Security Deed - (Waimea Community Dam)

Feather Weight Security Deed (Waimea Community Dam - Borrower)

General Security Deed (Waimea Community Dam - Guarantor) CIIL/TDC

Project Deed - Waimea Community Dam

Hydro Power Term Sheet - Waimea Water Limited

Ngati Koata Land and Water Use Partnering Deed

Agreement to Acquire Interest in Crown Forest Licence - Tasman Pine Forests Ltd

Shareholder Water Augmentation Agreement - WIL

1. Waimea Water Ltd – Constitution

- 1.1 The Constitution for Waimea Water Limited ("WWL"), when read in conjunction with the Companies Act 1993 and the WWL shareholders' agreement, sets out the rules governing WWL. The Constitution has been prepared on standard terms, subject to amendments to reflect the agreements between Tasman District Council ("TDC") and Waimea Irrigators Limited ("WIL").

2. Shareholders' Agreement - Waimea Water Limited

- 2.1 The Shareholders' Agreement ("SHA") for Waimea Water Limited ("WWL"), when read in conjunction with the WWL Constitution and the Companies Act 1993, sets out the relationship between the shareholders of WWL and how they envisage the business of WWL being carried out.
- 2.2 The sole initial business of WWL is to construct, operate and maintain the Waimea Community Dam ("Dam"), and it is the sole entity through which all Dam-related activities occur (including financing of construction, setting and collecting of Water Charges and collecting equity contributions from the shareholders). WWL is the project vehicle for the delivery and management of the Dam project, and has been incorporated as a joint venture company that is used to contract with third parties involved in the project, e.g. CIIL, the construction contractor, etc.
- 2.3 The parties to the SHA are Tasman District Council ("TDC") and Waimea Irrigators Limited ("WIL"), and WWL as the Company whose affairs are being governed. New shareholders, such as Nelson City Council ("NCC"), must become party to the SHA by acceding to the SHA upon becoming a shareholder.
- 2.4 The SHA also reflects TDC's control of WWL including its:
 - majority shareholding (a minimum of 51% at all times, either in its own right or in conjunction with NCC); and
 - ability to appoint the majority of WWL directors (TDC has the ability to appoint four of the seven directors).
- 2.5 TDC is also ensured veto rights over key decisions through the Shareholder Reserved Matters, which require the consent of both TDC and WIL as "Major Shareholders".

3. Wholesale Water Augmentation Agreement – Council

- 3.1 A Wholesale Water Augmentation Agreement ("WWAA") is intended to give the shareholders of Waimea Water Limited ("WWL") the right to affiliate their water permits.
- 3.2 As such, each of Tasman District Council ("TDC") and Waimea Irrigators Limited ("WIL") will enter into a WWAA, and if Nelson City Council becomes a shareholder in WWL, it will also enter into a WWAA (on substantially the same terms as the TDC WWAA). Each shareholder who enters into a WWAA is referred to as a "Head Water User".
- 3.3 The WWAA regulates the relationship between each Head Water User and WWL, setting out the payment of Water Charges by the relevant Head Water User. While

both TDC and WIL are expected to pay Water Charges relating to the dam operating costs (in a 51:49 split), WIL is also required to pay 'Dam Costs' that will fund WWL's repayment of the loans and interest on other costs in relation to the loans from Crown Irrigation Investments Limited ("CIIL") and TDC.

- 3.4 The WWAA also sets down the obligations of WWL, including its operation of the Dam on a cost-recovery and no liability basis.
- 3.5 The WWAAs are, for the most part, identical, except for certain provisions that relate to only one of TDC or WIL.

4. Wholesale Water Augmentation Agreement – Waimea Irrigators Ltd

- 4.1 A Wholesale Water Augmentation Agreement ("WWAA") is intended to give the shareholders of Waimea Water Limited ("WWL") the right to affiliate their water permits.
- 4.2 As such, each of Tasman District Council ("TDC") and Waimea Irrigators Limited ("WIL") will enter into a WWAA, and if Nelson City Council becomes a shareholder in WWL, it will also enter into a WWAA (on substantially the same terms as the TDC WWAA). Each shareholder who enters into a WWAA is referred to as a "Head Water User".
- 4.3 The WWAA regulates the relationship between each Head Water User and WWL, setting out the payment of Water Charges by the relevant Head Water User. While both TDC and WIL are expected to pay Water Charges relating to the dam operating costs (in a 51:49 split), WIL is also required to pay 'Dam Costs' that will fund WWL's repayment of the loans from Crown Irrigation Investments Limited ("CIIL") and TDC.
- 4.4 The WWAA also sets down the obligations of WWL, including its operation of the Dam on a cost-recovery and no liability basis.
- 4.5 The WWAAs are, for the most part, identical, except for certain provisions that relate to only one of TDC or WIL.

5. Facility Agreement (Waimea Community Dam Environmental Term Loan)

- 5.1 Crown Irrigation Investments Limited ("CIIL") will provide an environmental loan facility ("Facility") to Tasman District Council ("TDC") under the Facility Agreement (Waimea Community Dam Environmental Term Loan) ("Facility Agreement"). The purpose of the Facility is to enable TDC to fund, in part, its equity investment in Waimea Water Limited ("WWL") in accordance with the Shareholders Agreement.

6. Project Facility Agreement (Waimea Community Dam)

- 6.1 Crown Irrigation Investments Limited ("CIIL") will provide loan facilities ("Facilities") to Waimea Water Limited ("WWL") under the Project Facility Agreement (Waimea Community Dam) ("Project Facility Agreement"). The purpose of the Facilities is to fund Project Costs.

7. TDC/WWL Shareholder Loan Agreement

- 7.1 Tasman District Council will provide a loan facility ("Facility") to Waimea Water Limited under the TDC/WWL Shareholder Loan Agreement ("Loan Agreement"). This is sometimes referred to as the CCO loan. The purpose of the Facility is to part-fund the Project.

8. General Security Deed (Waimea Community Dam – Borrower)

- 8.1 The General Security Deed (Waimea Community Dam – Borrower) ("GSD") sets out the terms under which Waimea Water Limited ("WWL") grants all-asset general security in favour of Crown Irrigation Investments Limited ("CIIL").
- 8.2 TDC is also party to identical documents (except second ranking).

9. Featherweight Security Deed (Waimea Community Dam – Borrower)

- 9.1 The Featherweight Security Deed (Waimea Community Dam – Borrower) ("Featherweight") sets out the terms under which Waimea Water Limited ("WWL") grants a featherweight security in favour of Crown Irrigation Investments Limited ("CIIL").
- 9.2 TDC is also party to identical documents (except second ranking).

10. General Security Deed (Waimea Community Dam – Guarantor)

- 10.1 The General Security Deed (Waimea Community Dam – Guarantor) ("GSD") sets out the terms under which Waimea Irrigators Limited ("WIL") grants all-asset general security in favour of Crown Irrigation Investments Limited ("CIIL").
- 10.2 TDC is also party to identical documents (except second ranking).

11. Project Deed – Waimea Community Dam

- 11.1 The Project Deed is an agreement between Tasman District Council ("**TDC**"), Waimea Irrigators Limited ("**WIL**"), Waimea Water Limited ("**WWL**") and Crown Irrigation Investments Limited ("**CIIL**").
- 11.2 The Project Deed is effectively an umbrella document, which covers matters of relevance to the whole project, and takes precedent over every project document other than the financing documents.
- 11.3 The Project Deed sets out the overarching intentions of the parties in carrying out the project. It also covers what happens if:
- there is a project costs overrun or underrun;
 - TDC takes an action (as regulator) which removes or substantially alters affiliation rights, including as to the compensation payable by TDC in that regard;
 - TDC, WIL or WWL fail to pay amounts owing when due, including the credit support provided by TDC, the security held by CIIL and TDC, the subordination of TDC's security to CIIL, and TDC and CIIL's respective step-in and take-out rights;
 - the loan from CIIL is refinanced, including what rights TDC and WWL will grant to the new financier; and
 - TDC wants to exercise its option to undertake hydro in accordance with the hydro term sheet.

12. Hydro Term Sheet – Waimea Water Limited

- 12.1 The hydro term sheet gives Tasman District Council ("TDC") the option to add hydro assets to the Waimea Community Dam ("Dam"), either during construction of the Dam, or at such later time as it chooses, on and subject to the terms of that term sheet.
- 12.2 TDC and Waimea Water Limited ("WWL") are the key parties to the hydro term sheet, noting that TDC has the ability to nominate or set up an entity ("HydroCo") to construct, own and operate the hydro assets, and Waimea Irrigators Limited ("WIL") and Crown Irrigation Investment Limited ("CIIL") have various approval rights. There is no restriction as to the ownership of HydroCo, that is, it can be TDC-owned or not, noting though that the approvals required in the hydro term sheet cover the capability, capacity and creditworthiness of HydroCo, and TDC will be responsible for HydroCo's performance until the fully-termed hydro agreements are entered into or the hydro term sheet is terminated.
- 12.3 As can be expected in a highly leveraged joint venture structure with project finance and where the primary purpose is water augmentation, various approvals are required from WIL and CIIL to the construction and operation of the hydro assets to ensure that the primary purpose is maintained, and parties interests and risks are not impacted. These approvals are focused on ensuring that the Dam has a primary purpose of providing security of a reliable supply of water under the affiliated permits regime. This is also because CIIL is focussed on the success of the Dam, to facilitate repayment of its loan into the project. Both WIL and CIIL, and TDC and WWL are required to act in good faith in determining whether to grant such approvals.

13. Second-ranking security documents

- 13.1 Council will also benefit from and be party to a second-ranking security package granted by Waimea Water Limited and Waimea Irrigators Limited as security for the Council/Waimea Water Limited shareholder loan agreement. The security documents will be cloned from the first-ranking security granted in favour of CIIL which is referred to in the report once the first-ranking security is finalised. The terms and conditions of the Council's second-ranking security will be the same as CIIL's first-ranking security except for consequential changes."

14. Ngati Koata Land and Water Use Partnering Deed

- 14.1 At the time of writing the Ngati Koata Partnering Deed was being finalized. The deed is subject to the project proceeding. The land is part of Ngati Koata's Treaty settlement and subject to a forestry right. The fundamental difference between this and the other land acquisition arrangements in the Partnering Relationship between Ngāti Koata and Council that it sets up.
- 14.2 The deed provides for two approaches at the option of Ngati Koata:
- Issuing an inundation easement in favour of Council for approximately 20Ha of their land that will be inundated if the projects proceeds.
 - If requested Council purchasing the entire 366ha block. If council purchased the entire block it would sell the 20ha needed to Waimea Water Ltd and retain

the balance of the property as part of the Enterprise Activity forestry operations.

14.3 The agreement also provides for :

- Partnering Relationship between Ngāti Koata and Council
- A Ngati Koata director on the CCO Board
- Ngati Koata having strong influence over the naming of the dam and other elements of the Project.
- If not a wholly owned Council venture, Council will give Ngāti Koata the first opportunity to invest in any hydro power proposal.
- If the Dam Company ever became a Council Controlled Trading organisation (CCTO) a 10% share of any distribution. Note that the company constitution and the other project arrangements effectively prohibit the CCO operating for profit.

15. Agreement to Acquire Interest in Crown Forest Licence - Tasman Pine Forests

15.1 This agreement is required as Tasman Pine have a forestry right over the Ngati Koata Land. Also the dam impacts on the existing forestry roads and operations. The deed is being negotiated on normal commercial terms.

16. Shareholder Water Augmentation Agreement – WIL

16.1 This agreement sets out the arrangement between WIL and irrigators/rural scheme members as to their respective rights and responsibilities in respect of the supply of water and the payment of charges. If the Secondary water supply agreement is suspended or cancelled the irrigator is no longer an affiliated and under the TRMP loses the better water security that all affiliated permit holders have. Details of the agreement and a summary of the key clauses was set out in the WIL Product Disclosure Statement.

16.2 The following summary of the WIL Shareholder Water Augmentation Agreement is replicated from their updated Product Disclosure Document.

17. Summary of Shareholder Water Augmentation Agreement

17.1 The SWAA provides the terms and conditions upon which Shareholders are entitled to Dam Water.

17.2 The following is a summary of some of the key provisions:

- **Term** (clause 3): the term of the SWAA is open ended and continues until such time as it is terminated in accordance with the provisions of the SWAA (i.e. by agreement or for breach).
- **Water Augmentation and Affiliation** (clause 4): WWL releases Dam Water into the Upper Lee River in accordance with the provisions of the WWAA and the

Shareholder Agreement. The Shareholder, under the SWAA, is entitled to apply to TDC under the TRMP to Affiliate its Ground Water Permit or Surface Water Permit for a volume of water represented by the number of Water Shares held by the Shareholder at a rate of 300m³ of water per week, per Water Share.

The release of Dam Water is always subject to the availability of Dam Water, the terms of the Resource Consent, the Ground Water Permit(s) and/or Surface Water Permits, the terms of the WWAA (as the case may be) and any statutory or regulatory requirements including but not limited to, the TRMP. The Company will use reasonable endeavours to procure WWL to release the required volume of Dam Water, but does not guarantee to the Shareholder the availability or release of Dam Water.

In the event of a TDC Trigger Event, WIL will, in its sole discretion, act as agent for the Shareholder in seeking the appropriate compensation (if any).

- **Water Charges** (clause 5): the Shareholder shall pay Water Charges on a per Water Share basis. The Water Charges are determined by the Board in their sole discretion. In the event of non-payment, a penalty interest rate of 5% above the commercial overdraft of WIL's Bank will accrue from the date of non-payment to the date payment is actually made.
- **Licensing** (clause 6): the Shareholder may licence any Surplus Water in accordance with the provisions and restrictions contained in clause 6.
- **Metering** (clause 7): this clause provides WIL with the ability to access water use records and to also access Shareholder's Land to request testing to ensure compliance with the Shareholder Water Augmentation Agreement.
- **Company's obligations** (clause 8): this clause contains standard obligations on the part of WIL including obligations to ensure that that WWL undertakes all reasonable maintenance of the Scheme, promptly pay and discharge any amounts or obligations in relation to the taking of Dam Water or the operation of the Scheme including its obligations to WWL. The Company may also implement Scheme policies relating to the release of Dam Water.
- **Shareholders obligations** (clause 9): this clause contains relatively standard obligations requiring the Shareholder to install and maintain their own irrigation infrastructure required to take and distribute Dam Water on their land. The Shareholder must at all times hold the number of Water Shares as provided for in their respective SWAA unless agreed in writing by WIL, they must comply with the Constitution and their Ground Water Permit and/or Surface Water Permit.
- **Transfer of Shares** (clause 10): the Shareholder may transfer its Water Shares in accordance with the provisions and restrictions contained in the Constitution.
- **Breach of Agreement** (clause 11): this clause enables WIL to suspend the Shareholder's right to take and receive Dam Water from the Dam and notify the TDC of the suspension with the result that the Shareholder Affiliation of the Shareholder's Ground Water Permit and/or Surface Water Permit will be suspended by the TDC. WIL may also cancel the SWAA and forfeit the breaching Shareholder's Water Shares.

- **Termination** (clause 12): this clause sets out the requirement for the Shareholder to be a Shareholder in WIL, and the ability to terminate in the event that the Shareholder ceases to be a Shareholder or if certain events occur, for example if the Shareholder is put into receivership.

9 CONFIDENTIAL SESSION

9.1 Procedural motion to exclude the public

The following motion is submitted for consideration:

That the public be excluded from the following part(s) of the proceedings of this meeting. The general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter, and the specific grounds under section 48(1) of the Local Government Official Information and Meetings Act 1987 for the passing of this resolution follows.

This resolution is made in reliance on section 48(1)(a) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by section 6 or section 7 of that Act which would be prejudiced by the holding of the whole or relevant part of the proceedings of the meeting in public, as follows:

9.2 Confidential Waimea Community Dam - Project Agreements

Reason for passing this resolution in relation to each matter	Particular interest(s) protected (where applicable)	Ground(s) under section 48(1) for the passing of this resolution
The public conduct of the part of the meeting would be likely to result in the disclosure of information for which good reason for withholding exists under section 7.	s7(2)(i) - The withholding of the information is necessary to enable the local authority to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations).	s48(1)(a) The public conduct of the part of the meeting would be likely to result in the disclosure of information for which good reason for withholding exists under section 7.

9.3 Tasman District Council - Appointment of Fourth Director

Reason for passing this resolution in relation to each matter	Particular interest(s) protected (where applicable)	Ground(s) under section 48(1) for the passing of this resolution
The public conduct of the part of the meeting would be likely to result in the disclosure of information for which good reason for withholding exists under section 7.	s7(2)(a) - The withholding of the information is necessary to protect the privacy of natural persons, including that of a deceased person. s7(2)(i) - The withholding of the information is necessary to enable the local authority to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations).	s48(1)(a) The public conduct of the part of the meeting would be likely to result in the disclosure of information for which good reason for withholding exists under section 7.