

Waimea Dam: Community Consultation on a Possible Nelson Contribution

1. Purpose of Report

1.1 The purpose of this report is to:

1.1.1. Outline the value proposition for Nelson to contribute to the Tasman water augmentation project (Waimea Dam).

1.1.2. Approve the Statement of Proposal for the possible contribution by Nelson City Council (NCC) to the project.

2. Summary

2.1 Water rights are over-allocated on the Waimea Plains. A dam in the Lee Valley is proposed to provide water for the Waimea Plains, industrial and residential areas. It is expected that this will provide water security for the Nelson Tasman region for the next 100 years.

2.2 It is estimated the project will cost \$75.9 million (\$82.5 million including expenditure to date of \$6.58 million) and it is proposed to be funded by the public and private sectors. The Waimea Dam project (the Dam) has the potential to deliver regional economic benefits and, by providing an extra water source, to also improve regional resilience.

2.3 It is not the role of this report to consider again the years of assessment and analysis which resulted in the proposal to build a regional dam. However, it does describe the background to the project and NCC's involvement to date. The evidence for regional economic benefits which will provide value to Nelson is outlined. The report also considers Nelson's future water needs both for the city as a whole and the Nelson South area which has historically been supplied with water by Tasman District Council (TDC). Most of the environmental benefits and negative environmental consequences impact in the TDC area so these are not explored in depth. Finally, the report assesses the options for an NCC contribution via a grant or purchase of equity.

2.4 Support for the Dam project would be consistent with Nelson City Council's approach of principle over many years, to work collaboratively with partners to ensure the best outcomes for the whole region.

- 2.5 It is recommended that a special consultative procedure is undertaken to ensure an appropriate level of community engagement in the Council's decision. A draft Statement of Proposal has been prepared for Council's consideration and is in Attachment 1. (Final comments from the legal advisors are awaited; any changes required will be tabled on the day of the meeting.)

Assumptions

- 2.6 This report includes a number of assumptions as follows:
- 2.6.1 The total cost of the Dam project will be at or below \$82.5million (including expenditure to date).
- 2.6.2 Funding will be received from TDC, Waimea Irrigation Limited (WIL), Crown Irrigation Investments Limited (CIIL) and a Central Government grant from the Freshwater Improvement Fund.
- 2.6.3 If NCC contributes to the project, a new Engineering Services Agreement (ESA) between NCC and TDC will be entered into. A copy of the proposed Terms of the new Engineering Services Agreement, is in Attachment 2.

3. Recommendation

That the Council

Receives the report Waimea Dam: Community Consultation on a Possible Nelson Contribution (R7634) and attachments (A1846450, A1847401, A1761653, A1847397, A1766322, A1382534, A1769513; A1840371); and

Agrees that a contribution to the Waimea Dam project of \$5 million (in addition to the \$413,000 contribution to date) is Council's preferred proposal on which to consult the community; and

Agrees that any contribution from Nelson City Council to the Dam project will be as a grant rather than a purchase of equity in the Dam; and

Notes that any Nelson City Council contribution will be made on the basis of the proposed Terms of the new draft Engineering Services Agreement (A1847401), as detailed in an exchange of letters between the chief executives of both councils;

Approves a Statement of Proposal (A1846450), with any necessary amendments, for the

possible contribution by Nelson City Council to the Waimea Dam project.

Authorises the Mayor and Chief Executive to make minor changes to the Statement of Proposal.

4. Background

Council's involvement

- 4.1 Over the last few years NCC has made submissions to TDC supporting the Dam, including TDC's Long Term Plans, funding and governance options consultation, Tasman Resource Management Plan changes and the Dam Resource Consent Application.
- 4.2 As a financial proposal for the Dam had not been detailed when the NCC Long Term Plan 2015 – 25 was prepared, NCC did not allocate funding but included a comment that *"headroom for the debt associated with a possible contribution has been allowed for in 2018/2019 to align with the construction phases should the dam proceed"*.
- 4.3 Only 20 submissions were received on this topic at that time. The issues raised by submitters included support from irrigators in Tasman, some opposition to contributing to a project outside of the city, and concern that the Dam would not benefit Nelson residents. Other submissions mentioned concerns over the environmental effects of the Dam and some submissions commented on the regional benefits that the Dam is expected to provide.
- 4.4 To date, NCC has contributed \$413,000 to the project. The \$413,000 has been taken from operating expenditure, but loan funded.
- 4.5 The last full report on water matters was made to Council in November 2014. That report set out matters relating to water takes from the Roding and Maitai Rivers, the Waimea Dam and the Engineering Services Agreement between NCC and TDC.
- 4.6 Since then, Council has received presentations from TDC and irrigators on the proposed Dam. The Mayor and officers have also attended meetings with TDC, CIIL and WIL to keep up-to-date with the project. A list of the key parties to the project is in Attachment 3. There have been a number of briefings this year, to inform councillors, and joint workshops with TDC.

Consultation Process

- 4.7 The decision on a contribution to the project has long term implications for the regional economy and is a matter which will generate wide public interest. The decision is sufficiently significant to require a consultation using the special consultative procedure. Following approval by Council, the Statement of Proposal will be released to the public for feedback through the consultation period which will run from 24 October to 24 November 2017. Submitters who wish to speak directly to Council will have the

opportunity to do so at hearings on 7 December 2017 (including an evening session) and, if needed, 11 December 2017.

Project background

- 4.8 Over-allocation of water rights on the Waimea Plains has led to the situation where the Waimea River can run dry over summer months and during these times salt water from Tasman Bay can migrate through the aquifers and threaten coastal wells. The shortage of water over the summer period also results in water rationing most years.
- 4.9 New provisions in the Tasman Resource Management Plan (TRMP) which will apply if the Dam is not built, require a reduction (25 – 50%) in irrigators' water allocations and stricter rules for urban water supplies, including commercial and industrial users. New rationing rules will mean more frequent and more severe restrictions. Further details in relation to the TRMP water rationing provisions are set out in Attachment 4.
- 4.10 Nelson ratepayers will be affected by the changes to the TRMP and new water restrictions as TDC currently provides water to properties in Nelson South and businesses in the Wakatu Industrial Estate.
- 4.11 To respond to the over allocation issue, TDC facilitated the establishment of the Waimea Water Augmentation Committee (WWAC) in 2003 to look into options to resolve the issue.
- 4.12 WWAC commissioned consulting engineers Tonkin and Taylor Limited to review options for the augmentation of water flow to the Waimea Plains. A number of options were considered and then ranked through an iterative process that left the construction of a water storage dam on the upper reaches of the Lee River as the preferred option to address the water supply issue.
- 4.13 Resource consent for a dam with capacity of 13.4 million cubic metres was granted in 2015 and is now held jointly by TDC and the Waimea Community Dam Ltd. (In comparison the Maitai Dam holds 4 million cubic metres. The Maitai Dam provides for business and residential needs, rather than for irrigation).
- 4.14 The Dam will release water to the river network to allow recharging of the Waimea Plains aquifers. A summary of the details on the proposed Dam is in Attachment 5.
- 4.15 Funding for the project to date has come from a variety of sources including Central Government, TDC, Fish & Game and irrigators. As mentioned, NCC has contributed \$413,000.
- 4.16 A number of governance options for the Dam have been proposed over the last few years. The governance structure is the subject of TDC's consultation which is to run concurrently with NCC's. At present the proposal has the establishment a Dam Company (Dam Co) that would be a Council

Controlled Organisation with TDC and WIL (and potentially NCC) as partners.

- 4.17 Central Government has approved financial support to irrigators through CIIL and a grant to TDC from the Ministry for the Environment’s Freshwater Improvement Fund.
- 4.18 The construction work has been tendered but tenders are still to be evaluated and awarded. TDC needs to consult on and decide how its share of the project will be funded, which will require an update to its Revenue and Financing Policy.
- 4.19 TDC included \$25 million in its Long Term Plan 2015-2025. TDC will not finally commit until it has agreed an acceptable investment proposal and tender price, has consulted on the proposal (including to form a CCO) and has confidence that the other parties are able to commit their capital and meet their share of the operating costs.

5. Summary of advantages and disadvantages for Nelson

5.1 The following is a summary of the main advantages and disadvantages that support for the project will generate for Nelson:

Advantages for Nelson
Improved security of supply to Nelson South industrial users that are currently and may in future be supplied by TDC.
Estimated total capital investment of \$3.2 million in the NCC network to supply water from the NCC network to industrial users in Nelson South may not be required.
Potential to access an additional water source of up 22,000 m ³ /day (reduced in times of severe drought).
Potential to delay scheduling a project to introduce pre-treatment of the Maitai Dam water (or, to achieve the same objective, renew treatment membranes more regularly). The estimated cost of pre-treatment is \$15 - 20 million (the lower end of this range would require using aluminium chlorohydrate) and the cost of replacement of membranes is estimated at \$6.5 million every 6 – 8 years depending on the extent to which the Maitai Dam water is used. The price of membranes will be subject to changes in the exchange rate.
Regional economic growth.
An additional water source increasing the resilience of the Nelson Tasman regional water supply

Disadvantages for Nelson
Cost of the capital contribution increasing pressure on rates and debt.
<p>If Nelson requires access to the additional water (above the 1000 m³/day for Nelson South) in future, a capital investment in TDC's network to access the water and supply to Nelson will be required. Rough estimates provided by TDC put the cost at \$1500/m³/day supplied which equates to \$15 million for 10,000 m³/day and \$22 million for 15,000 m³/day.</p> <p>To maximise supply to Stoke / Annesbrook / Tahuna or further, would require an upgrade of NCC's network of \$0.8 – 1 million for 5,000 – 10,000 m³/day.</p>
Water obtained from TDC will be at the more expensive Richmond Residential Rate.
If NCC purchases shares or equity in the Dam Co, NCC will have an ongoing share of the operational costs of Dam, with NCC's share estimated at \$92,000 per year.
Uncertainty around costs adds risk (both around the final cost of the project and the contributions of other partners)

- 5.2 There are also potential environmental impacts, both positive (improved flows in the Waimea River) and negative (increased nutrient run-off into waterways and Tasman Bay), but as these largely accrue only for the TDC area they are not included in the table above.

6. Discussion

Regional cooperation

- 6.1 Support for the Dam project would be consistent with Nelson City Council's approach of principle over many years, to work collaboratively with partners to ensure the best outcomes for the whole region. Focussing on the arbitrary division created by the border between the two councils ignores the fact that the communities and economies of the two districts are inextricably intertwined. Attempting to divide, on a strict basis, the benefits from a once in a generation project such as the Dam is not likely to capture the full regional impact of ensuring resilience of water supply for at least the next 100 years.

Regional economic benefits

6.2 Several studies have been commissioned on the economic effects of building or not building the Dam. The following documents are available online and on councillors' shared drive:

- i. *Update of economic impact assessment of Waimea Community Dam*, NZIER report commissioned by the Nelson Regional Economic Agency, July 2017, to update its 2014 Waimea Dam Economic Assessment
- ii. *Waimea Dam. Economic Cost of the No-Dam Alternative*. Northington Partners, November 2016
The report provides a summary of the potential financial and economic impacts of the Dam not going ahead. The report was prepared by Northington Partners at the request of WIL.
- iii. *Outflow from a dam. Economic benefits of Nelson City of the proposed Waimea Community Dam*. NZIER, April 2015
The report identifies and assesses the economic and environmental consequences of the Dam for Nelson City and Tasman separately. The report was prepared by NZIER for Nelson City Council.
- iv. *Waimea Dam Economic Assessment Report*. NZIER, October 2014
The report provides information on the economic impact of the Dam on a regional basis. The report was prepared by NZIER for Nelson Economic Development Agency
- v. *How to Pay for a Dam*. NZIER, October 2014
The report considers the provision for environmental flows in the Waimea River by the Dam and also the provision for future demand for water from irrigation, residential and industrial growth. It weighs the cost of these provisions and suggests how the cost might be met. The report was prepared by NZIER for TDC.
- vi. *Waimea Community Dam Economic Analysis*. John Cook and Associates and Northington Partners, June 2011
The report provides an economic impact analysis of the Dam as well as the cost and disruption to the region's economy should the Dam not be built. The report was commissioned by the Nelson Economic Development Agency and prepared by John Cook and Associates and Northington Partners.

6.3 The economic value of the Dam to the region derives from avoiding the loss of primary production that would result from water restrictions as well as the increased production enabled (both from existing areas and new land brought into production).

6.4 The most recent of the above reports, the NZIER update of economic impact, reflects changes in land use and margins for primary produce since 2014.

6.5 The NZIER report examined a conservative assumption of water restrictions equivalent to 20% cut in allocation, and a stronger assumption of 35% allocation cuts. The updated analysis suggests that under the 20% water allocation cut scenario, the estimated net benefits of the Dam over 25 years would have a present value of \$295 million and a benefit cost ratio of 6.0. This is 14% larger than the 2014 result. Under the higher 35% cuts scenario, the net benefits would be larger at \$374 million, with a benefit cost ratio of 7.4.

6.6 Economic impacts of Waimea Dam for Tasman-Nelson region

Measure	20% allocation cut	35% allocation cut
Increase in GDP in first 2 years	\$55 million	\$55 million
Increase in GDP for each subsequent year	\$78 million	\$107 million

NZ\$ in 2013 terms; and present values over 25 years on 2013 base.

6.7 An earlier NZIER report from 2015 assessed the economic benefit for Nelson alone. In 2013 the Nelson-Tasman region had a combined GDP of \$3.8 billion, of which 2.1 billion (56%) was attributable to Nelson City. The value to Nelson City of activities flowing in from the Waimea Plains was estimated to be between \$14.8 million and \$18.4 million per year.

6.8 Without the Waimea Dam, if there are 20% or 35% cuts in water allocation, Nelson City would lose \$4 million or \$9 million respectively in annual GDP. The Waimea Dam would avoid those losses and enable increased production on the Plains, with flow on effects to Nelson City of \$11.4 million per year. On these estimates the Dam would benefit Nelson City's GDP by \$15.4 - \$20.4 million per year.

6.9 As the updated 2017 NZIER report found greater benefits than in the 2014 assessment, it can be expected that the size of the financial benefits to Nelson would have increased proportionately.

Nelson's long term water needs

6.10 Council's long term water planning was reviewed as part of the process of developing the Long Term Plan 2015-2025, the supporting Water Supply Asset Management Plan 2015-2025 and the 30 year Infrastructure Strategy.

6.11 The objective for Council's water assets is to *“provide a water supply to Nelson City that is capable of abstracting, treating and distributing potable water in an efficient, safe, reliable and sustainable way whilst ensuring that the ecological, recreational and cultural interests of the community in the water sources are recognised and enhanced.”*

- 6.12 A summary of the water supply activity is that NCC supplies high quality water to Nelson households and businesses from two sources, the Maitai (North Branch Dam and South Branch weir) and Roding Rivers. The replacement value of assets, including pipelines, reservoirs, pump stations, the treatment plant and dams was valued at \$249 million as at June 2016.
- 6.13 Council abstracts between 7.2 and 8.5 million cubic metres of water a year from within Nelson boundaries. Nelson's average daily peak demand is approximately 26,000 m³/day – 28,000 m³/day. The Nelson Water Treatment Plant has the capacity to treat 50,000 m³/day. In order to supply this volume to the plant the pump station on the duplicate raw water pipeline will have to be upgraded at a cost of approximately \$2M and an additional storage tank installed at the treatment plant also at a cost of approximately \$2M.
- 6.14 It is more economical to use water from the two river sources rather than the Maitai Dam as water from the rivers requires less treatment and therefore puts less pressure on the membranes at the Water Treatment Plant. A trial in late 2016 of using only water from the Maitai Dam for supply was required to be cut short because of problems with discoloured water and subsequent complaints from users. The higher level of organic matter in the Maitai Dam water also stressed the older membranes at the Water Treatment Plant.
- 6.15 The trial suggests that to rely on meeting Nelson's water needs from the Maitai Dam, NCC would need to invest in pre-treatment of the water to reduce the level of organics or accept a reduced service life of the membranes and increased replacement costs. More work is needed to fully understand what costs NCC might face if it chose to use more water from the Maitai Dam.
- 6.16 The cost of pre-treatment was previously estimated at \$17 - 20 million. Independent experts have been contracted to do further work and have provided a revised estimate of \$15 – 16 million. The new estimate is based on the use of aluminium chlorohydrate as coagulate (rather than ferric chloride). Concerns were raised in the past by the community in relation to the perceived health risks connected to the use of aluminium chlorohydrate.
- 6.17 An alternative to pre-treatment is to accept more regular replacement of the membranes (and possible water discolouration, depending on the outcome of work described in 6.19 below). There are five trains of membranes at the plant and each costs approximately \$1 million to replace at the current exchange rates. The estimated cost of replacement of the membranes is approximately \$6.5 million every 6 – 8 years depending on the extent to which the Maitai Dam is used. Some of the current membranes are 14 years old having performed much better than predicted by the manufacturer. The fifth train membranes were newly installed in 2016/17 and two sets of trains will be renewed in 2017/18.
- 6.18 The recommendation from the consultant's report is, in fact, to not pre-treat but to continue to use the membranes and accept a faster rate of replacement. Otherwise Council could invest in some very expensive pre-

treatment assets which would sit idle except for a relatively short period in the height of summer.

- 6.19 It should be noted that the cause of the related issue of water discolouration has proven to be difficult to trace. One strong contender appears to be more related to the pH of the water that results from the various chemicals used to facilitate filtering of Maitai Dam water by the membranes. Changes of pH may lead to the mobilisation of the iron and manganese that has accumulated in the pipes over many years. Officers believe that this uncertainty can be resolved by further testing and adjusting quantities and proportions of these flocculating chemicals to provide some clear understanding of the various factors at play. A strictly controlled testing programme will be developed this year.
- 6.20 As seen from 6.13 above, Nelson does not have any shortage of water from its current sources for the foreseeable future. However, NCC now has the opportunity to improve the resilience of regional supply by contributing to the Dam which is proposed to provide water for the Waimea Plains and nearby residential areas for the next 100 years. Through its contribution, NCC would have the potential to access an additional water source for the city of up to 22,000 m³/day, albeit at a relatively high cost.
- 6.21 If Nelson requires access to additional water in future, a capital investment in TDC's network to access the water and supply it to Champion Road will be required. Rough estimates provided by TDC put the cost at \$1500/m³/day supplied. This equates to \$15 million for 10,000 m³/day and \$22 million for 15,000 m³/day and so on, depending on the volume of water required.
- 6.22 To maximise supply to Stoke / Annesbrook / Tahuna or further into the NCC district, pump stations would need to be installed to get the water into the reservoirs on the hillsides. This would cost approximately \$0.8 – 1 million for 5,000 – 10,000 m³/day.
- 6.23 Instead of purchasing water from TDC, NCC could extract water from the Waimea Plains aquifers on its own account by installing its own wells, treatment and reticulation at an estimated cost of \$17 – 20 million for up to 22,000 m³/day.
- 6.24 Water from the Waimea aquifers has less dissolved organic material than that from the Maitai Dam and therefore taking water from the Waimea aquifers either through new NCC wells or via TDC, may delay (but not eliminate) the need to commence pre-treatment of the Maitai Dam water. On the other hand, water from TDC is already more expensive than NCC can supply and that cost will rise once the Dam is built.
- 6.25 If Council routinely has to use the Maitai Dam for more than 10 days at a time as a raw water source then a primary clarifier to remove organic materials or more regular replacement of the treatment plant membranes will be required. In that event, it is likely that NCC will need to consider pre-treating the Maitai Dam water at some point in the future (or replace membranes more regularly) regardless of whether water is being supplied

from TDC or not. To date pre-treatment has not been necessary as NCC has been able to consistently use the river sources.

- 6.26 Over the last decade, NCC has on the following 4 occasions relied solely on the Maitai Dam as a water source for more than 10 consecutive days: April /May 2007 for 20 days, August 2008 for 16 days, February / March 2015 for 32 days (valve maintenance) and April /May 2016 for 50 days (trial). The Maitai Dam was used as the only source for the highest total number of days in 2016 (124 days) and the lowest total number of days in 2009 (46 days). The average number of days per year on which the Maitai Dam was used as the only water source during the period 2007 – 2016, is 88.1 days.
- 6.27 Whether greater reliance needs to be placed on the Maitai Dam will depend on a number of factors: drought events and demand (particularly an issue in summer when the river flows are low), prolonged wet weather when river sources are not available and events that damage river intakes or supply lines.

Nelson South supply

- 6.28 TDC supplies approximately 9% of the Nelson water supply through an Engineering Services Agreement (ESA) for Nelson South residents and industrial users in the Wakatu Industrial Estate. A copy of the current ESA is in Attachment 6. TDC also has separate contracts with two major industrial users in the area: the ENZA apple packing plant and the Alliance meat processing plant. (Further details in relation to the Nelson South industrial users are set out below in paragraphs 6.34 – 6.37)
- 6.29 Under the current ESA, the water supply is capped at 330 m³/day and the agreement provides that TDC can give three years' notice to cease supplying residential users in Nelson South.
- 6.30 The water TDC currently supplies to Nelson South residential is more expensive than the rate at which NCC can supply water (details are set out in par. 6.38 – 6.41). The difference in price is borne by all Nelson water users. The cost of water purchased from TDC is budgeted at \$250,000 per year.
- 6.31 As development is continuing in Nelson South, the water demand from this area is only going to expand. In order to secure a water supply to the Nelson South area for current residential and industrial users and future developments, officers have discussed with TDC proposed amendments to the ESA and the basis of a NCC contribution to the project. The proposed Terms were discussed with the Council during the briefing on 13 April 2017.
- 6.32 The proposed Terms state that in the "with Dam scenario" up to an additional 1,000 m³/day (on top of the 330 m³/day supplied currently) would be made available to the Nelson South area immediately and without the need for any NCC contribution to upgrading the TDC network. This was included in the agreement to ensure that development in Nelson South would not be restricted by water supply and so that NCC would not have to invest extra in its reticulation to reach the new areas of development.

- 6.33 However, since the time the revised ESA was negotiated some changes have occurred. As a result of development pressures in the Saxton Area, Council has entered into a Private Developers Agreement that provides for the Saxton residential area (existing and proposed) to be provided with reticulated water from Nelson's supply in the immediate future. Provided the planned private development proceeds, the reticulation put in place would allow expanding development in this area to be serviced by NCC at a lower cost than purchasing water from TDC.

Nelson Industrial Water Supply Area and ENZA and Alliance

- 6.34 Under the current ESA, TDC directly supplies a number of industrial users in the Wakatu Industrial Estate. TDC also has separate contracts with two major industrial users in Nelson South: ENZA and Alliance. The supply to the industrial users expires on 30 June 2020. The separate agreements that TDC holds with ENZA and Alliance also expire in 2020.
- 6.35 Under the proposed Terms, TDC would continue to supply the current Nelson industrial water supply area (which includes ENZA and Alliance). TDC would also continue the current system of contracting with and invoicing those businesses directly. Such an arrangement would protect NCC from having to supply large water users with water invoiced at NCC rates but purchased at a TDC residential rate. Making up the difference between those two rates is an estimated cost to NCC of \$350,000 per year which would potentially be borne by all water accounts.
- 6.36 Should the current supply arrangements continue, NCC would be able to defer the construction of the large diameter water mains to the industrial areas programmed for 2025-2030, at a capital saving of approximately \$3.2 million. It should be noted, however, that industrial users have the right, at any time, to approach NCC and request it take over supply.
- 6.37 Should NCC be in a position of having to take over supply to these large industrial users it could choose to continue sourcing that water from TDC. However, under current arrangements, the higher water costs of TDC water would be averaged across all Nelson users to the disadvantage of our residential users. Alternatively NCC could strike a separate higher water rate for industrial users supplied with TDC water, but that would be hard to justify given the bulk user rates available to industrial users in other parts of the city.

Cost of water supplied by TDC

- 6.38 If the Dam goes ahead, the cost of water supplied by TDC to NCC would increase to reflect the Dam construction and operational costs; the Engineering Services Agreement is tied to the rate charged for Richmond residential customers.
- 6.39 TDC recovers water costs through an annual service charge plus a rate per cubic metre of water supplied.

6.40 The table below sets out the 2017/18 NCC and TDC water charges.

Supplier	Approx. Annual charge (\$inclGST)	Approx. Cost/m3 (\$inclGST)	Volume
NCC to customers	189.32	1.964	0-10,000m3/year
		1.550	10,001-100,000
		1.222	>100,000
TDC to customers	320.33	2.08	All volumes
TDC to NCC residential customers	-	3.33	All volumes. Annual charge included in water rate.

6.41 TDC Richmond residential charges are about 20% higher than the rate at which NCC can supply water. TDC estimates that the Richmond residential rate is likely to rise by 6 to 8% following construction of the Dam.

Alternative scenarios in relation to Nelson South supply – residential, industrial and ENZA and Alliance

6.42 If the Dam goes ahead with no contribution from NCC, the Nelson South supply from TDC would continue as per the current ESA which provides for a three year notice period (residential) and supply to industrial users to cease in June 2020. The separate agreements that TDC holds with ENZA and Alliance provide for supply to cease in 2020.

6.43 It is likely, given the amount of water that will be available, that TDC will continue to supply the Nelson South area however this supply is likely to be at a premium cost. Once the private developer has extended NCC reticulation to the residential area NCC may choose to cease taking TDC supply for that part of its district as it would result in a saving to ratepayers.

6.44 If the Dam is not built, TDC will activate a three year notice period to cease supplying Nelson South (residential and Nelson industrial water supply area) from the date of the 'No-Dam' decision. TDC will also cease supply to ENZA and Alliance from the expiry date of their separate contracts.

6.45 The amount of supply required to replace the water from TDC might be up to 485,000 m³/per year. While the residential area is now expected to be connected to NCC supply by the time a cease supply notice would take effect there would be a capital cost for piping, currently estimated at \$3.2 million, to supply the industrial area.

6.46 In addition, there would be greater reliance on the Maitai Dam to maintain supply and it is possible, as mentioned above, that capital expenditure of \$15 – 20 million will be required to pre-treat the water in order to protect the treatment plant membranes and possibly reduce the incidence of discoloured water complaints. Alternatively, more frequent replacement of the membranes estimated (at the current exchange rate) at \$6.5 million every 6 – 8 years depending on the extent to which the Maitai Dam is used. A full business case will be required when the decision is made in order to establish the most appropriate course.

Roding River

- 6.47 TDC is entitled to receive the lesser of 909m³ per day or 1/15 of the allowable extraction from the Roding. TDC currently takes only a small fraction of its water entitlement but NCC is required to maintain the reticulation that TDC would use for this supply.
- 6.48 Under the “with Dam” draft Terms, TDC agrees to forfeit the right to take water from the Roding River.
- 6.49 If the Dam goes ahead with no contribution from NCC, TDC will retain its right to take water from the Roding River. However this will be via an alternative point of supply and NCC would therefore still be released from maintaining and replacing the delivery pipe. TDC may relinquish this right once reticulation upgrades in Richmond are completed.

Meeting the National Policy Statement (NPS) on urban Development Capacity

- 6.50 The NPS on Urban Development Capacity (NPS UDC) came into effect on 1 December 2016. Its primary purpose is to ensure councils are supplying sufficient land for urban and business use for projected population growth; and to ensure that the supply of land is not a constraint on housing affordability. NCC is now required to integrate infrastructure provision with growth needs.
- 6.51 The NPS classifies the Nelson Urban area (includes Richmond) as a Medium Growth Urban Area, and imposes particular requirements on NCC. Among other things, the NPS on Urban Development Capacity requires NCC to provide at all times sufficient residential and business development capacity for the short, medium and long terms.
- 6.52 Land for industrial growth in Nelson is limited, however Richmond West (Lower Queen Street) has always been intended to provide for future demand and growth for business land in the Nelson Urban area.
- 6.53 The uncertainty of water supply might reduce the uptake and development of land in Richmond West and accordingly both councils risk not meeting the NPS requirements. If the Dam does not go ahead then the existing business and industries in Richmond West will face water restrictions in drought years.

Environmental impact

- 6.54 The Dam will result in some environmental benefits as 30% of the Dam’s capacity is allocated to “environmental flows”. This will enable the minimum flow on the Waimea River to be set at 1100 l/s. Without the Dam the minimum flow under the TRMP would be 800 l/s. The higher proposed flow would assist with instream improvements within the Waimea River.
- 6.55 The potential adverse effects of the Dam include changing the natural environment upstream of the Dam and increased contaminant levels eg.

increased nutrients in Tasman Bay and nitrates in waterways arising from either intensification or land converted from pastoral use to market gardening or horticulture. The TRMP includes requirements for nutrient management plans which are seen as a way of managing the contaminant risk.

- 6.56 The Dam lake will cover 65.9 hectares, disrupting the habitat for a range of fauna and flora. The resource consent for the Dam provides for establishing new habitats and an ongoing environmental fund. Adverse effects can include disruption to fish passage, reduced water quality and potential impacts on aquatic ecology. The environmental effects of the Dam were considered as part of the consenting process.
- 6.57 The table below sets out the expected long term changes in land use as a result of a more secure water supply.

	Current land use	Possible increased use with Dam	Current plus increase
Crop	Ha	Ha	
Pasture	1300	400	
Apples	1480	960	
Kiwifruit	70	90	
Grapes	200	200	
Berries	60	150	
Total	3110	1800	4910

- 6.58 As there will be a mix of environmental benefits and negative impacts from the Dam and because there is no practice in the region of funding environmental benefits in the neighbouring district, environmental factors have not been included in consideration of what would be an appropriate level of NCC contribution.

7. Independent Expert Advice

- 7.1 To further inform Council decision-making, an independent expert, David Benham, was commissioned to review the relevant material, discuss issues with officers at NCC and TDC and provide an independent report on the value of an NCC contribution to the Dam.
- 7.2 Mr Benham is the former Chief Executive of the Greater Wellington Regional Council (GWRC) and also held the position of Divisional Manager Utilities Services managing the bulk water responsibilities of GWRC. He is currently a Board member of Wellington Water which manages water treatment and supply, stormwater and wastewater service delivery in the Wellington area. A copy of Mr Benham's report is in Attachment 7.
- 7.3 The report recommends the following: *"that NCC contributes \$5 million to the project and the contribution be by way of equity rather than a straight grant. Advice provided indicates that the dam project with NCC's*

contribution will future proof NCC's water supply and enhances the wider regions economic wellbeing towards 2100. This is a significant positive legacy this Council can provide to the future citizens and ratepayers of the city and wider Nelson Tasman region".

- 7.4 The report concludes that
- *the costs of either the "dam ' or " no dam" option are relatively similar*
 - *there appear to be significant regional economic benefits from the dam proceeding*
 - *there may be significant regional economic disbenefits if dam does not proceed*
 - *as the dam is fully consented it is assumed that environmental impacts have been taken into account and mitigated to the extent they can be*
 - *significantly `adds to the water supply resilience for the wider region*
- 7.5 It should be noted that Mr Benham's report was prepared in May 2017 and therefore does not take into account updated cost estimates or other developments since that time.

8. Cost of the Dam and Funding

- 8.1 The overall project cost of the Dam is expected to be in the region of \$75.9 (\$82.5 million if expenditure to date of \$6.58 million is included). A more refined cost will not be known until the tender process has been completed. With a project of this size the final cost will not be known until the project is completed.
- 8.2 The Dam is expected to cost \$50 million to build and this estimate has a P95 confidence level. A P95 confidence level means that there is a 5% chance that the cost will be higher. Other costs include legal costs, land purchase and a \$13 million contingency.
- 8.3 Entities that acquire a shareholding in the Dam Co will have a share of the operating costs to pay as soon as the Dam becomes operational. These costs are estimated to be \$1.4 million per annum. This report does not recommend that NCC become a shareholder but if it did, NCC's annual contribution to operating costs has been estimated at \$92,000.
- 8.4 Expected contributions towards the project are set out below:

Description	Amount \$ million	Share of Dam
TDC	\$16.78	51.1%
Loan to TDC from Crown Irrigation Investments Ltd	\$10	

Grant to TDC from Ministry of Environment	\$7	
Nelson City Council (if the proposal is adopted)	\$5	
Waimea Irrigators Ltd (WIL) subscription from irrigators	\$15*	48.9%
Loan to WIL from Crown Irrigation Investments Ltd	\$22.12	
Total	\$75.9	100%

*any extra raised by WIL reduces the loan from CIIL correspondingly.

- 8.5 Funding from most of these sources, apart from the TDC contribution which is included in its LTP 2015-25, needs to go through approval and confirmation processes and that uncertainty adds risk to the project.
- 8.6 WIL has confirmed that the level of interest received from irrigators is such that it is likely that the requisite \$15 million will be raised. The expressions of interest are indicative only and will not be binding until WIL issues a prospectus and irrigators subscribe for shares.

NCC contribution to the Dam

- 8.7 If Council decided that a contribution to the Dam is appropriate then it needs to decide:
- How much to fund?
 - Where to fund from?
 - Would the funding be a grant or a purchase of equity in the Dam Company?
 - Are there any conditions that NCC would place on its funding?
- 8.8 A number of different figures have been mentioned over the years as an appropriate level of contribution from NCC. Many of the figures have their roots in calculations now out of date. There has been a view that NCC should contribute to environmental benefits and the possibility of a 10% contribution from NCC towards the total cost of the Dam has also been raised. There has been speculation about contributions between \$3-8 million and all have been assumed to be on top of NCC's existing contribution to the project of \$413,000.
- 8.9 Trying to determine an exact calculation of an NCC contribution is complex. Figures for environmental, economic and other benefits are often presented as wide ranges, have significant margins of error and a degree of subjectivity. It is not feasible to work through all the different options for

securing future water supply and provide costings with a good level of reliability. Even if this were possible, the best future option cannot be determined on current knowledge.

- 8.10 A more reasonable approach would be to consider the range of benefits that Nelson ratepayers might reasonably be expected to receive and be willing to contribute to and to value these as a package. These benefits include:
 - 8.10.1 Generalised regional economic benefit leading to economic benefits experienced by Nelson ratepayers. This would include benefits for Nelson residents who rely on the Waimea Plains for work and improved dividends generated by the Port and Airport (of which NCC and TDC are joint owners) as a result of growth in GDP.
 - 8.10.2 Savings in extra reticulation to supply Nelson South industrial area.
 - 8.10.3 Delay in need to commence pre-treatment of the Maitai Dam water (or greater use of and more regular replacement of membranes).
- 8.11 Taking all these factors into account, a contribution of \$5 million (around 20% of TDC's contribution), in addition to the \$413,000 already provided, might be a reasonable figure to recognise the potential benefits to Nelson ratepayers and be in proportion to other parties' contributions.
- 8.12 Unbudgeted one off distributions received since the LTP 2015-25 (\$4.2 million from the Landfill JV from TDC) and \$860,000 from extra dividends (Port and Airport) could offset a contribution of \$5m, with little net effect on forecast overall Council debt positions.

Options

The three main options are set out below.

- 9. **Option 1. A one-off contribution. No shareholding in the Dam Company.**
 - 9.1 This option limits NCC's risk. It would be a one-off payment in the 2018/2019 and 2019/2020 years. There would be no further funding if the cost of the project is higher than budgeted and NCC would not contribute to the annual operational costs of the Dam. NCC would probably fund the contribution through a long term loan over 25 years and repay the loan and interest from general rates. A \$5 million loan at a 5% interest rate would cost \$355,000 in interest and loan repayments per year.

9.2 The cost of water supplied by TDC would increase to reflect the Dam construction and operational costs; the Engineering Services Agreement is tied to the rate charged for Richmond residential customers.

9.3 NCC could include as a condition of its contribution that if costs are lower than the \$75.9 million then a proportion of the grant is refunded. However, this would seem a rather uneven arrangement if no commitment was made to meeting project cost over-runs. It is suggested that the grant should be made without such conditions.

10. Option 2. Purchase of equity in the Dam (or split of equity and grant)

10.1 This option has the advantage of reinforcing the public nature of the Dam project with a shareholding involvement from two councils to balance the interests of the WIL representation. It would help to ensure the public interest continues to be prioritised in matters relating to the Dam.

10.2 NCC equity would include a share of the water supply from the Dam. This option would require Council to contribute an estimated \$92, 000 per year directly to the ongoing operational costs of the Dam from the time it becomes operational, even though NCC may not be taking any additional water and may never need to do so. The cost of the loan would be as for Option 1.

10.3 This option would also allow for TDC and NCC to jointly appoint a director to the Board. NCC would be responsible for 50% of the director appointment cost but the administration costs and directors' fees would be included in the operational costs.

10.4 Council could consider splitting any funding between a grant and purchase of shares in the Dam Co. However, officers do not believe this would offer any additional benefits and if Council wished to purchase an equity shareholding in the Dam then it should maximise its ownership stake and allocate its full contribution towards purchasing shares.

11. Option 3. No contribution.

11.1 This option would be selected if Council decided that the benefits from the Dam for Nelson were limited, and/or that there are other priorities that require Council's funding.

Option 1: One-off Grant (preferred)	
Advantages	<ul style="list-style-type: none">• The Dam is more likely to proceed and accordingly provide economic and regional water supply benefits.• It is in-line with the Long Term Plan 2015-25 which provided debt "headroom" for Council to contribute to the Dam.

	<ul style="list-style-type: none"> • Limits risk to NCC and ratepayers, particularly if the cost of the Dam is higher than expected. • Lower risk in the long term if the irrigators have difficulty in refinancing the CIIL loan. • NCC can secure the arrangement for TDC to supply water to the Nelson South industrial area in accordance with the draft Terms. • No direct contribution to the annual operating costs of the Dam.
Risks and Disadvantages	<ul style="list-style-type: none"> • Increases rates and debt. • Dam operating costs will be included in the Richmond Residential Rate and therefore included in the charges TDC makes to NCC in supplying Nelson South and in any additional future supply. • Accessing additional water, if required in the future, will require a capital investment in TDC's network.
Option 2: Purchase of Shares in the Dam Company	
Advantages	<ul style="list-style-type: none"> • The Dam is more likely to proceed and accordingly provide economic and water supply benefits. • Is in-line with the 2015-2025 Long Term Plan which provided debt "headroom" for Council to contribute to the Dam. • TDC and Nelson City Council will jointly appoint a director to the Dam Company board and through this NCC will gain a degree of influence and faster receipt of information.
Risks and Disadvantages	<ul style="list-style-type: none"> • Increase in rates and debt. • Exposes Council to higher risk of additional costs if there are difficulties with funding the Dam or refinancing the CIIL loan in 15 years time. • Council would need to make a direct estimated contribution of \$92 000 per year to the operational costs of the Dam. • Costs associated with the appointment of the board member (joint appointment with TDC) • Accessing additional water, if required in the future, will require a capital investment in TDC's network.
Option 3: No Contribution	
Advantages	<ul style="list-style-type: none"> • No increase in rates or debt • No administrative costs.
Risks and Disadvantages	<ul style="list-style-type: none"> • Does not foster regional cooperation. • TDC may decide not to continue supplying Nelson South which will have consequential costs for Council. • The Dam might not proceed and therefore the anticipated benefits will not be achieved for the region. If the Dam doesn't proceed, the provisions

	<p>of the TRMP will come into effect and economic losses for the region will occur.</p> <ul style="list-style-type: none"> • If the Dam doesn't proceed, TDC will, in the short to medium term (3years), not be able to provide water to industrial users in Nelson South; Council will need to consider alternative higher cost options for supplying water to these users.
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12. Financial Considerations

- 12.1 Loan funding would be sensible for a contribution of this size. The cost of a loan would be \$71,000 per \$1 million borrowed over 25 years eg. A \$5 million loan at a 5% interest rate would cost \$355,000 in interest and loan repayments per year.
- 12.2 Financing the loan could be done through an increase in general rates or through a uniform Annual General Charge
- 12.3 If Council decided that the contribution was to secure economic benefits, then general rates would be the most appropriate mechanism. If the contribution was funded through general rates this would add 0.5% to general rates.
- 12.4 A Uniform Annual General Charge, would charge the same amount to each ratepayer and cost approximately \$17.45 per year per ratepayer for a \$5 million contribution.
- 12.5 Officers have explored the possibility of funding some of the cost of the contribution through development contributions. One of the key principles of development contributions is to enable the recovery of a proportionate portion of the total cost of capital expenditure necessary to service growth over the long term. Officers have been advised that it would not be possible to charge development contributions in this instance as a grant or the purchase of shares/equity in a limited company is unlikely to meet the financial definition of capital expenditure.
- 12.6 A summary of the estimated costs to NCC is summarised in Attachment 8.

13. Conclusion

- 13.1 The proposed Waimea Dam is a major regional project. The size of the project, in terms of cost as well as economic and expected benefits, makes it a once in a generation project.
- 13.2 A grant of up to \$5 million would seem an appropriate level of contribution, given the scale and benefits of the project, while at the same time limiting NCC's exposure and risk to any project overruns and ongoing costs.

14. Next Steps / Timeline

Council

- 14.1 Following adoption by Council, the Statement of Proposal will be released to the public for feedback through the consultation period which will run from 25 October to 24 November 2017. Hearings will be held on 7 December (including an evening meeting). This timing has been settled on to allow consultation on the Dam to occur at the same time across both council areas (see TDC timetable below).
- 14.2 Council will listen to and reflect on the community views provided through that process. Officer advice on the matters raised by the community and on any new issues that have emerged will be provided by way of a report to the Council deliberations. Having deliberated on all relevant matters Council will make decisions on any changes.

Tasman District Council

- 14.3 TDC needs to consult on and finalise the governance and funding structure, and any changes to its Revenue and Financing Policy. The current proposal is that it will consult on both the governance arrangements and the Revenue and Financing Policy from 21 October 2017 – 26 November 2017.
- 14.4 The construction work has been tendered but tenders are still to be evaluated and awarded.

Waimea Irrigators Ltd - Irrigators

- 14.5 WIL needs to obtain financial commitment from land owners to contribute their share of the capital and operating costs. A draft "Shareholder Information Document and Survey" was sent to potential shareholders in February 2017 to gauge interest.
- 14.6 Since then WIL has sought further indications from potential shareholders in relation to the uptake of shares. WIL has confirmed that the level of interest received from irrigators is such that it is likely that the requisite \$15million will be raised. The expressions of interest are indicative only and will not be binding until WIL issues a prospectus and irrigators subscribe for shares.
- 14.7 WIL also needs to further develop its investment proposal with the other stakeholders.
- 14.8 TDC and WIL need to jointly procure a contractor and complete final design of the Dam to confirm the likely construction costs. This work (costing about \$1.05million) will be funded jointly, with WIL's contribution partially coming via a grant from CIIL.

Crown Irrigation Investment Company

- 14.9 CIIL's loans are contingent on due diligence, acceptability of the key contractual arrangements, internal approvals and confirmation that the project is fully funded.

Nicky McDonald
Senior Strategic Adviser

Attachments

- Attachment 1: Draft Statement of Proposal A1846450
- Attachment 2: Proposed Terms of new Engineering Services Agreement A1847401
- Attachment 3: Key Parties A1761653
- Attachment 4: Tasman Resource Management Plan - water rationing A1847397
- Attachment 5: Detail on proposed Dam A1766322
- Attachment 6: Current Engineering Services Agreement between NCC and TDC A1382534
- Attachment 7: Report - David Benham A1769513
- Attachment 8: Estimated costs for NCC: Dam/No Dam A1840371

Important considerations for decision making

1. Fit with Purpose of Local Government

An NCC contribution would assist a dam to be built that would provide for the long term water needs of the Waimea Plains, as well as residential users.

Furthermore the work undertaken by WWAC and TDC (and peer reviewed by Northington Partners and NZIER) suggests that the proposed dam would be: *"Efficient and effective; and appropriate to present and anticipated future circumstances"*

2. Consistency with Community Outcomes and Council Policy

Contributing to the project will align with the following Community Outcomes:

- *Our infrastructure is efficient, cost effective and meets current and future needs.*
- *Our Council provides leadership and fosters partnerships, regional perspective and community engagement.*

3. Risk

The main risk is that the cost of the Dam and operating costs might be higher than forecast. Council can manage this risk by making a grant rather than purchasing equity.

There are some environmental risks if the Dam goes ahead such as nitrate levels increasing in waterways. TDC is responsible for managing these.

If Council does not contribute to the project, it has a reputational risk from not supporting an important regional project. On the other hand, there is also a reputational risk if Council contributes to the project and it fails to deliver the forecast benefits to the region.

4. Financial impact

The cost of a loan would be \$71,000 per \$1 million borrowed over 25 years. A \$5 million loan at a 5% interest rate would cost \$355,000 in interest and loan repayments per year.

5. Degree of significance and level of engagement

This is a major project with long term implications for the regional economy and a decision to contribute the project is of high significance. A special consultative procedure is proposed to ensure an appropriate level of community engagement in the decision.

6. Inclusion of Māori in the decision making process

Māori have not specifically been consulted on this report.

7. Delegations

No committee has a specific delegation to consider this matter and therefore the decision rests with Council.