

Mayor and Councillors
COUNCIL

19 AUGUST 2010

Meeting Status: Public

Purpose of Report: For Decision

WATER SUPPLY PROJECT - PREFERRED SOLUTION

PURPOSE OF REPORT

- 1 The purpose of this report is to seek Council approval for a preferred water supply solution for Waikanae/Paraparaumu/Raumati to be taken to the next stage of design.
- 2 The report also identifies issues to be addressed in the next phase of work before consenting.

SIGNIFICANCE OF DECISION

- 3 The Council's significance policy is not triggered.

BACKGROUND

- 4 The objective of the Water Supply project is to find a solution to secure sufficient potable water for Waikanae, Paraparaumu/Raumati for the next 50 years. The Long Term Council Community Plan (LTCCP) commits to having a solution in place by 2015.
- 5 In December 2009 a plan (refer to report DP-09-763 Water Supply Project Budget Reallocation) was drawn up that identified key steps required to achieve the 2015 target date. A summary of the plan is set out in Appendix One.
- 6 There have been several stages of assessing and reducing the number of options to the current four in-catchment options being considered. These stages included:
 - Coarse screening looked at yield, cost, technical and consenting constraints to reduce 41 options to 31 options (refer to report DP-09-762, 17 December 2009);
 - Multi-criteria analysis involved extensive engagement with the community and tāngata whenua regarding the values associated with water supply, including water quality (hardness and taste), security of supply, cost (capital and operational), and cultural values. This engagement resulted in an "in-catchment" strategy being confirmed and the 31 options being reduced to 6 options (refer to report DP-10-818, 11 March 2010);
 - Option shortlisting assessed each option's ability to meet the project budget constraints and also examined possible use of composite options.

This work reduced the options being investigated to four in-catchment options (refer to report AS-10-922, 24 June 2010).

- 7 The four in-catchment options are:
- Lower Maungakotukutuku dam
 - Aquifer storage and recovery
 - River Recharge with groundwater
 - Extended borefield with treatment

CONSIDERATIONS

Out-of-catchment options – Ōtaki River

- 8 During the assessment process concerns were raised that sourcing water from the Ōtaki River was not being considered. While out-of-catchment options are not supported in the first instance by the Council's Sustainable Water Management Strategy, for transparency and completeness, two Ōtaki River options have been costed to the same standard as the four in-catchment options. The Ōtaki options considered were based on their ranking in the multi-criteria analysis undertaken in March 2010.
- 9 The table below presents the base capital costs for the two Ōtaki options:

Potable source	Option	Base Capital Cost (2010 dollars)	Beca report Appendix Two
Ōtaki River	Ōtaki River Gorge Transfer	\$32,800,000	Clause 3.6.2 page 26
	Ōtaki Wellfield and Pipeline	\$37,800,000	Clause 3.6.2 page 26

- 10 On 11 May 2010 the Ōtaki Community Board considered the community's views on including Ōtaki options (out-of-catchment) in the next stage of investigations (refer to report SP-10-896). The Board resolved:
- *That the Ōtaki Community Board advises the Kāpiti Coast District Council that the inclusion of an out-of-catchment (Ōtaki) water supply option in the current water supply review is not supported by the Ōtaki Community Board and the Ōtaki ward community and that this option should not proceed to review.*
 - *That the Ōtaki Community Board directs that the rationale for its decision under Resolution 14 is conveyed to the Kāpiti Coast District Council, to be recorded as background information in the water supply review process. The rationale for its decision includes:*
 - *Previously stated community views strongly rejecting the inclusion of an out-of-catchment water supply option;*

- *The extent to which there are other water supply choices available to the southern communities;*
 - *The extent to which there are real opportunities available to the southern communities to reduce their water use;*
 - *That projected population and development rates for the Ōtaki area will necessitate access to its own adequate water supply.*
- 11 In a letter dated 8 June 2010 Ngati Raukawa hāpu advised that “*the Ōtaki River and Ōtaki River gorge are not supported but we agree with the investigation of “in-catchment solutions” for Paraparaumu, Raumati and Waikanae being pursued by council.*” (Refer to Appendix Three).
- 12 The consenting risk is considered high as the Ōtaki community does not support the Ōtaki options. This combined with the high cost of the options are further reasons for not considering the Ōtaki options any further.

Out-of-catchment option – Whakatikei Dam

- 13 To ensure all relevant out-of-catchment options that were raised in public consultation have been considered, Council sought a response from Greater Wellington Regional Council on their Whakatikei Dam proposal. Council asked (Refer to Appendix Four) several questions to confirm the assumptions made. In particular, “*.... could the programmed completion date of the dam be brought forward to 2015 or thereabouts?*”
- 14 The following response was received on 7 April 2010 (Refer to Appendix Five):
- “Unfortunately even if GW did bring the project forward, it would seem the earliest date for completion would be about 2020. However, demand management and other possible initiatives may well result in the project starting later than 2014.”*
- 15 The earliest completion date of 2020 for the Whakaikai Dam is well beyond Council’s date of 2015.

Costing method

- 16 The cost of each option was developed in a three stage process.
- **Base Capital Cost** – This involved the development of a conceptual design with individual items being costed using industry accepted methods. They include consulting fees, investigation costs, design and construction fees, Council costs, resource consent fees, and land purchase as required. This method was used as the basis for preliminary assessments.
 - **P90** – This takes the base capital cost and refines it by assessing project risks. P90 is the figure recommended for budgeting. The P90 assumes that if an option is built 100 times, 90 times it will fall within the budget.
 - **Present Value (PV)** – this takes the P90 cost and applies the operational and maintenance costs expected over the life of the solution and presents them in 2010 dollars to allow a fair comparison of options. This represents

how much money would theoretically be required to be in the bank today to build, operate, and maintain the option for 50 years.

Progress on In-catchment Options

- 17 A robust assessment of the four remaining in-catchment options has been carried out. This is detailed in reports:
 - Ranked Options – Summary Report (refer to Appendix Two)
 - Ranked Options – Technical Report (refer to Appendix Two)
 - Ranked Options – Technical Appendices (refer to Appendix Two)
- 18 The four in-catchment options have been assessed in terms of the following categories;
 - Economic – costings include base capital costs, P90 (includes risk costs) and total 2010 present value costs (includes operational and maintenance costs);
 - Water quality;
 - Security and yield;
 - Social – community acceptance;
 - Environmental impacts;
 - Technical - engineering and design issues;
 - Risks.
- 19 The disadvantages and advantages of each option have been assessed against these categories and are presented in table 4.2 in Ranked Options - Summary Report (refer to Appendix Two - page 32).

20 A summary of the findings is outlined below:

Category	Maungakotuku-tuku Dam	River Recharge	Borefield and treatment	Aquifer storage and recovery
Cost	√√ More expensive	√√√√ Lowest cost – can be staged	√ Most expensive	√√√ Lower cost – can be staged
Quality taste/hardness	√√√ High quality - potential for algal bloom	√√√√ Highest quality	√ Lower quality - treated bore water	√√ Lower quality - potential river water mixing with bore water
Yield	√√√√ Most long term yield security	√√ Less security around yield	√ Less security around yield – 10% more extraction required	√√√ Less security around yield, but avoids risk of saline intrusion
Environment	√ Most environmental effects – loss of ecological covenant area, requires fish passage, downstream impacts	√√√ Lower environmental effects on ecology, risk of saline intrusion needs to be addressed	√√ Lower environmental effects – except for disposal of byproduct (brackish water), risk of saline intrusion needs to be addressed	√√√√ Lowest environmental effects
Social	√√√ Community support. Willingness of affected landowners. Perception of dam break risk	√√√ Likely to have general community acceptance	√ Lowest community support – negative perception of drinking bore water	√√ Lower community support – some risk of negative perception due to lower understanding of concept
Technical	√√√ Suitably understood – risks relate to ability to remove covenant, potential algal bloom	√√√ Suitably understood – uncertainty about quality of water in additional bores	√√√ Suitably understood – uncertainty about quality of water in additional bores	√√ Uncertainty – not sure if river water will be recovered, trial well will be required, possible treatment required, more cost
KEY	√√√√ Low impact	√√√ Low-medium impact	√√ Medium-high impact	√ Highest impact

21 The cost for each of the four options is as follows:

Option	Base Capital Cost	P90	PV
River Recharge	\$22.3M	\$23.8M	\$30.1M
Maungakotukutuku Dam	\$27.9M	\$33.2M	\$38.7M
Aquifer Storage	\$25.0M	\$26.9M	\$32.2M
Borefield and treatment	\$34.3M	\$37.3M	\$43.2M

Composites

22 A wide range of composite options have been looked at through the investigations and evaluation process but generally disregarded as they did not improve cost effectiveness.

Selection process

23 On 15 and 22 July 2010 Council was briefed on technical aspects of each option. As a result, it became clear two options would not provide a suitable solution. They were:

- **Aquifer storage and recovery** – considered a New Zealand first and as early adopters of technology would carry related risks. This option relies on injecting river water into the aquifer and being able to extract the same high quality river water and avoid expensive additional treatment. Further confirmation of the concept would require trial injection wells. There were also concerns about public perception of drinking bore water and difficulty understanding the concept.
- **Borefield and treatment** – Ranked lowest in most categories and was the most expensive remaining option due partly to the extra treatment required.

24 The remaining two options were;

- **River Recharge with groundwater**
- **Maungakotukutuku Dam**

25 Subsequent investigations have confirmed the assumptions made about the Maungakotukutuku Dam as being a site suitable for a gravity dam.

26 The River Recharge groundwater modelling used a scenario based on full demand in 2060 during a 50 year drought. This worst case scenario identified a potential risk for saline intrusion.

- 27 To address these concerns CH2M/Beca investigated the effectiveness of closing some of the high risk bores close to the coast in conjunction with one of the following options:
- Further extending the borefield to spread out and reduce the extraction pressure on the aquifer.
 - A composite option involving the injection of river water into the remaining bores during the winter to provide a barrier against saline intrusion during extraction in the summer months.
- 28 The composite option proved to be the better of the two options and the estimates for the River Recharge option have been amended to reflect this.
- 29 If Council selects River Recharge as the preferred option then the following work needs to be carried out:
- Monitor existing wells near the coast to get a better understanding of the location of the salt/fresh water interface in both the deep and shallow aquifers.
 - Drill new wells and carry out additional pump testing to more accurately establish the quantity and quality of aquifer water available.
 - Carry out further modelling of the aquifer to refine the borefield design.
 - Prepare an assessment of environmental effects.
- 30 The results would be reported back to Council prior to a final decision being made to proceed with a resource consent application lodgement. It is expected this work would be completed by April 2011.
- 31 If this option is preferred then funding will have to be brought forward as some of this work is allowed for in construction budgets in later years. This would be the subject of a separate report in September 2010.
- 32 Consultation with Te Āti Awa ki Whakarongotai will continue while the investigation work is being completed.

Future proofing

- 33 During the detailed investigations into the two remaining options two things became apparent about the Maungakotukutuku Dam option:
- It is clearly one of the two best water supply solutions for this district now and into the future.
 - There is a possibility that the site could be developed for rural lifestyle blocks within the next 5 – 10 years.
- 34 There are three reasons why the Council should move to secure this site:
- The additional investigation work into the River Recharge option could show that the risks of saline intrusion are unacceptable and the Dam option could become the preferred solution.

- The River Recharge option is intended to secure the future water supply for the central catchments for the next 50 years. Ownership of the dam site would provide a 100 year design horizon.
 - The River Recharge option is intended to be progressively constructed over time as demand increases. If for some reason in the future expanding the River Recharge option was not viable (for example, extremely rapid population growth, changed extraction policies) the Council would have the option of constructing the Dam earlier and deferring part of the River Recharge expansion.
- 35 The Council should consider negotiating a sale and purchase agreement with the existing owners of the site subject to being able to successfully remove the DOC covenant on part of the site. If this can be achieved then the current review of the District Plan could ensure that the land is appropriately designated to protect the Council's future interests.
- 36 The value of the land necessary for the Maungakotukutuku Dam has been valued at \$1.29 million. The current rateable valuation for the total land titles affected by the dam is \$1.67 million. The extra cost for purchasing land for the dam site has not been included in the costs for the River Recharge option but was included in the Maungakotukutuku Dam option.
- 37 The next phase of work will include specifically defining the staging of the project. Funds required to fund the purchase of the dam site may be found by staging the capital expenditure over a considerably longer period. Alternatively the Council has recently established a strategic land purchase fund of \$2 million per annum, which could be used to assist with funding.

Technical Advisory Group (TAG)

- 38 TAG supports the CH2M/Beca recommendations to continue with the next phase of investigation and design of the River Recharge option with possible future proofing by purchasing the Maungakotukutuku Dam site. TAG has some concerns about some of the technical analysis (see TAG report attached as Appendix Six). These concerns will be considered in the next phase of work.
- 39 The TAG report lists a number of tasks that should be completed during the next phase of investigation and design for the preferred solution. TAG is expected to provide advice to Council on the solution up to the consent application milestone.
- 40 It should be noted that in the next phase there will be an independent peer review of the ground water modelling as this element is key to the success of any borefield options gaining consent.
- 41 The chair of the TAG, Mr Don Hunn will be in attendance at the meeting to discuss their report.

Financial Considerations

- 42 As set out in the 2009 LTCCP the water supply project has a budget of \$23,000,000 (in 2009 dollars) with a total LTCCP budget (including CPI) of

\$24,850,000. The next phase of work will look at staging in more detail to ensure the cost to rate payers is minimised.

Legal Considerations

43 There are no legal considerations at this stage relating to this report.

Delegation

44 Council may make a decision on this matter under Section A.2 of the Governance Structure 2007-2010: *“Exercise any other Council powers, duties and functions of a strategic overview nature including infrastructure development and coordination...”*

Consultation

45 The consultation programme relating to the Water Supply project has been comprehensive. Consultation will continue as the project progresses as required under the RMA.

46 Water supply options have and will continue to be discussed with the Te Āti Awa ki Whakarongotai Water Working Group. As part of this project a draft Memorandum of Understanding (MOU) relating to water is being readied for Council’s formal acceptance.

47 Once the MOU has been signed by both parties it is expected a cultural assessment will be conducted by Te Āti Awa ki Whakarongotai on the recommended options. It is intended to have this completed before resource consent application is lodged.

Policy Implications

48 There are no policy implications generated by this report. The LTCCP and other relevant strategic documents have been considered as part of the review of options captured in the attached report.

Publicity Considerations

49 This report and the attached reports are available to the public on the internet and district libraries. There will be a special feature in the local media on 25-26 August explaining Council’s final decision.

50 A series of public presentations have been arranged for the community as follows:

Date	Time	Location
30 August 2010	Monday, 7:30pm – 9:30pm	Raumati South Hall, Supper Room
31 August 2010	Tuesday, 1pm – 3pm	Paraparaumu Hall, Supper Room
7 September 2010	Tuesday, 7pm (Regular Community Board meeting)	Waikanae Senior Citizens Hall

14 September 2010 Tuesday, 7pm (Regular Community Board meeting) Ōtaki Memorial Hall, Supper Room

CONCLUSION

- 51 The Council's in-catchment policy, the capital cost, and the consenting risks rule out the Otaki options.
- 52 The four in-catchment options have been ranked as follows:

Rank	Option	Yield/ Security	Water Quality	P90 (\$m)
1	River Recharge with Groundwater	Confirmed subject to further modelling	River water	23.8
2	Maungakotukutuku Dam	Confirmed	River water	33.2
3	Aquifer storage and recovery	Confirmed subject to further modelling	River water minimal mixing with borewater	26.9
4	Borefield and treatment	Confirmed subject to further modelling	Treated borewater	37.3

- 53 River Recharge with groundwater is the best option as it:
- is on budget and is the lowest cost option;
 - builds on existing infrastructure;
 - has the least environmental impact;
 - able to be staged so costs are spread to match demand;
 - meets public concerns relating to water quality and cost;
 - uses the composite approach to meet security of supply requirement.
- 54 The Mangakotukutuku Dam site is the second best option. The site is unlikely to be available as a water supply solution in the long term unless the Council moves to buy the site, remove the covenant and provide appropriate planning protection.

RECOMMENDATIONS

- 55 That Council accepts the conclusions and recommendations in CH2M/Beca – Ranked Options- Summary Report dated 6 August 2010 (refer to Appendix Two).
- 56 That Council approves River Recharge with Groundwater as the preferred water supply solution for the Waikanae/Paraparaumu/Raumati catchment.
- 57 That subject to sufficient funding being brought forward Council approves further drilling, testing, monitoring, modelling, and assessment work on the River Recharge with groundwater option with results being reported back to Council before applying for resource consent.
- 58 That Council authorises the Chief Executive to negotiate the conditional purchase of the Mangakotukutuku Dam site subject to final approval by Council.

Report prepared by:

Approved for submission by:

Phil Stroud

Gary Simpson

Project Manager

Group Manager, Assets and Services

ATTACHMENTS:

Appendices:

1. Report DP-09-763 Water Supply Project Budget Reallocation – programme
2. Kāpiti Water Supply – Ranked Options Reports (dated 6 August 2010)
3. Raukawa - Water Options Report letter (dated 8 June 2010).
4. Council's letter – Water supply Project - Whakatikei Dam (dated 12 March 2010).
5. Greater Wellington Regional Council letter – Whakatikei Dam and possible KCDC involvement (dated 7 April 2010).
6. Technical Advisory Group Report (dated 6 August 2010)

**ONE: REPORT DP-09-763 WATER SUPPLY PROJECT BUDGET
REALLOCATION – PROGRAMME**

	<u>Activities</u>	<u>Estimated Completion</u>
Community Engagement	Information Review of Solutions	Dec 2009
	- review all the existing solutions historically considered,	Completed
	- develop new solutions,	Completed
	- investigate solutions to ensure fair comparisons can be made,	Completed
	- risk assessment,	Completed
	Solution Selection	June-Sept 2010
	- aid the community groups and iwi in the developing of selection criteria,	Completed
	- gathering of additional data,	Completed
	- conceptual design,	Completed
	- cost estimating,	Completed
	- consentability	Completed
	- Council decision on preferred solution	Proposed
	Preliminary design/AEE	Oct-Dec 2010
	- develop preliminary designs,	Partial
	- assess environmental effects for resource consent application,	Partial
	- prepare for statutory assessment, resource consent lodgement	Partial
	- affected parties consultation,	Partial
	- provide advise on procurement options,	
	Consent Approval	Sept 2011 to March 2012
- consenting process, including possible hearings		
Detailed Design	June- Sept 2012	
- produce a detailed design reflecting the consent requirements and the solution selected,		
Construction	June 2014 to Jan 2015	
- procure a contractor to construct the solution,		
- manage and monitor the construction, and finally,		
- commission the built solution.		

TWO: KĀPITI WATER SUPPLY – RANKED OPTIONS REPORTS (DATED 6 AUGUST 2010)

THREE: RAUKAWA - WATER OPTIONS REPORT LETTER (DATED 8 JUNE 2010).

8 June 2010



Mayor Jenny Rowan, QSO, JP
Kāpiti Coast District Council
175 Rimu Road
Private Bag 601
PARAPARAUMU

Tena koe Your Worship Jenny,

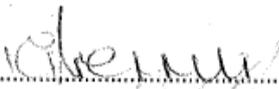
WATER OPTIONS REPORT

We are writing to formally express to you as tangata whenua of Ōtaki and as a sector of Ōtaki residents, our concern about the "out of catchment solutions" that are described in the Kapiti Coast Option Selection Report dated 4 March 2010, page 40.

We confirm to you our previously taken position in relation to the Ōtaki pipeline and well-field concept. This was expressed publicly by Te Waari Carkeek during the public speaking time to your council on 11 March 2010. The Ōtaki River and Ōtaki River gorge are not supported but we agree with the investigation of "in-catchment solutions" for Paraparaumu, Raumati and Waikanae being pursued by council.

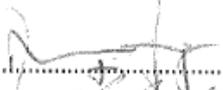
A copy of this letter will be sent to the Ōtaki Community Board and Te Āti Awa ki Whakarongotai for their information.

Na matou katoa,

For Ngāti Koroki Paddy Merrill  Date 8/6/2010

For Ngāti Huia ki Katihiku Nganeko Wilson  Date 8/6/2010

For Ngāti Pare Claudine Thompson  Date 8/6/2010

For Ngāti Maiōtaki Donovan Joyce  Date 8/6/2010

For Ngāti Kapu Patrick Hakaraia  Date 8/6/2010

For Nga Hapū-o-Ōtaki Rupene Waaka  Date 8/6/2010

FOUR: COUNCIL'S LETTER – WATER SUPPLY PROJECT - WHAKATIKEI DAM (DATED 12 MARCH 2010).



Kapiti Coast District Council

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12 March 2010

Dave Benham
Chief Executive
Greater Wellington Regional Council
PO Box 11646
WELLINGTON

COPY

Dear Dave

RE: WATER SUPPLY PROJECT – WHAKATIKEI DAM

As we have discussed previously, Kapiti Coast District Council needs to have additional water supply capacity in place by 2015. We are currently working through a process to identify a preferred option and CH2M/Beca has been engaged to assist with the project.

Their first task was to review all of the options, some 40 in total, and then shortlist in terms of cost, yield, and technical/environmental flaws. The GWRC Whakatikei Dam was part of this original consideration and I have attached a summary of how we were envisaging the system might work. This option was excluded from further investigation for several reasons;

1. The GWRC LTCCP 2009-19 indicates the dam is not projected to be completed until 2022.
2. The potential cost of entry to the GWRC water supply system and the Dam project in particular is likely to exceed our available budget (\$23 million).
3. Other technical limitations, for example, pipeline construction and pumping costs.

Our Water Supply project team has been asked by members of the Kapiti community to confirm the assumptions that have been made. There are therefore three questions we would like answered if possible;

1. If Kapiti Coast District Council wanted to be part of the Whakatikei Dam project would the GWRC be interested and, if so, could the programmed completion date of the dam be brought forward to 2015 or thereabouts?
2. Depending on the future of our existing Waikanae borefield the peak abstraction rate we would require from the dam could range from 10,000m³/day to 35,000m³/day. If it is assumed (for the purposes of this evaluation only) that capital and operational costs are allocated in proportion to demand, what percentage of the costs of the dam would be incurred by that level of demand.
3. Would there be any likelihood of an additional 'entry fee' being charged for KCDC joining the GWRC bulk water supply network?

Thank you for your assistance.

Yours sincerely

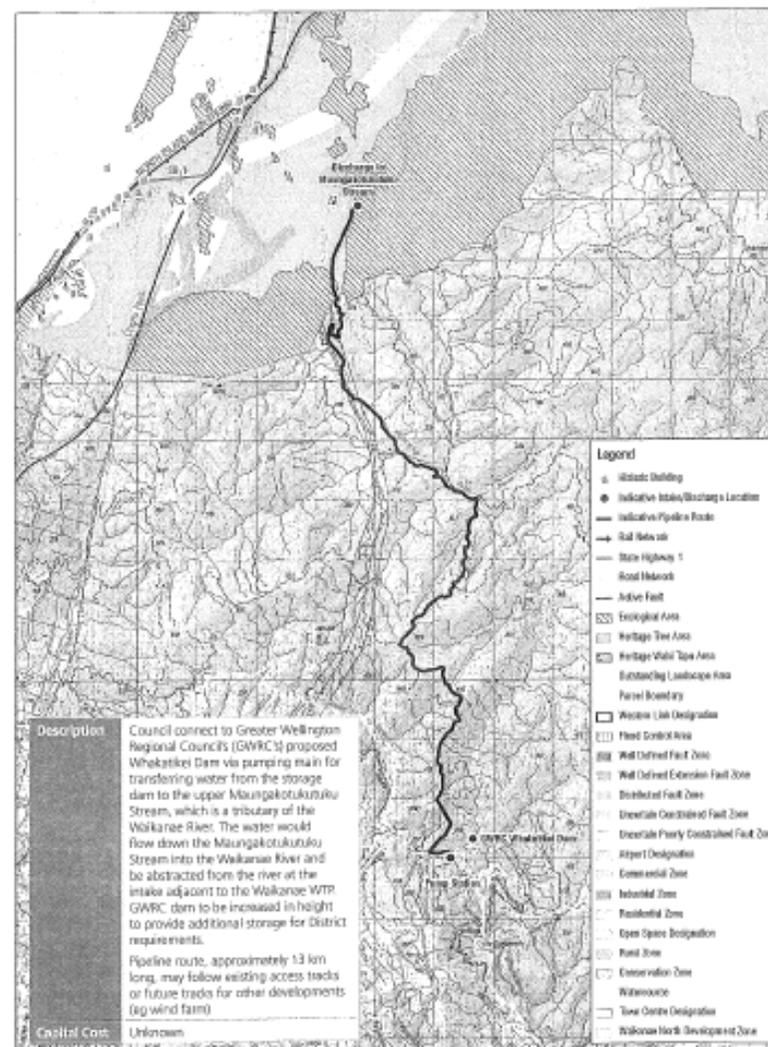
Pat Dougherty
CHIEF EXECUTIVE

delivering on the community's plan



Option 20 - GWRC Whakatikei Dam

Value	Criteria	Rating	Comments	
1	Quality of Water Supplied to Consumer	1 Public health	Almost zero	
		2 Taste, Odour and Aesthetics	Low	Risk of algal blooms in reservoir
		3 Hardness	Matches existing river supply	
2	Social	1 Impact during construction	Medium impact	Impact on forestry operations from pipeline construction
		2 Impact for ongoing operation	Low impact	
		3 Social impact of catastrophic failure	Low	
		4 Other social benefits (eg. recreation)	No	
3	Cultural	1 In catchment solutions	Water source is not fully within community catchment	
		2 Water conservation	Not supportive	Whakatikei Dam not within Kapiti District so possible impression of limitless water from out of district. Also large volume of stored water
		3 Identity	Identified risk of compromising this value	Identity of Hutt and Waikanae communities may be affected by transfer from Whakatikei River to Waikanae catchment.
4	Environmental	1 Impact on in-stream ecology	Medium	Discharge to Maungakotukutuku Stream
		2 Impact on vegetation/terrestrial ecology	Medium	Aim to keep to existing tracks but some vegetation clearance likely along pipeline route. Vegetation to be confirmed.
		3 Impact on groundwater	Low	
		4 Impact on natural and/or urban landscape	Low	
		5 Impact on future use of land	Low	
5	Performance	1 Ability to make best use of existing infrastructure	Medium	Not using Waikanae Borefield
		2 Ability to be staged over time	Low	
		3 Ability to expand	Medium	Potentially install larger pipe
		4 Security of supply over time	High	
6	Implementation	1 Difficulty in obtaining resource consents	Medium	Possible ecological areas
		2 Difficulty in acquiring land and/or access	Medium	Depending on land ownership in northern area
		3 Level of uncertainty in water resource and design/technology	Low	As GWRC may not build dam until 2020 at earliest, would need to be in conjunction with other interim water supply measure Could build pipeline to Whakatikei River now GWRC may want contribution to the base cost of the dam (\$140m including WTP Dam and a pipeline to bring into Wellington network)
7	Economic	1 Cost to construct	\$10-20 million	Assume \$1 million for raising the dam and cost excludes contribution to base cost of dam
		2 Operational cost	Higher than current river water supply	Additional pumping to transfer water over catchment boundary
		3 Impact on opportunity cost of other potential water users	Medium	Possible impacts on GWRC's future use of water



FIVE: GREATER WELLINGTON REGIONAL COUNCIL LETTER – WHAKATIKEI DAM AND POSSIBLE KCDC INVOLVEMENT (DATED 7 APRIL 2010).

12 APR 2010



7 April 2010

File No: B/19/12/01

Mr Pat Dougherty
Chief Executive
Kapiti Coast District Council
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Paraparaumu 5254

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142 Wakefield St
New Zealand
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Dear Pat

Whakatikei dam and possible KCDC involvement

Thank you for your letter of 12 March addressed to Dave Benham. Just prior to Dave going on leave for several weeks, he asked me to respond to you.

You have asked three questions so you can respond to members of the Kapiti community.

Question 1: If Kapiti Coast District Council wanted to be part of Whakatikei dam project, would the GWRC be interested and, if so, could the programmed completion date of the dam be brought forward to 2015 or thereabouts?

Answer: This Council is fostering an integrated approach to water supply in the region, so any project that can assist multiple TLAs is certainly of interest. There may also be environmental and economic benefits from building one water retaining structure instead of two. While any decisions of this nature would rest with the Councillors, I would certainly be recommending to them that we took a close look at any projects that could be of benefit across the region.

Greater Wellington has indicated in its 2009-19 LTCCP that it would expect to make a decision about starting the Whakatikei dam in 2014 with completion in 2022. The start date though is subject to a number of assumptions about other water supply projects and possible changes in consumption through demand management measures. While we have carried out preliminary work for the Whakatikei dam and associated infrastructure, more investigations are required before we would be in a position to apply for a resource consent. Our programme allows about three years to obtain the consents and if necessary, to go through any appeal process. Design and construction would then take 4-5 years with the initial work being constructing a bypass tunnel and cofferdam. Unfortunately even if GW did bring the project forward, it would seem the earliest date for completion would be about 2020. However, demand management and other possible initiatives may well result in the project starting later than 2014.

Question 2: Depending on the future of our existing Waikanae borefield the peak abstraction rate we would require from the dam could range from 10,000m³/day to 35,000m³/day. If it is assumed (for

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Water, air, earth and energy – elements in Greater Wellington's life that combine to create and sustain life. Greater Wellington promotes quality for life by ensuring our environment is protected while meeting the economic, cultural and social needs of the community.





the purposes of this evaluation only) that capital and operational costs are allocated in proportion to demand, what percentage of the costs of the dam would be incurred by that level of demand.

Answer: On the basis of the information attached to your letter, I'm assuming that KCDC would be responsible for a pumping station and pipeline to discharge water into the Maungakotukutuku Stream. Likewise, GW would be responsible for the total cost of its water treatment plant and distribution pipeline. This would mean that the only significant commonly shared facility would be the dam itself. It is perhaps more appropriate to measure the utility of the dam by the volume of the stored water rather than any abstraction rate. Each party would have rights to an agreed volume of water.

A 43m high dam is proposed with a storage reservoir of 8,400 ML. Allowing for siltation during the life of the dam and some other uncertainties, we are expecting a working capacity of 5,000 ML. If KCDC required say 1,000 ML storage capacity, then on a straight pro-rata basis KCDC's costs would be 20 percent. Please note I have just used this as an example only. At this stage, we have not yet finalised the height of the dam, with the reason being that a 50% increase in water storage can be gained from increasing the dam height by 6m.

Question 3: Would there be any likelihood of an additional 'entry fee' being charged for KCDC joining the GWRC bulk water supply network?

Answer: Again, this would be an issue for the Council after discussing it with our four TLA customers. Taken in this context though, it is difficult to see that there would be justification for an entry fee if the Kapiti Coast and metropolitan Wellington are operated as separate water supply networks but under one management.

If the networks were joined in some way, such that water from a source other than the Whakatikei River could be provided to the Kapiti Coast, then there would be enhanced security of supply to KCDC. Without knowing what the arrangements would be, it is difficult at this stage to say whether there would be any upfront fee or whether there may be an annual charge related to operational costs.

If you require any further information, please do not hesitate to contact me.

Yours sincerely

A handwritten signature in black ink that reads "Murray Kennedy".

Murray Kennedy
General Manager
Utilities and Services

Copy David Benham
Chief Executive

SIX: TECHNICAL ADVISORY GROUP REPORT