



## SPECIAL EDITION RUATANIWHA WATER STORAGE SCHEME: APRIL 2013

HAWKE'S BAY REGIONAL  
INVESTMENT COMPANY LTD



### RIVER

Improve summer  
river flows

### EMPLOYMENT

An additional 2,250  
full-time jobs

### ECONOMY

Potential to increase regional  
GDP by \$235 million per year

### MAURI

Reduce slime and algae  
and improve water quality

## Questions and Answers

We are being asked lots of questions by people in the community about the Ruataniwha Water Storage Scheme.

Whether you are a business person, employee, farmer, environmentalist, city dweller or living in Central Hawke's Bay district, you will all have different views and therefore questions.

In this special issue we answer some of the more commonly asked questions around the scheme, potential effects on the environment, and what it could do for our region.

This newsletter aims to keep you up to date. There will be more opportunities to have your say, right up to when a decision is made on whether or not to proceed with the scheme.



Stark contrast: irrigated and drought affected land.



A farmer feeds stock in drought hit Central Hawke's Bay this summer. Photo Hawke's Bay Today.

## It's been a record dry summer

There's no better time to talk about the benefits a modern water storage scheme can bring to our region.

Hawke's Bay is dealing with the effects of the driest spring and summer period in over 50 years. Considering predicted trends for a drier, warmer climate on the east coast and an increase in weather extremes (meaning droughts are more likely to occur), we ask: "When would you have clearer evidence that now is the time for action to safeguard our region's economy?"

Once again, farmers across the region are doing it tough - forced to sell off underweight stock and bring in feed. They face a bleak few years ahead while they recover from the financial cost of this drought, as well as the uncertainty of what next summer will bring.

These events impact on the whole region's economy as farmers' spending potential lessens with each progressive dry spell. Farmers with irrigation are coping better, however many are also dealing with irrigation bans as rivers drop below minimum levels.

The Ruataniwha Water Storage Scheme (RWSS) is a proactive approach to providing better water security for irrigators, while improving water quality and quantity in the Tukituki River. While the scheme is seen as relatively forward-thinking in New Zealand, water storage has been used successfully in other parts of the world - such as Australia and South Africa - for decades.

### With water we can achieve so much

Tikokino arable farmer Phil King talks about what he's been able to achieve on irrigated land. "We've made that water go a long

way, and it's allowed us to continue to produce crops. We've also been able to offer crop by-products as feed to local farmers. So it's been a win-win situation," says Mr King.

He has already signalled his intention to buy access to water from the Ruataniwha Water Storage Scheme, should it go ahead, and is encouraging other farmers to get on board. "I see what I can do with the little bit of water I have, and if we have irrigation across the Ruataniwha Plains the effect will be astronomical. We have to do this or our region will stagnate."

### An economic buffer for Hawke's Bay

Hawke's Bay Chamber of Commerce president Katja Williams agrees, and has been encouraging businesses to support the scheme. "The water scheme won't fix the drought, but it would give the region some economic stability through an extremely stressful time," she says. "It means that farmers in the Ruataniwha Plains would have a reliable supply for irrigation, allowing them to continue to produce crops and feed, supplying an income stream for the region and also feed options for drought-affected areas."

Our rivers are also suffering from the current dry spell with slime and algae resulting from incredibly low flows. This is no fun for anglers, swimmers and kayakers. Not to mention the fish and other creatures who live in the river systems.

A modern water scheme using advanced construction and design techniques will improve river values and summer flows in the Tukituki River for the benefit of everyone.



## Improving Our River Strengthening Our Community

An enhanced environment and economic development are not mutually exclusive. The challenge is to plan for outcomes that deliver benefits across the board.

At the heart of all the work that continues in the Tukituki catchment, is the desire to improve the ecological, recreational and cultural values of the river. Excessive algae and slime during low summer flows are the biggest freshwater quality issues.

At the moment our only option to control algal and slime growth is through the management of the amount of nutrients entering the river system.

It may seem strange to manage a nutrient, given that food nutrients are essential for the maintenance of human life. However, excessive nutrients can upset the ecological balance of a river. While we think the algae problem in the Tukituki River needs to be improved, we want to use methods that are likely to succeed within a reasonable timeframe and at a cost that is acceptable to the community.

### Cutting-edge approach

Dr Kit Rutherford of NIWA has developed a new computer modelling approach called Tukituki River Model (TRIM). TRIM is based on research carried out over the last few years by a multi-agency team including NIWA, Cawthron Institute and Hawke's Bay Regional Council (HBRC).

This research has found that phosphorus is the key nutrient contributing to slime and algae growth in the middle and lower Tukituki. Reducing phosphorus will slow down slime and algae growth. The good news is that this can be achieved relatively quickly and cost-effectively, as a significant amount comes from CHBDC wastewater discharges and land erosion.

Other regions, such as Taupo, have chosen to manage water quality by reducing nitrogen inputs or, in the case of the Manawatu-Whanganui Region, managing both nitrogen and phosphorus.

If we were to attempt to control algae growth by managing nitrogen, we would have to remove the vast majority of farming in the catchment. This approach would take many decades to have any effect as the nutrient in the older, deeper groundwater would continue to flow into surface waterways. This approach would also have a detrimental effect on the Hawke's Bay economy, resulting in significant job losses and social upheaval - a position no region would take lightly.

### What effect does CHB wastewater have on the river?

A major contributor to high algae and slime growth is the phosphorus coming from Central Hawke's Bay sewage treatment ponds. Central Hawke's Bay District Council is currently working to improve its treatment of discharges from the Waipukurau and Waipawa wastewater plants, which will significantly reduce phosphorus entering the river system. This improvement is required under the resource consent conditions imposed by HBRC, and must be met by September 2014.

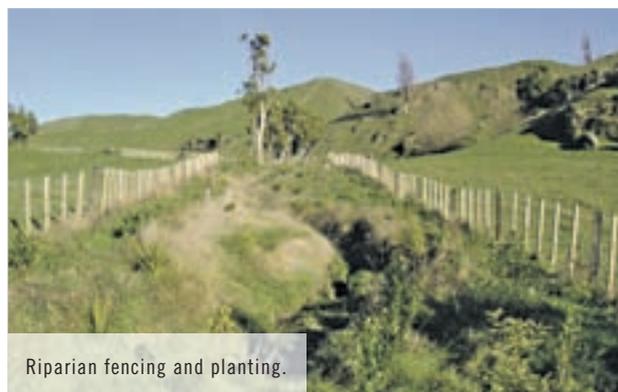
### Keeping stock out of our waterways

Another obvious way to reduce phosphorus is to fence stock out of streams. It is also helpful to plant and protect stream margins to intercept runoff from pasture, especially soil and other sediment from ploughed fields.

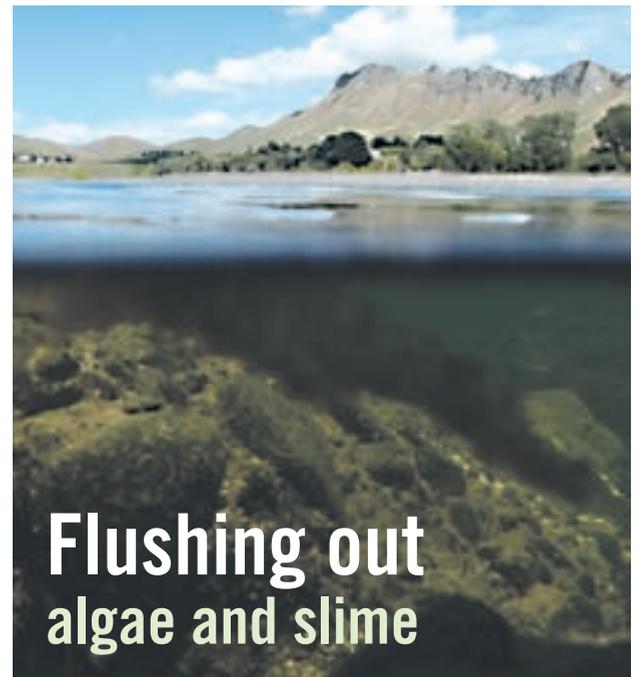
NIWA's TRIM approach models the effects of different land use scenarios, notably the intensification that is likely if irrigation goes ahead. It investigates:

- the impact of nitrogen and phosphorus distribution on the land
- how long it takes to reach the Tukituki River (nitrogen in groundwater takes on average 20 years)
- what losses occur along the way (typically 50%)
- what effect they have on the frequency and severity of slime.

Dr Rutherford describes this catchment wide modelling as 'cutting edge' research while recognising the inevitable uncertainties with any modelling. It is seen by HBRC as the key to effective future management of the Tukituki catchment.



Riparian fencing and planting.



## Flushing out algae and slime

A less talked about environmental advantage of the Ruataniwha Water Storage Scheme is the ability to create 'flushing flows' to wash out algae and slime.

Excessive algae and slime (periphyton) is a regular occurrence in the lower Tukituki River, particularly during long summer low flows. This is not good for the river's ecological, recreational and cultural values.

RWSS would deal with this problem by providing an artificially created 'fresh' or 'flushing flow' to flush out the river, removing much of the algae and slime on riverbanks and rocks. Dogs are attracted to some algae, some of which can be fatal if ingested. Flushing flows will reduce this risk.

Four 'flushing flows' have been allocated annually to provide relief to the river during the summer period. A pre-determined amount of water would be released when algae and slime have reached nuisance levels.

These flushing flows would not be massive floods. They will provide a strong enough flow to remove much of the algae and slime on riverbanks and rocks. The intention is to 'piggy-back' the release of these flushing flows on natural small rainfall events.

The Cawthron Institutes report *Aquatic Ecology Assessment of Effects* commented that "nuisance periphyton accumulations will be able to be managed to a large extent using these flushing flows. This is a clear environmental benefit of the Scheme over the status quo and will help to meet the periphyton objectives of the proposed Tukituki Plan Change 6."

### Case study: Opuha Dam

South Canterbury's Opuha Dam is a good example of economic and environmental gains made from water storage.

The 50 metre high earth dam at Opuha has a single hydro turbine and a lake covering just over 700 hectares. It can store more than 70 million cubic metres of water.

The project provides secure water for irrigation, electricity generation and commercial and domestic supply for the Timaru District Council. It also stores reserve water to supplement flows in the Opuha and Opihi rivers in times of drought.

Research shows these 'flushing flows' - which are being considered as part of RWSS - are an effective tool in helping to control slime and algae during dry spells.

The project has been immensely successful, particularly for the local Fairlie community, where the lake provides recreational benefits enjoyed by both locals and visitors alike. The rivers have been restored to their pre-irrigation condition. The fisheries are in a pristine condition and fish caught are of a size that the older generation remember from the 1950s.

# What could a water scheme do for our region?

For a start it would open up more land for farming, provide a more reliable water supply to irrigators in Central Hawke's Bay and improve the environment in the much-loved Tukituki River.

## What does that mean for the average person in Hawke's Bay?

If the scheme does go ahead, it would create more jobs in a region with a current unemployment rate of 8.6%. These jobs will initially come in the construction phase, which is expected to take approximately 3 years.

A regional economic impact report has estimated the scheme will increase regional GDP by a one-off \$350 million as a result of both on-farm and off-farm investment. That includes \$230 million in household income into the region annually and 4,000 job years of work. Most of these will happen in the first five years.

Once the scheme is operating at full capacity, it is estimated that the increase of activity in the farming, processing and supporting industries could raise regional GDP by around \$235 million per year. There is also potential for an extra 2,250 ongoing jobs to be created in the region.

## Benefits for Central Hawke's Bay and beyond

Understandably, the biggest change will be felt in Central Hawke's Bay. This part of our region relies on primary production and associated processing and support industries. In recent years it has been hit hard by meat processing plant closures, its population is shrinking and school rolls are falling.

RWSS would inject fresh life into Central Hawke's Bay. By supporting around 25,000 hectares of new land use, it will create more jobs, attract investment to the area, and offer more opportunity for those already there.

The wider region should also benefit. Processing industries in the Hastings district would see increased workload, and the transport sector would experience increased volume - a direct result of more productive farming.

Respected Māori leader Professor Roger Maaka believes RWSS holds huge potential for Māori in Hawke's Bay, in terms of jobs, social opportunities, cultural wellbeing and the mauri of the Tukituki River.

## Keeping you informed...

A vital part of the journey is working with our community and others around the country to get their input. This includes farmers, community groups, national and local government.

For example, Department of Conservation Hawke's Bay Area Manager Chris Lester acknowledges it has been a full and robust process in which DoC has fully participated, and continues to do so.

### Land & Water Strategy

In 2011, HBRC released its first ever Land and Water Strategy outlining the commitment to manage land and water in the region. The strategy was developed after a Regional Water Symposium, which hosted business, agricultural, environmental and community organisations as well as tangata whenua and individuals. An external reference group worked with HBRC to develop the policies and directions for a regional water strategy.

### Long Term Plans

After community consultation during the 2008 Long Term Plan process, HBRC began developing a more active investment strategy to provide the region with more environmental and economic wins.

As part of that strategy, HBRC agreed to set up an investment company (HBRIC Ltd). As a limited liability company, HBRIC Ltd can enter into commercial relationships with other investors on projects such as RWSS, where substantial extra investment is required.

In 2012, HBRC consulted through its Long Term Plan on a budget provision of \$80 million for an equity stake in RWSS, should it proceed.

### Tukituki Choices Discussion

In September 2012, HBRC released the Tukituki Choices discussion document with four scenarios for land and water management in the Tukituki catchment. HBRC held public meetings and sought feedback on options with and without water storage.

### Tukituki Plan Change 6

In February 2013, HBRC adopted the Tukituki Plan Change 6, setting new rules for land and water management in the catchment, and limits on nitrogen and phosphorus in the Tukituki River. Plan Change 6 meets the requirements of the National Policy Statement for Freshwater Management.

The RWSS consent applications have been prepared in the context of this framework, which is stricter than the Regional Resource Management Plan as it currently stands.

HBRC proposes to request the Minister for the Environment to 'call-in' the Plan Change so that it be considered along with the RWSS resource consents (made by HBRC's Investment Company, HBRIC Ltd) as a combined proposal of national significance through the Environmental Protection Authority. This is programmed for May 2013.

This would permit an independent and integrated decision-making process through a single Board of Inquiry with a final decision on whether it has been granted consent in early 2014. There will be further opportunities for community feedback through this process, and again when HBRC receives HBRIC Ltd's final recommendation on whether to proceed with the scheme.

## Case study: Ashburton

### For an insight into how one community has benefitted from irrigation, take a look at Ashburton.

Farmers there have been irrigating since the mid 1960s, although the early adopters were very much pioneers in the industry. Today close to 90,000 hectares of farmland in the area is irrigated.

Ashburton Mayor and arable farmer Angus McKay says irrigation has been the makings of the mid-Canterbury town. He says while irrigation guarantees a harvest for farmers, it also provides tangible benefits to the wider community.

Ashburton's population is growing ahead of estimates, its GDP was up 8.8% last quarter and the area has an unemployment rate of just 0.9%

"Irrigation has been absolutely brilliant for the Ashburton district as a whole," he says. "I think irrigation starts everything. There is confidence in the community and businesses attract business. I believe the prosperity in Ashburton is more irrigation-led than earthquake-led". He says while the decision to sign up to water contracts is a big one, farmers who have taken the leap are now wondering why they didn't do it sooner.

## Inside RWSS

### Before a scheme of this magnitude is given the green light, a huge amount of work needs to be done to ensure it is financially, technically and environmentally feasible.

The assessment process comprises four phases to determine whether the RWSS is built:

#### 1 Identifying the problem/opportunity (completed)

The research into how to provide more security to irrigators in the Tukituki catchment, while also improving the water quality and quantity in the Tukituki River. Through that process water storage was identified as a potential solution

#### 2 Pre-feasibility assessment (completed)

A 'desktop' assessment with low level surveying of water storage concept, and a desktop economic assessment identified six medium scale storage sites with 12 in reserve.

#### 3 Full feasibility assessment (completed)

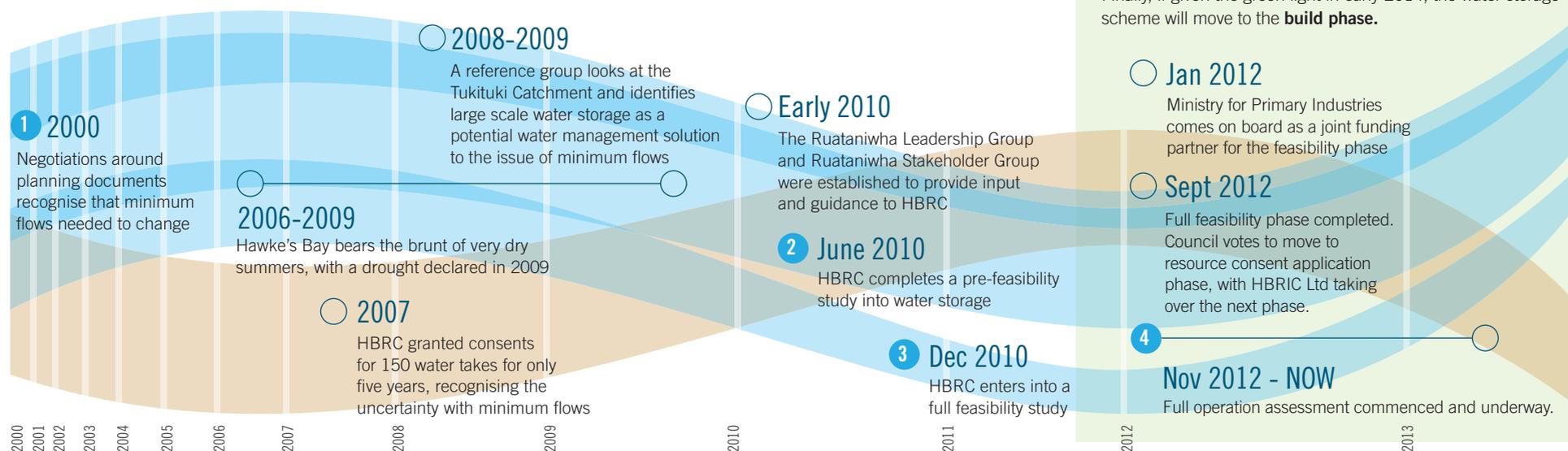
Detailed engineering, environmental, economic and financial assessment of the water storage project ruled out 17 sites and focussed on the proposed Makaroro site.

#### 4 Full scheme operational assessment (current phase)

Turning feasibility into an actual design, actual costs, actual environmental improvements, actual resource consents, and actual investment and investors. This is the phase that enables a final decision to be made whether or not to proceed.

Finally, if given the green light in early 2014, the water storage scheme will move to the **build phase**.

## From then to now: the RWSS timeline



## Questions & Answers



### Ruataniwha Water Storage Scheme (RWSS) is moving quickly - what's the rush?

HBRC and its investment company HBRIC Ltd believes it is in everyone's interests - whether or not they support the scheme - to know if it will proceed as soon as possible. It is hoped a decision will be made by early 2014.

### When will we know if RWSS is going ahead?

By early 2014 we should know whether RWSS has gained resource consent. If so, a decision will be made as to whether the scheme will proceed. Prior to this, HBRIC Ltd will consider whether there is enough farmer demand for the water and if there are suitable investors for the scheme.

### Will the RWSS increase nitrate concentrations in the Tukituki catchment?

While there is likely to be an increase in nitrate levels from intensified farming, we are proposing new regulatory limits for nitrate to protect fish and invertebrates. We propose reducing algae and slime by setting phosphorous limits, which will need to be met by 2030.

### Will RWSS inundate a scenic reserve, and demolish a relatively rare remnant of forest type and remove habitat for six endangered species?

Substantial lakeside and riverside enhancement will occur to improve habitat, however 22 hectares of DOC land will be lost along with 100 hectares of ecologically significant habitat. A \$7.4 million mitigation package is proposed, if RWSS proceeds, for planting and protection, pest control and recreational facilities.

### Will RWSS turn Central Hawke's Bay into a huge dairy farm?

Farm management consultant Andy McFarlane, who undertook an on-farm economic analysis for RWSS, says no irrigation scheme ever proceeds on one land use. He says modelling for the scheme shows about 38% dairy, followed by intensive arable and intensive finishing.

### Isn't on-farm storage a better option?

On-farm water storage was investigated as a potential solution. However individual storage is expensive and cannot provide the reliability of a large-scale water scheme. Hawke's Bay would need around 1,000 small dams to create the same water security as RWSS, but this would not provide any river flow benefits to the Tukituki River.

### Will RWSS make water quality worse?

The Tukituki River is not considered degraded on a national scale. In fact, for the majority of the time, water quality is very good. It

is during drought and low flow periods, when the water quality is poorest. The Tukituki Plan Change proposes methods to improve the water quality and flows affecting key river values. The RWSS will provide flushing flows and other benefits to improve water quality which would otherwise not be available.

### Will RWSS prevent fish passage?

Yes, so a trap and transfer programme is being proposed to help fish move through the river.

### It is true HBRC is planning to levy all CHB farmers \$3,000 and all urban ratepayers \$30 per year to pay for RWSS?

No, this is incorrect.

### Will RWSS increase nitrate levels in groundwater, to a level above the NZ drinking water standard?

Modelling indicates that a few localised nitrate level groundwater hot spots may develop over the next 50 years. HBRC will continue to model, monitor and manage this through its State of the Environment monitoring and reporting, using measures that include nutrient budgeting, riparian protection and farm management planning.

### Why can't HBRIC Ltd give farmers a firm price on the cost of water from RWSS?

Access to water from the scheme is currently estimated to cost between 22-25 cents per cubic metre. The cost will be better known in September 2013 when the design and construction model has been finalised. However, the outcome of the resource consent application (known early 2014) may influence the final price.

### Is it true the project will cost ratepayers \$600 million?

No, that is not right. In 2012, HBRC used the Long Term Plan process to consult on a budget provision of \$80 million for an equity stake in RWSS, should it proceed. If RWSS goes ahead there will be a range of investors helping to fund the scheme. RWSS has the potential to bring \$400-500 million dollars of investment into Hawke's Bay.

### Will HBRC have to borrow a lot of money to fund RWSS?

No, HBRC has a strong balance sheet and, should RWSS proceed, the Council will fund its contribution to the scheme through its investment portfolio. Feasibility work to date has also been funded through the investment portfolio, as well as funding from the Ministry for Primary Industries.

## IN BRIEF...

### DESIGN & CONSTRUCTION

HBRC's Investment Company, HBRIC Ltd has fielded national and international interest from companies interested in tendering for the design and construction of RWSS. HBRIC Ltd is working with Bouygues Construction and OHL-Hawkins Joint Venture through the next phase of design and construction planning, before selecting a final partner.

### WATER UPTAKE BY FARMERS

HBRIC Ltd is calling for expressions of interest (EOI) from farmers who wish to participate in RWSS. Until August 2013, farmers are being encouraged to sign a non-binding expression of interest in the scheme. A commercial manager has been appointed for the scheme to work with farmers considering signing up for water contracts. HBRIC Ltd is considering how farmers might also invest in the scheme, with a view to having a firm proposal in place by September 2013.

### RESOURCE CONSENT APPLICATIONS

HBRC proposes to request the Ministry for the Environment to 'call-in' the Tukituki Plan Change in order that it might be considered along with the RWSS resource consent applications made by HBRIC Ltd as a combined proposal of national significance. If the Minister for the Environment agrees to call them in the timing is planned for early May 2013. This will permit an independent and integrated decision-making process through a single Board of Inquiry.

### SECURING INVESTORS

HBRIC Ltd and BNZ Advisory are considering a Build, Operate, Own and Transfer (BOOT) model to encourage investors. Under this structure, investors would buy into the scheme and receive set returns for an agreed period, between 35-70 years, after which the scheme would be transferred back to HBRC ownership. There will be a potential proportional share for iwi and farmer investors.



### Contact us

You can get extensive information at: [hbrc.govt.nz](http://hbrc.govt.nz) - keyword 'Ruataniwha'

### What is HBRIC Ltd?

Hawke's Bay Regional Investment Company Ltd (HBRIC Ltd) is HBRC's investment company. HBRIC Ltd is using its considerable expertise to assess the investment and financial viability of RWSS. HBRC awaits HBRIC Ltd's final recommendation, with an indication of the EPA's evaluation before making a final decision, which will be subject to consultation.

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