greater WELLINGTON
REGIONAL COUNCIL

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Proposed additions to the 2009/10 Capital Works Programme - Queen Elizabeth Park

1. Purpose

To seek approval from the Committee to vary the 2009/10 Capital Works programme to accommodate the requirement to undertake unbudgeted replacement works for a farm bridge and water supply upgrade at Queen Elizabeth Park.

2. Significance of the decision

The matters for decision in this report do not trigger the significance policy of the Council or otherwise trigger section 76(3)(b) of the *Local Government Act 2002*.

3. Background

The Parks Department undertakes regular inspections of its infrastructure assets to see if they comply with the legislative and Greater Wellington Regional Council (GWRC) standards stated in its asset management plans. While staff inspect and maintain what could be called minor assets, engineers are also called upon to inspect and report on large, high risk assets. As part of this regular inspection regime, engineers have highlighted the need to undertake major upgrades urgently to a couple of key pieces of infrastructure that have not been budgeted to occur in the Long Term Council Community Plan.

4. Farm Bridge, Whareroa Stream, Queen Elizabeth Park

The road that the bridge is part of is the main farm access road that links Poplar Avenue to the north with MacKay's Crossing in the centre of Queen Elizabeth Park.

The road itself is used daily by the farmer for utility vehicle, quad bike, and stock access. It is also used infrequently as access for heavy machinery required for general farming operations such as trucks carrying feed, especially over the summer months.

The road is normally closed to the public but also offers future opportunities to provide a walking and cycle access link between Raumati and MacKay's Crossing.

In 2003 the bridge was inspected and repairs were recommended to be undertaken to the deck and handrails. However, the repairs were not carried out as the work was considered a low priority, given that the bridge was not open to the public and was only accessible to farm traffic and stock. Upgrading the bridge was also not carried out as the bridge should be replaced in its entirety at a later date.

In 2007 an engineering inspection identified a growing concern with the structural load bearing ability of the bridge and a need to carry out major upgrading or a total replacement of the structure. The bridge was found to be unsuitable for heavy traffic that currently uses it. The handrails, deck and bearers are all below strength for heavy traffic and the timber piles supporting the bridge are of unknown strength.

As a temporary measure, a sign has been installed restricting the bridge to a 3.5 tonne maximum axle load. The consequence of this is that farm operations are limited in their ability to service the southern part of the grazing area of Queen Elizabeth Park. Tractors, trucks and trailers often may exceed the maximum axle load and there is no reasonable alternative route available.

Further inspections in December 2007 and August 2008 investigated the options for strengthening or replacing the bridge. After assessing the options the engineers recommended that a concrete box culvert be designed and installed completely replacing the existing bridge. Repairs to the existing structure were considered to be relatively costly and a short-term option only. The construction of a concrete box type culvert would provide the best long-term solution to access through the farm and across the stream. The decision to use a concrete box culvert means that long-term maintenance costs are low compared to maintenance of a timber bridge.

In March 2009 an independent estimate of the replacement of this bridge by JAD Civil Design Ltd confirmed a cost range of $94,000 to $108,000 to complete this work. This figure included design and consenting.

5. Water Supply Upgrade – Queen Elizabeth Park

In 2008 the Parks Department undertook an investigation into how well our four main park water supplies (Kaitoke, Battle Hill, Belmont and Queen Elizabeth) complied with the new amendments made to the *Health (Drinking Water) Amendment Act 2007*. This investigation identified a number of deficiencies in drinking water supplies across our regional parks. While most parks required only minor work to bring the public drinking water supplies into line with the new legislation, a number of issues were raised in relation to the water supply at Queen Elizabeth Park.

5.1 Regional parks' water supply compliance requirements

The *Health (Drinking Water) Amendment Act 2007* requires that all drinking

water suppliers comply with the *Drinking-Water Standards for New Zealand* and have approved public health risk management plans according to a programme staggered according to decreasing supplier size (large supplies must comply by mid-2009, while very small supplies have until 2013).

5.2 How does the present water supply system work?

Water is pumped from a bore drawing water from an aquifer 10 m below the surface. Very little information is available about the general water quality but the iron and manganese levels in the water are greatly in excess of the values set by the *Drinking-Water Standards for New Zealand*. The Drinking Water Standards require that the drinking water authority be informed immediately and appropriate action taken if such a transgression occurs.

The water is pumped directly to twin water storage tanks. Treatment is by chlorine gas dosing to the water in the bore casing. High doses of chlorine are needed because of the high iron and manganese concentration.

Kapiti Coast District Council (KCDC) staff members maintain the chlorination system. This is appropriate as the specific hazards associated with chlorination means that the work needs to be done by suitably qualified staff. We currently pay KCDC around $18,000 per year to maintain the treatment and bore supply to the park.

Water quality is tested monthly by the ELS laboratory.

5.3 What is currently wrong with it?

The Queen Elizabeth Park water supply has a number of serious problems.

(1) Historical monitoring data indicates that the water quality does not meet the requirements of the Drinking-Water Standards in relation to protozoa protection, manganese toxicity and aesthetic quality.

(2) The distribution network suffers a very high level of leakage and parts of it are nearing the end of their useful life.

(3) Unfortunately, as chlorine gas in solution is corrosive, the casing appears to have been compromised and the bore needs to be replaced. There is also subsidence occurring next to the bore because of the casing being perforated. The bore may fail completely at any time.

5.4 What can be done?

The ongoing costs associated with maintaining a reliable supply and one that meets the requirements of the *Health (Drinking Water) Amendment Act 2007* would be relatively expensive to treat to an acceptable standard, especially given the large water flows caused by leakage.

Because of this, we investigated the decommissioning of the bore and the connection of the water supply to the town supply mains at Raumati in 2008. The preferred solution is to retain the bore for farm stock water only and to connect the domestic park water supply (public toilets, public drinking water, Ranger house and office) to the town water supply at Raumati.

KCDC has indicated that it is happy to supply potable water to the buildings in the park if the leakage problems are resolved first. The farm water network would need to remain on the bore supply, as KCDC would not wish to supply water to a farm. The farm would have to remain on an independent supply, although this would not need to be suitable for human consumption.

Work has been undertaken to locate the leaks and it appears that the leakage is predominantly within the farm system which is less of a problem if the water servicing the farm is not treated.

The bore would need to be replaced with a similar structure in the same location as it is not practical to repair it. Existing pipework would be connected to the new bore. The same pump would be used.

It is recommended that this work takes place as soon as possible as:

(1) The water quality is very poor/moderately unhealthy.

(2) The bore may fail completely at any time.

Once the park is transferred to town supply, the Ministry of Health should be asked to remove the water supply from the *Register of Drinking Water Supplies for New Zealand*. A public health risk management plan would not be needed.

5.5 Financial Implications

Table 1 outlines the total cost of both projects:

Project	Cost $
Farm Bridge, Whareroa Stream, Replace with a concrete box culvert, including associated engineering design, consents and 20 percent contingency.	106,000
Water Supply Upgrade, MacKay's Crossing Decommission chlorine treatment and connect supply to town supply, including project management and consents costs. Drill and install new well.	50,000
Total cost	156,000

The farm bridge is an integral part of the farming operation. This activity brings in approximately $42,000 per annum from this part of the park.

The debt servicing costs (principal plus interest) for both projects amount to $15,400 per annum. As stated above, GWRC pays KCDC approximately $18,000 per annum to maintain our public water supply system at Queen Elizabeth Park. If the above work was carried out, there would be annual maintenance savings of $15,000 (after allowing $3,000 per annum to service the bore and town water supply).

Overall, the cost to the ratepayer is effectively offset from the farming activity and the reduced cost for the water supply system.

6. Communication

There are no communications necessary at this point.

7. Recommendations

That the Committee:

1. ***Receives*** *the report.*

2. ***Notes*** *the content of the report.*

3. ***Agrees*** *to recommend to Council to vary the 2009/10 Parks' Capital Works Programme to incorporate the recommended changes highlighted above.*

Report prepared by:	Report approved by:	Report approved by:
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