
Northland Regional Council

Tabled Item

Council Meeting

**Tuesday, 16 April 2013
at 1.00pm**

**ISSUE: Additional Tabled Material for Council Agenda
16 April 2013****ID:** A308571**To:** Council Meeting, 16 April 2013**From:** Chris Taylor, Council Secretary**Date:** 15 April 2013**Summary** The purpose of this report is to place before council tabled material for item:

- 8.3 - Urban Whāngārei Flood Risk Reduction Update – Rust Avenue Bridge Replacement and Kotuku Detention Dam.

The report concludes with the recommendation that the tabled material be received.

Report Type:	Normal operations	<input checked="" type="checkbox"/>	Information	<input type="checkbox"/>	Decision	<input type="checkbox"/>
Purpose:	Infrastructure	<input type="checkbox"/>	Public service	<input type="checkbox"/>	Regulatory function	<input type="checkbox"/>
	Legislative function	<input type="checkbox"/>	Annual/Long Term Plan	<input type="checkbox"/>	Other	<input checked="" type="checkbox"/>
Significance:	High	<input type="checkbox"/>	Moderate	<input type="checkbox"/>	Low	<input checked="" type="checkbox"/>

Report:

It is recommended that the following tabled material be received:

- 8.3 - Urban Whāngārei Flood Risk Reduction Update – Rust Avenue Bridge Replacement and Kotuku Detention Dam.

Recommendation:

That as permitted under section 46A(7) of the Local Government Official Information and Meetings Act 1987, tabled material:

- 8.3 - Urban Whāngārei Flood Risk Reduction Update – Rust Avenue Bridge Replacement and Kotuku Detention Dam

be received.

ISSUE: Urban Whāngārei Flood Risk Reduction Update – Rust Avenue Bridge Replacement and Kotuku Detention Dam

ID: A307793

To: Council Meeting, 16 April 2013

From: Bruce Howse, Land/Rivers Senior Programme Manager

Date: 15 April 2013

Summary The purpose of this report is to provide an update on the replacement of the Rust Avenue bridge and the development of the Kotuku Street detention dam, which are key components in a programme of works to reduce flood risk to urban Whāngārei.

The report concludes with the following recommendations:

That council supports Whāngārei District Council (WDC) in negotiating further funding opportunities with New Zealand Transport Agency (NZTA) for the Rust Avenue bridge replacement project; principally that NZTA reconsider the Northland Regional Council (NRC) \$250,000 funding contribution, with a view to this being confirmed as part of the local funding share contribution.

Report Type:	Normal operations	<input checked="" type="checkbox"/>	Information	<input type="checkbox"/>	Decision	<input type="checkbox"/>
Purpose:	Infrastructure	<input checked="" type="checkbox"/>	Public service	<input type="checkbox"/>	Regulatory function	<input type="checkbox"/>
	Legislative function	<input type="checkbox"/>	Annual/Long Term Plan	<input type="checkbox"/>	Other	<input type="checkbox"/>
Significance:	High	<input type="checkbox"/>	Moderate	<input type="checkbox"/>	Low	<input checked="" type="checkbox"/>

Report:

Introduction

Replacement of the Rust Avenue bridge and the development of the Kotuku Street detention dam are key components in a programme of works to reduce flood risk to urban Whāngārei.

This paper provides an update on these projects.

Rust Avenue bridge replacement

Replacement of Rust Avenue bridge is required to reduce the likelihood of debris blockages and the diversion of flood waters via Rust Avenue into the Whāngārei CBD. The budget for the bridge replacement is \$1,026,500, with construction scheduled for June to October 2013.

NRC requested WDC to apply to NZTA for a subsidy for the bridge replacement, with NRC agreeing to provide \$250,000 of funding towards the replacement, with WDC to provide the balance of local funding share (\$150,335). The subsidy was applied for and obtained.

However, NZTA has now advised that NRC's \$250,000 contribution cannot be considered as part of the local funding share, meaning the 61% NZTA subsidy reduces from \$626,165 to \$473,665. This would result in WDC having to fund a local share of \$302,835, based on an NRC contribution of \$250,000 and NZTA subsidy of \$473,665.

WDC resolved to support the following resolutions from its Infrastructure and Services Committee meeting of 13 March 2013:

'That the Rust Avenue Bridge Replacement Project be added to the 2012/13 Roading Capex programme and funded from savings within the current budgets.

'That the Chief Executive Officer be authorised to negotiate further funding opportunities for this project with NZTA and the Northland Regional Council'

Staff recommend that NRC supports WDC in negotiating further funding opportunities with NZTA for the project; principally that NZTA should consider NRC's \$250,000 funding contribution as part of the local share.

Kotuku Street detention dam

Eleven parcels of WDC reserve land are required to be set aside (either fully or partially) for the public work, and the stopping of the ends of Kotuku Street and Raumanga Valley Road is required.

As part of the project, NRC formally requested WDC to set aside reserve land for the public work and stop the ends of Kotuku Street and Raumanga Valley Roads.

WDC resolved to support the following resolutions at its council meeting of 27 March 2013:

'That construction of the Kotuku Dam be supported subject to Northland Regional Council updating the cost/benefit analysis of the dam using final design parameters;

'That the closing of legal roads to allow the construction of the Kotuku Dam be supported subject to provision for a future road link between Kokutu Street and Raumanga Valley Road be included in the design and;

'That Council approves the setting aside of reserve land as required for another Public Work being a detention dam.'

Cost Benefit

It is noted that a suitability assessment¹ of the proposed dam was undertaken in 2010 to assess feasibility and the cost benefit of flood damage reduction provided to the Whāngārei CBD.

The assessment demonstrated that the detention dam would provide substantial reduction in peak flows. Table 1 demonstrates some of the modelled reductions in peak flow.

¹ Cook Costello. 2010. Raumanga Flood Detention Suitability Assessment. 45p.

Table 1 - Model results of reduction in peak flow downstream of the detention dam

Design storm	Location of flow	Without dam	With dam	% Peak flow reduction
100 year ARI 24 hour	Lower Raumanga Stream (at Bernard Street)	135 m ³ /s	70 m ³ /s	48%
100 year ARI 72 hour	Waiarohia and Raumanga Stream confluence	349 m ³ /s	282 m ³ /s	19%

The suitability assessment indicated that the pay back on the detention dam land acquisition and construction **costs was five years**, based on the reduction in tangible flood damages alone.

Scenario modelling was undertaken by NRC in 2011 and 2012 to further assess the effectiveness of the dam. The results indicate an average reduction in depth in the CBD of between 300 and 500 mm for the 1% AEP climate change flood scenario.

NRC staff note that the fundamental hydraulic benefits and capital cost estimates of the project have not changed substantially from that undertaken in the original cost-benefit analysis.

NRC staff are preparing a report outlining an updated cost benefit analysis of the dam based on final design parameters.

Roads

A road link proposal is currently being developed by the project dam engineer based on advice from WDC roading engineers.

Following WDC confirmation of the road link, a survey of the road link will be made and formalised via registration of a survey plan. This will enable WDC to construct the road at some point in the future should this be required.

Project Risks

A project risk matrix is **attached** that summarises the detention dam project risks.

Legal compliance and significance assessment:

The activities detailed in this report are provided for in the council's 2012-2022 Long Term Plan and as such are in accordance with the council's decision making process and sections 76-82 of the Local Government Act 2002.

With reference to section 79 of the Local Government Act 2002, this matter is considered to be of low significance under council policy as it is a matter of day to day operations provided for in the council's Long Term Plan.

Recommendations:

1. That the report Urban Whāngārei Flood Risk Reduction Update – Rust Avenue Bridge Replacement and Kotuku Detention Dam, from Bruce Howse, Land/Rivers Senior Programme Manager, dated 15 April 2013, be received.
 2. That council supports WDC in negotiating further funding opportunities with NZTA for the Rust Avenue bridge replacement project; principally that NZTA reconsider NRC's \$250,000 funding contribution, with a view to this being confirmed as part of the local funding share contribution.
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Attachment: Kotuku Detention Dam – Project Risk Matrix

Project Item	Issue/Risk	Control	Likelihood	Consequence	Risk
Road stopping	1) WDC declines request to stop Kotuku Street and Raumanga Valley Road, on the basis that this interferes with long term strategy for road link between Raumanga and Maunu. 2) Submissions opposing road closure from adjoining land owners require the matter to be heard and determined by the Environment Court.	1) Requires WDC's buy in to the project, or providing for the rerouting of the road link so that WDC may construct this in the future. 2) We intend to own all land with legal frontage to these stopped roads, with the exception of one parcel which has alternative access from O'Shea Road. We have commenced discussions with this land owner and are awaiting a response.	M	H	H
Land acquisition costs	Increased cost due to objections to registered valuations which are resolved through an agreed process or the land valuation tribunal resulting in a higher level of compensation and impact on project budget.	Robust registered valuations obtained. Valuations to date and revised construction cost estimate confirm that the project is still tracking within budget.	M	M	M
Construction	Ground conditions more variable than that indicated by testing increasing construction cost.	Sufficient testing has reduced uncertainty in ground conditions. 15% contingency provided in construction cost estimates.	L	M	L
Consenting/designation	Resource consent declined.	Robust information has been provided in support of the application. Only a small number of submissions have been received on the applications.	L	H	L
Building consent	Processing of consent imposes unforeseen requirements on the construction which increases cost of construction.	Concurrent peer review process undertaken on hydrology and design. 15% contingency provided in construction cost estimates.	L	M	L
Detailed design	Changes to final design from that indicated in preliminary design.	Engineers have been questioned and see little potential for change other than finalising spillway geometry. Concurrent peer review process undertaken on hydrology and design.	L	M	L
Archaeology	Application for authority to modify or destroy sites is declined by HPT.	We have letter of support from iwi, have undertaken necessary archaeological investigations and have met with HPT and are in the process of lodging an application for authority. An application was previously granted to a lapsed subdivision on the same site.	L	H	L
WDC reserve land	WDC refuses to set aside reserve land for the public work.	We have written to WDC formally requesting provision of the land, to be done in the most efficient manner possible given wider benefits to the district. WDC have confirmed that it is willing to set aside the reserve land for the public work.	L	H	L

H = high, M = medium, L = low