



**TO THE MAYOR AND COUNCILLORS OF THE  
MACKENZIE DISTRICT COUNCIL**

**Membership of the Asset and Services Committee:**

Cr James Leslie (Chairman)  
Claire Barlow (Mayor)  
Cr Noel Jackson  
Cr Evan Williams  
Cr Russell Armstrong  
Cr Murray Cox  
Cr Graham Smith

*Notice is given of the Meeting of the Asset and Services  
Committee to be held on Tuesday 4 February, 2014, following  
the completion of the Finance Committee meeting.*

**VENUE:** Council Chambers, Fairlie.

**BUSINESS:** As per agenda attached

WAYNE BARNETT  
CHIEF EXECUTIVE OFFICER



## ASSET AND SERVICES COMMITTEE

Agenda for Tuesday February 4, 2014

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### APOLOGIES

### DECLARATIONS OF INTEREST

### MINUTES:

Confirm and adopt as the correct record the minutes of the Projects and Strategies Committee Meeting held on Tuesday September 3, 2013, including such parts as were taken with the public excluded.

### REPORTS:

1. Asset Manager's Monthly Report – February, 2014.
2. Alkaline Adjustment of Twizel Water.
3. Cloth Nappy Project.

### PUBLIC EXCLUDED:

Resolve that the public, be excluded from the following part of the proceedings of this meeting namely:

1. Previous minutes of the Projects and Strategies Committee meeting held on Tuesday September 3, 2013, taken in public excluded session.
2. Recycling Processing. Kevin Edgar from Envirowaste to attend.

<b>General subject of each matter to be considered</b>	<b>Reason for passing this resolution in relation to each matter</b>	<b>Ground(s) under section 48(1) for the passing of this resolution</b>
Previous minutes of the Projects and Strategies Committee, September 3, 2013	Commercial sensitivity	48(1)(a)(i)
Recycling Processing	Commercial sensitivity	48(1)(a)(i)

This resolution is made in reliance on Section 48(1)(a)(i) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by Section 6 or Section 7 of that Act, which would be prejudiced by the holding of the whole or the relevant part of the proceedings of the meeting in public are as follows: *Previous minutes of the Projects and Strategies Committee, and Recycling Processing under section 7(2)(b)(ii).*

### RESOLUTION TO RESUME OPEN MEETING

## MACKENZIE DISTRICT COUNCIL

### MINUTES OF A MEETING OF THE PROJECTS AND STRATEGIES COMMITTEE HELD IN THE COUNCIL CHAMBERS, FAIRLIE, ON TUESDAY 3 SEPTEMBER 2013 AT 1:35PM

#### **PRESENT:**

Graham Page (Chairman)  
Claire Barlow (Mayor)  
Crs John Bishop  
Graham Smith  
Evan Williams  
Peter Maxwell  
Annette Money

#### **IN ATTENDANCE:**

Wayne Barnett (Chief Executive Officer)  
Bernie Haar (Asset Manager) left at 2:51pm  
Geoff Horler (Utilities Engineer) left at 2:51pm  
Angie Taylor (Solid Waste Manager) left at 2:01pm  
Garth Nixon (Community Facilities Manager) from 2:51pm  
Keri-Ann Little (Committee Clerk)

#### **I INTRODUCTION:**

Mr Haar, Asset Manager introduced the new Utilities Engineer to replace the recently vacated position. Welcome Geoff Horler, Geoff has been working for Hurunui District Council for eleven years and brings a lot of experience in maintaining and operating water schemes in particular.

#### **II APOLOGY:**

There were no apologies.

#### **III DECLARATIONS OF INTEREST:**

There were no Declarations of Interest.

#### **IV MINUTES:**

Resolved that the Minutes of the meeting of the Projects and Strategies Committee held on 30 July 2013, including such parts as were taken publicly excluded.

**Annette Money/ Claire Barlow**

Matters Arising From Previous Minutes:

Mr Haar said the Tekapo UV Plant is now commissioned and running, held was a training day with Filtech last week with David Hilliard which operational maintenance and compliance requirements.

**Contract 1213 Utilities Contract:**

Mr Haar said the contract with Whitestone has performance requirements to encourage them to move to fill electronic reporting within 12 months. Whitestone had agreed to that proposal and staff would be meeting with them shortly to plan a process to achieve compliance.

**V REMOVAL OF AGENDA ITEM/ LATE ITEM:**

The Chairman said agenda item in public excluded Recycling Processing and Visitor have been removed at the request of Envirowaste Services (ESL).

The agenda item will be replaced by the late agenda item Proposed New Twizel Public Toilets also to be tabled in Pubic Excluded. *Appendix A* of this record.

Resolved: that late item Proposed New Twizel Pubic Toilets be accepted.

**Claire Barlow/ Graham Smith**

**VI REPORTS:**

1. ASSET MANAGERS MONTHLY REPORT – JULY 2013:

Resolved: that the report be received.

**Peter Maxwell/ Graham Smith**

This report from the Asset Manager referred to Asset Management progress report for July 2013 for Roding, Essential Services and Solid Waste.

Ms Taylor, Solid Waste Manager spoke to the Solid Waste report.

**VI REPORTS:**

2. SOLID WASTE BYLAW:

Resolved: that the report be received.

**Peter Maxwell/ Annette Money**

This report from the Solid Waste Manager was to seek Council's adoption of the attached draft Mackenzie District Solid Waste Bylaw 2013. *Appendix B* of this record.

Resolved: that the draft Mackenzie District Solid Waste Bylaw 2013 is appropriate for the purpose and be subjected to the Special Consultative Procedures as required by Section 83 of the Local Government Act 2002.

**Claire Barlow/ Annette Money**

## VI REPORTS CONTINUED:

### 1. ASSET MANAGERS MONTHLY REPORT – JULY 2013:

Mr Haar spoke to the asset report.

Mr Haar spoke to the Roading section of the report referring to the Roading Manager now being on Maternity Leave.

Mr Bishop asked for an update on Whitestone improvements in Twizel Market Place Car Park upgrade.

Mr Haar said Whitestone have provided to the asset department a work programme which is all itemised including a start date and end date. Mr Haar said he estimates the upgrade will be completed before Labour Weekend.

Mr Haar said in regards to the Twizel Oxidation Ponds he has had discussions with Council's consulting engineers, CH2M Beca Limited, to confirm the area of land required adjacent to oxidation ponds for the proposed effluent disposal system. An in ground disposal system comprising a series of perforated pipes is being investigated to help overcome potential freezing of the effluent that currently occurs in in the disposal trench, said Mr Haar. Some Hydraulic Conductivity tests will be carried over the next few weeks to determine accurately the soakage of the subsoils which will define the land area required, not only for the current demand but also future proof the facility. This will require the excavation of test pits and then these are filled with treated effluent to determine the rate of soakage into the sub soils.

The CEO said the water supply will be discussed in the workshop following.

Cr Page asked what was the next step with the Twizel water supply.

Mr Haar said and the CEO met with Opus to discuss the way forward with all the water supply projects. Opus International Consultants have been asked to consider whether or not deep wells were still in contention. In addition, the source options to be considered for Twizel were:

- Upgrade the existing three well and rebuild the existing treatment facility.
- New better positioned, shallow bores adjacent to Simons Hill homestead.

Opus are to provide a report on all the options along with costings to allow the Council to determine the most appropriate water supply solution for Twizel.

Mr Haar advised that the better positioned shallow wells adjacent to Simon Cameron's property would provide quality water at the flow we require and then pump up to the reservoir the hill where the treated water would then supply Twizel by gravity. We have engaged Opus to complete the work as John O'Connor did previously do a lot of the work and with his retirement we don't have the resource to push this work along.

What is the timeframe asked Cr Bishop.

Mr Haar said if an offer and fee structure can be agreed on they will have it to us in 6 weeks.

Cr Smith asked why we haven't gone back to the original plan; if we couldn't find a new water source we were going to upgrade the old source.

The CEO said we have investigated all water sources and are awaiting for a report back from Opus having a look at all the wells and then assess options from there. The CEO said he has asked Opus for a clear plan that we can put to Council. A key point of this is that we aren't going to drill anymore wells. Opus will come back with firm options and certainty moving forward.

Cr Bishop said ratepayers have been rated for the new water supply in Twizel and are not receiving it. People in Twizel are getting frustrated.

Cr Money asked why they were looking at Simon Cameron's again after Meridian would not allow Council to use that site.

Mr Haar said this is a different spot not near the canal but near Simon Cameron's home.

The CEO said we have previously in the past consulted too widely; we need to put a ring around what we know and put it in a concise plan and gain a resolution around that.

The Mayor recommends that in the interim while we wait for the OPUS report a media release to Twizel community is undertaken to explain what Council are currently carrying out and where we are at.

Resolved: Executive staff put the appropriate pressure on Opus staff to enquire a report so this current Council can make a decision on the Twizel Water Supply.

**Graeme Page/ Graham Smith**

Cr Smith said Albury Residents that use Wilfred Road Ford would like the ford upgraded to four wheel drive use.

Resolved: Wilfred Road ford will be maintained to a four wheel drive standard.

**Graeme Page/ Claire Barlow**

## **VI PUBLIC EXCLUDED:**

Resolved that the public be excluded from the following part of the proceedings of this meeting namely:

1. Proposed New Twizel Public Toilets

<b>Reason for passing General subject of each matter to be considered</b>	<b>Ground(s) under this resolution in relation to each matter</b>	<b>Section 48(1) for the passing of this resolution</b>
Proposed New Twizel Public Toilets	Commercial Sensitivity	48(1)(a)(i)

This resolution is made in reliance on Section 48(1)(a)(i) of the Local Government Official Information and Meetings Act 1987 and the particular interest or interests protected by Section 6 or Section 7 of that Act, which would be prejudiced by the holding of the whole or the relevant part of the proceedings of the meeting in public are as follows: *Proposed New Twizel Public Toilets* Section 7(2)(b)(ii)

**Graham Smith/ Claire Barlow**

The Project and Strategies Committee continued in open meeting.

**CONFIRMATION OF RESOLUTION TAKEN WITH THE PUBLIC EXCLUDED**

Resolved that the following resolution taken with the Public Excluded be confirmed:

**Proposed New Twizel Public Toilets:**

Resolved:

1. That the new Twizel Public Toilets be put out to public tender.

**Evan Williams/ Annette Money**

**THERE BEING NO FURTHER BUSINESS THE  
CHAIRMAN DECLARED THE MEETING CLOSED AT 3:06 PM**

**CHAIRMAN:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

## **MACKENZIE DISTRICT COUNCIL**

**REPORT TO:** ASSETS AND SERVICES COMMITTEE  
**FROM:** ASSET MANAGER  
**SUBJECT:** ASSET MANAGER'S MONTHLY REPORT  
**MEETING DATE:** 4<sup>th</sup> February 2014  
**REF:** WAS 1/1  
**ENDORSED BY:** CHIEF EXECUTIVE OFFICER

### **REASON FOR REPORT**

To update the Assets and Services Committee on the progress on various projects and also the normal operation of the department for the past month.

Also to confirm the preferred options from the Tekapo and Twizel Community Boards to fully utilise their respective Roding Reserves.

### **RECOMMENDATION:**

1. That the report be received.
2. That the preferred option to utilise the Roding Reserve for Tekapo Township be the continuation of the Lakeside Drive Safety Footpath.
3. That the preferred option to utilise the Roding Reserve for Twizel Township be the resurfacing of various footpaths in the worst condition in Twizel.

**BERNIE HAAR**  
**ASSET MANAGER**

**WAYNE BARNETT**  
**CHIEF EXECUTIVE OFFICER**



## ASSET MANAGEMENT

### PROJECT PROGRESS

#### Sewerage

##### **Twizel Land Purchase**

Hydraulic Conductivity tests were undertaken during the last quarter of 2013 to determine accurately the soakage of the subsoils which defined the land area required, not only for the current demand but also future proof the facility.

The test results confirmed that 2.3ha would be required to dispose of the expected 1800m<sup>3</sup> /day using the in ground piped disposal system.

Therefore the rapid infiltration system as proposed will fit within the 150m odour setback. This makes the total area required for the upgrade to be 21.52 ha(150m odour buffer), with a further 25.38 ha to be protected by covenant and no build zone to extend the odour buffer out to 300m.

The CEO and myself will be meeting with the land owner shortly to continue the negotiations to acquire the required land.

##### **Projects - Water Supply Programme**

##### **Fairlie**

As reported in August the observations of the excavation upstream of the current water source are looking promising and will need further work to accurately determine the turbidity. The proposals all require installation of an in ground screen in the existing hole and backfill, then:

- Run a large pipe down to the turbidimeter (at a power source)
- Run a large pipe clear of the screened hole and instrument flow only to the turbidimeter
- Run a small diameter pipe (say 20-25 mm) all the way from the screened hole to the turbidimeter.
- Another alternative is to take manual samples from the source each time there is a fresh in the Opihi River.

It was agreed that a report on the advantages/disadvantages and costs for the turbidity monitoring options would be prepared for consideration. The summary of that report are shown in the below.

<b>Option</b>	<b>Advantages</b>	<b>Disadvantages</b>	<b>Cost</b>
Option 1 - Temporary Pipeline	<ul style="list-style-type: none"> <li>• No permanent structure required</li> <li>• Fast Construction</li> <li>• No detailed design required for pipeline</li> </ul>	The temporary sampling pipe is only useable for the monitoring duration	\$46,420 + GST

Option 2 — Partially Permanent Pipeline	<ul style="list-style-type: none"> <li>• Permanent pipeline extension would be easily extended after the source confirmation</li> </ul>	<ul style="list-style-type: none"> <li>• Highest Cost</li> <li>• The expensive permanent pipeline becomes useless if the water quality of source is determined unsuitable</li> <li>• Detailed design required for the pipeline</li> </ul>	\$71,995 + GST
Option 3 — Turbidimeter On Site	<ul style="list-style-type: none"> <li>• No permanent structure required</li> <li>• Less data error</li> <li>• Accuracy of data collection</li> </ul>	<ul style="list-style-type: none"> <li>• Solar based energy required.</li> </ul>	\$48,455 + GST
Option 4 — Sampling and laboratory testing	<ul style="list-style-type: none"> <li>• No permanent structure required</li> <li>• Lowest Cost</li> </ul>	<ul style="list-style-type: none"> <li>• Hard to manage the correct time for sampling and there is a risk that some data would be missed</li> </ul>	\$30,277.50 + GST

Clearly Option 1 is the desired option however I am concerned about the cost of this option as there is very little residual value in the physical works once the testing regime is complete.

Opus and ourselves are investigating ways to reduce the cost of this option and once completed we will discuss the full range of options with the Fairlie Community Board and Council.

We need to rule this source in or out before proceeding with test pumping the alternate source by the treatment plant.

#### **Twizel- Proposed upgrade to meet DWS**

Now that Council has made the decision to upgrade the existing water supply in Twizel to meet the Drinking Water Standards and any future demand we have firm direction as to the way forward.

The Utilities Engineer and I met with Opus International Consultants to map out what is required to complete the project and assigned tasks.

The table below sets out the work and decisions required.

Item	Outcome
<p><b>1) Replacement Twizel Wellfield Pump</b> This should be a Goulds, Type 11- CNLC-1</p>	<p>The third well pump failed in 2012 and it was decided not to replace it until Council had confirmed to stay with the existing source or change location. Once Council decided to upgrade the existing source, the specifications of the well pumps were confirmed and the replacement third pump was ordered as the risk to the Twizel water supply was too great as of the two pumps in service, one is really old and has done a lot of hours. The new pump arrived before Xmas . Will be installed when the well has been assessed.</p>
<p><b>2) Twizel Water Alkalinity and pH Adjustment</b> The Asbestos Cement water pipe network is deteriorating from the inside with large scale replacement required from about 2020. As part of the water supply improvements it was appropriate to consider whether pH adjustment would extend the life of the AC pipe</p>	<p>Report has been prepared and recommended that MDC to not adjust the alkalinity and pH, and to continue to advise consumers of the plumbosolvency issue.</p>
<p><b>3) Twizel Reservoir Liner Replacement</b> The current liner is showing areas of deterioration. With the reservoir it was necessary to consider the life of the existing liner and what technically would be required to replace it, Is leakage through the embankment from the damaged areas of liner visible? If so, could a temporary repair be made? What is anticipated remaining life of the liner? If liner replacement is to proceed, when would it be programmed?</p>	<p>No visible leakage from damaged areas of liner. If leakage became a problem before liner replacement was scheduled then the water level in the reservoir could be lowered (damage at upper level). No urgent replacement is required. A report to be prepared covering life remaining, replacement material options, cover options and advantages/disadvantages, replacement procedure issues, and replacement timing.  The report will be put to the Assets and Services Committee for consideration when available.</p>

<p><b>4) Twizel water - Bench scale testing of 1um cartridges for turbidity removal</b></p> <p>As mentioned in the Water Supply Options report, Cartridge filtration is the most economic form of filtration for achieving log credits and has the advantage of not requiring the use of coagulants (with the resulting problem of waste disposal). However, cartridge filtration requires clean source water. Testing of 1um cartridges will be needed to gain information on the life of the cartridges and also whether they will remove sufficient small sized turbidity. A test set-up will be installed in the pump room with the sample taken downstream of the 25 um mesh filter.</p>	<p>Opus to provide details on the design and testing/ monitoring procedures for the 1um cartridge turbidity removal testing, and testing duration. This is No.1 priority for the Twizel water supply work.</p>
<p><b>5) Twizel water — Possible alteration of Screens (Log credit reduction)</b></p> <p>The three screens per well have been positioned to correspond with areas giving the highest flow rates. The screens are located at depths 5.2-7.0m, 9.5-11.3m, and 13.7-15.5m. Pump intake was positioned immediately above the lowest screen so that water would flow over the motor casing to effect cooling. Video of the No. 1 well shows maximum blockage of the screens at the lowest screen. Moderate blockage of top screen, least blockage at centre screen. It is not known if screening below 10m would allow sufficient flow to be extracted from the wells. Carry out camera inspection of No. 2 Well</p>	<p>Geoff Horler to organise a camera inspection of the No. 2 well early this year. Other issues such as well field valves, piping, flooding, etc to be considered following a joint site visit. Opus then to report on well screens condition and other issues.</p>
<p><b>6) Twizel Water PHRMP</b></p> <p>Will be delayed until better idea of forward programme is known. Approved PHRMP must be in place by 1 July 2014. Therefore must be submitted to DWA no later than mid-May 2014.</p>	<p>Opus to keep an eye on timing and involve Jim Graham at the appropriate time.</p>

<p><b>7) Twizel - Policy on Fire fighting, Domestic supplies, and (reserves) Irrigation</b></p> <p><b><u>Fire fighting</u></b> Confirm that FW2 (PAS 4509:2008) classification required for Twizel with on-site storage in restricted supply areas (30 m3 tanks with 20 m3 for firefighting). FW3 to be allowed for Twizel CBD area.</p> <p><b><u>Domestic Supplies</u></b> Water supply "on-demand" and "restricted supply" areas as shown in MDC Activity Plan (2011) Figure 3.5.6a. Restricted supply-1 unit per property per day (1,820 litres).</p> <p><b><u>(Reserves) Irrigation</u></b> Will decision on irrigation supplies be made before modelling undertaken, or will modelling be used to aid decision?</p>	<p>Confirmed.</p> <p>OK.</p> <p>Keep irrigation in the model — can use as a future demand volume.</p>
<p><b>8) Twizel Information Reticulation Modelling</b></p> <p>What has changed since 2009? New connections Updated water records Any changes to the operating of the secondary (booster) pumps Reserve irrigation volumes?</p>	

## **ROADING**

### **Roading**

#### **TOWNSHIP ROADING RESERVES**

As part of the 2012-22 Long term plan the Council confirmed a district wide roading budget. At the time the three townships of Fairlie, Tekapo and Twizel had collected funds which were kept in a Township Roothing Reserve, for their specific use. When confirming the district wide roading budget, Council made a policy that these reserve funds must be spent by their respective townships by the end of 2013/14 financial year (this June) or they will be absorbed into the district wide roading reserve.

Fairlie has a roading reserve fund of \$105,897.00.

Tekapo has a roading reserve fund of \$31,224.00.

Twizel has a roading reserve fund of \$48,556.

#### **Fairlie Community Board**

There is an item on the Fairlie Community Board agenda for their consideration.

## Tekapo Community Board

The Tekapo Community Board has indicated that their preferred project to extinguish these funds is a continuation of the Lakeside Drive Safety Footpath. This is to be stage 2 of a worthwhile project to provide a concrete footpath from the Tekapo Township to Tekapo Springs.

As the report to decide on the use of these funds was not available for the agenda for consideration they were unable to make a formal recommendation so the purpose of this section of the report is to confirm their decision to allow the work to be got underway.

## Twizel Community Board

The Twizel Community Board considered a report at their meeting on the 28<sup>th</sup> January to determine their preferred project. They have recommended that the funds are used to resurface more of the footpaths in the worst condition to make inroads in the back log. The list is:

Street	Start	End	Side	Length	Age	Condition (1=Excellent 5=Very Poor)
Fraser	Mackenzie (s)	Mackenzie (n)	RHS	85	27	5
Fraser	Mackenzie (s)	Mackenzie (n)	LHS	85	6	5
Glen Cairn	off Mackenzie	Glen Cairn	LHS	910	29	4
Glen Cairn	off Mackenzie	Glen Cairn	RHS	650	29	4
Cass	Mackenzie (e)	Mackenzie (w)	LHS	95	6	4
Cass	Mackenzie (e)	Mackenzie (w)	RHS	95	6	4
Omahau	off Mackenzie	off Mackenzie	LHS	560	19	3
Omahau	inside loop		RHS	90	21	3

As the report to decide on the use of these funds was not available for the agenda for consideration they were unable to make a formal recommendation so the purpose of this section of the report is to confirm their decision to allow the work to be got underway.

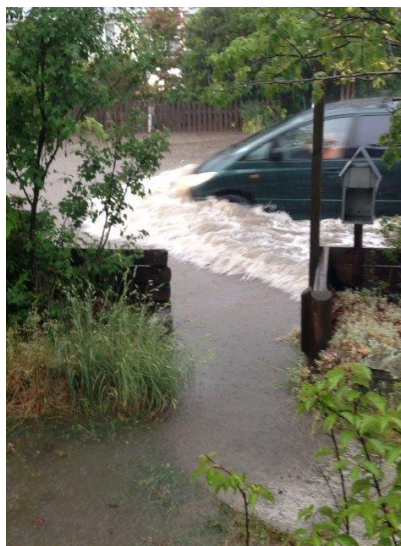
## Environmental Maintenance

After a large snowfall event in June 2013 we applied to the New Zealand Transport Agency (NZTA) for additional funding for the associated clean up after the snowfall event, strong wind event and the subsequent flooding from both rapid snow melt and heavy rainfalls. In November we were notified that we had successfully obtained \$600,000 in additional fund for the clean up which is funded by central government at 74%. The works involved are, initial emergency response including snow clearing and gritting, replacement of gravels lost via flooding/snow melt or rebuilding due to frost heave (total approximately 6000m<sup>3</sup>), underpinning of two bridges, river training works under many of the districts bridges, concrete nib walls on high flow culverts, replacement of a number of washed out culverts.

In Twizel on the 8th of December a high intensity rainfall event, of 42mm in one hour, occurred. Due to the nature of this event our storm-water systems were not able to cope, meaning much of the township streets were flooded. Thankfully there was only minor damage sustained to the roading network, the biggest issue was debris from nearby properties congregating in the road reserve, this was soon tidied up by the sucker truck.



Mackenzie Drive



24 Jollie Road



19 Glenbrook Crescent

## **Maintenance**

Normal maintenance has continued, with a stroke of luck in a number of damp days meaning our gravel roads are retaining a good moisture level so dust nuisance is at a low the number of corrugations/potholes are also low. Reseals will begin sometime in the next few weeks, with the following roads being completed.

ROAD NAME	START	END	LENGTH
COMMERCIAL ROAD	415	479	64
LILYBANK ROAD	10	77	77
LILYBANK ROAD	77	2007	1930
MARKET PLACE EAST (inc carpark)	0	43	43
POLLOCK PLACE	0	198	198
RANKIN RISE	0	185	185
SIBBALD LANE	0	123	123
WARATAH ROAD	7547	8242	695

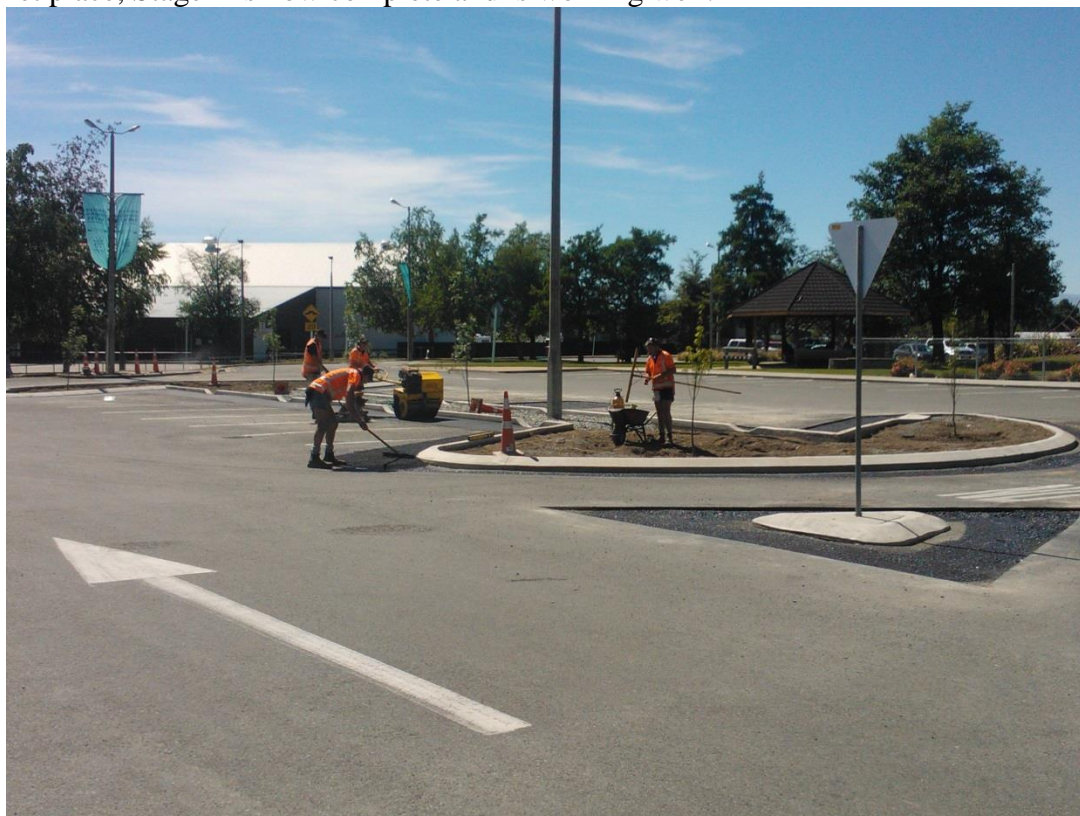
CLAYTON ROAD	4538	9318	4780
CLAYTON ROAD	9318	11460	2142
MONUMENT ROAD	0	40	40
TRENTHAM ROAD	4975	5010	35
TRENTHAM ROAD JUNCTION	0	48	48
Hamilton Dr (from Murray Place to last year reseal)	0	324	324
ALEXANDRA TERRACE	10	100	90
BANK STREET	0	203	203
D'ARCHIAC DRIVE	25	145	120
D'ARCHIAC DRIVE	166	307	141
WALTER BLACK PLACE	12	64	52
ANDREW DON DRIVE	0	11	11
ANDREW DON DRIVE	241	291	50
UNWIN PLACE	CUL DE SAC HEAD		
GREENFIELD PLACE	CUL DE SAC HEAD		
HALDON ROAD	4402	4600	198
HALDON ROAD	5685	6775	1090
HALDON ROAD	7890	8065	175
HALDON ROAD	11432	11614	182

We have had a number of failures on the sealed section on Hamilton Road. The best fix for these areas is to provide a 200mm overlay and reseal. At the time of writing this report we are obtaining a second price from another contractor. Works will be completed this financial year to protect the road from further damage from the heavy vehicle use in this area. The landowners in the area have been written to, to advise of the road faults. We have applied a cheap/quick fix to keep the road operational at 100km/hr but the repairs are by no means made to last and the ride over these areas is rougher than normally acceptable. At the end of seal on Hamilton Road we have installed a trial section of Low Dust producing material, so far it is proving to be a good solution and the residents that were previously concerned with the level of dust generated by traffic are now much happier. Unfortunately the location of this material (Albury) can mean that cartage costs may affect the affordability of application in some areas.



## **Minor Improvements**

Market place, Stage 2 is now complete and is working well.



## **Projects for 2013/14**

This financial year (2013/14) it is likely that the three bridges scheduled for replacement in the Long Term Plan (Long Gully, Pioneer Park and Oldfields Road) will be replaced and as such are expected to utilise the majority of the Minor Improvements budget. As a consequence it is unlikely that any further projects will be able to be included. However, the Council did confirm (as recommended by the Roading Sub-Committee, disbanded at the end of last term of Council) the following “Priority 2” projects:

- Lakeside Drive safety footpath, Lake Tekapo
- Talbot Road, Fairlie – Sealing of gravel berm
- Lilybank Road – sealed linkages
- Seal-widening on Clayton Road.
- Traffic improvements on Mackenzie Drive, Twizel.

If it became obvious that there would be some funds remaining after tenders were received we would look to make a start on this approved list.

## **Funding Assistance Rate Review (FAR Review)**

Our Roading Budget is partially funded by the New Zealand Transport Agency, currently to the tune of 53% for Maintenance Operations and Renewals, 63% for Minor Improvements. Prior approved emergency funding is calculated using a formula based on Council’s ability to pay and the total cost of the emergency event.

## Current Roading Budgets under the 2012-15 National Land Transport Programme (NLTP);

	2012/13	2013/14	2014/15	Average NZTA Subsidy Per annum
Operations and Maintenance	\$1,211,653	\$1,243,003	\$1,219,344	\$649,073
Renewals	\$1,214,000	\$1,214,000	\$1,214,000	\$643,420
Minor Improvements	\$250,000	\$250,000	\$250,000	\$157,500

A discussion document was released early last year and Mackenzie District Council submitted on the options given in May 2013. There has now been a further document released in December 2013 the "Options Discussion Document". Submissions for this Options Discussions Document close on the 3rd March 2014. To give this the importance it deserves we are utilising a consultant, in conjunction with a number of other local councils to produce a submission.

The crux of it is, NZTA are considering flat lining the assistance rates, if this occurs MDC will receive a drop in funding from the current base FAR 53% to somewhere between 52% and 49% flat, this rate will be applied to Minor Improvements works also, which is currently funded 10% higher than the base FAR. What this will mean for the ratepayers is either a drop in level of service will be required to keep the rate line the same, or in increase in rates to keep the same level of service (sum work funded non-subsidised)

Activities	Total Spend Per-annum	Increased cost to Rate Payers to maintain the existing LoS if the FAR is reduced to 52%	Increased cost to Rate Payers to maintain the existing LoS if the FAR is reduced to 49%
Maintenance/Operation/Renewals	\$2,438,666.67	\$ 24,386.67	\$ 97,546.67
Minor Improvements	\$ 250,000.00	\$ 27,500.00	\$ 35,000.00
Total	\$2,688,666.67	\$ 51,886.67	\$ 132,546.67

### **NZTA- One Network Classification**

NZTA has just completed the first element of the One Network Road Classification project, with a further two to be completed.

The first is classifying roads into categories based on their function in the national network and a new document has been released to assist with this process.

The second element is the Customer Levels of Service (CLoS), which define what the fit for purpose outcomes are for each category in terms of mobility, safety, accessibility and amenity.

The third element is the development of the performance measures and targets, which will effectively determine how the categories and customer levels of service translate into specific maintenance, operational and investment decisions. NZTA has started this work and will complete it during 2014. Hopefully RCAs will get an opportunity to submit on these

### ***What it means for Mackenzie District***

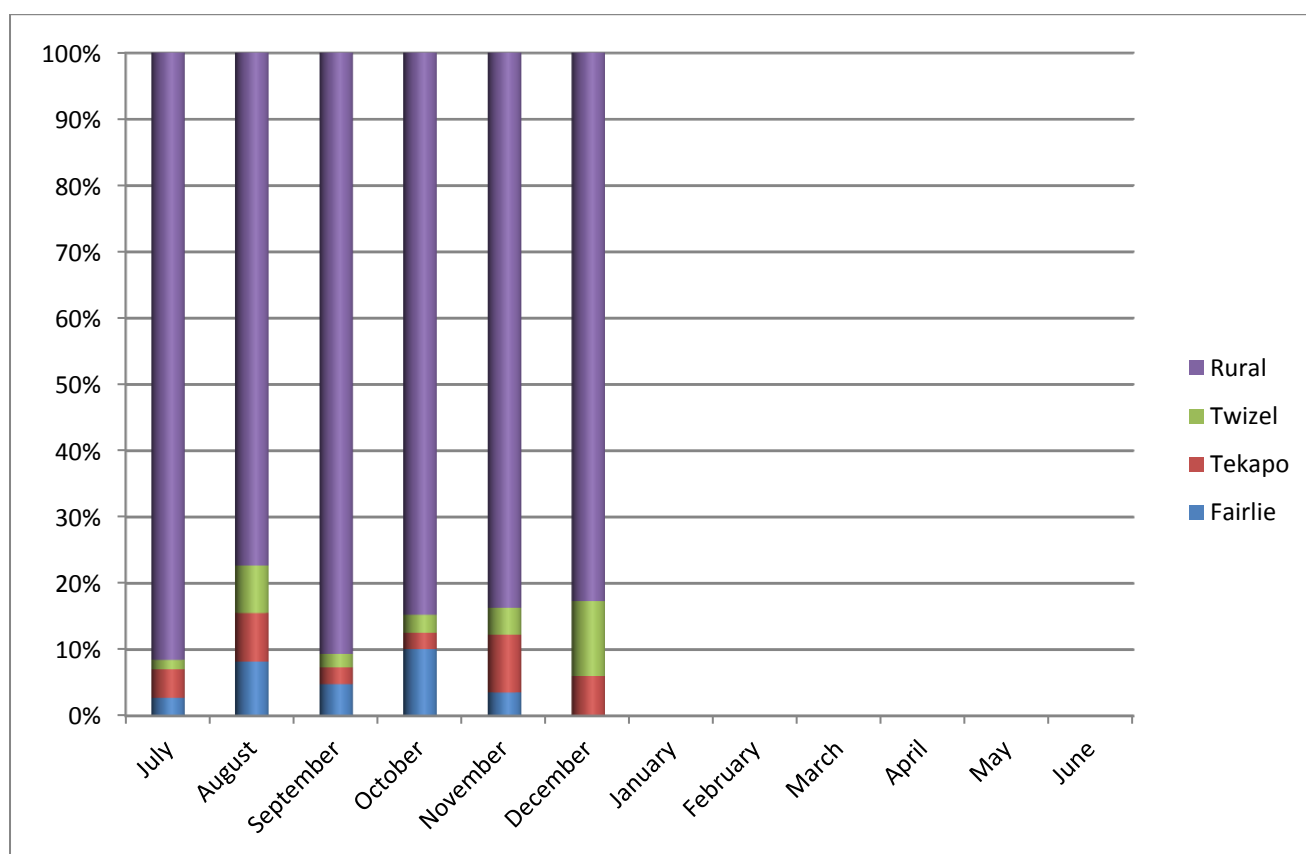
All roads will be assessed nationally against the guidelines. Due to the low traffic volumes in the Mackenzie District, under the new classification guideline would mean that most roads would be classified as “Access Road – Low Volume” which is the lowest classification, with some of our busier roads potentially making it out of the bottom “Access Road – Low Volume” classification. On the release of the performance measures and targets, we will have to assess how our specific maintenance, operational and investment decisions line up with the national measures and potentially adjust ours accordingly.

There are some indications that the level of investment will vary depending on the classification of the roads. I have not produced the document but can provide copies of the One Network Guidelines if any Councillor wants them.

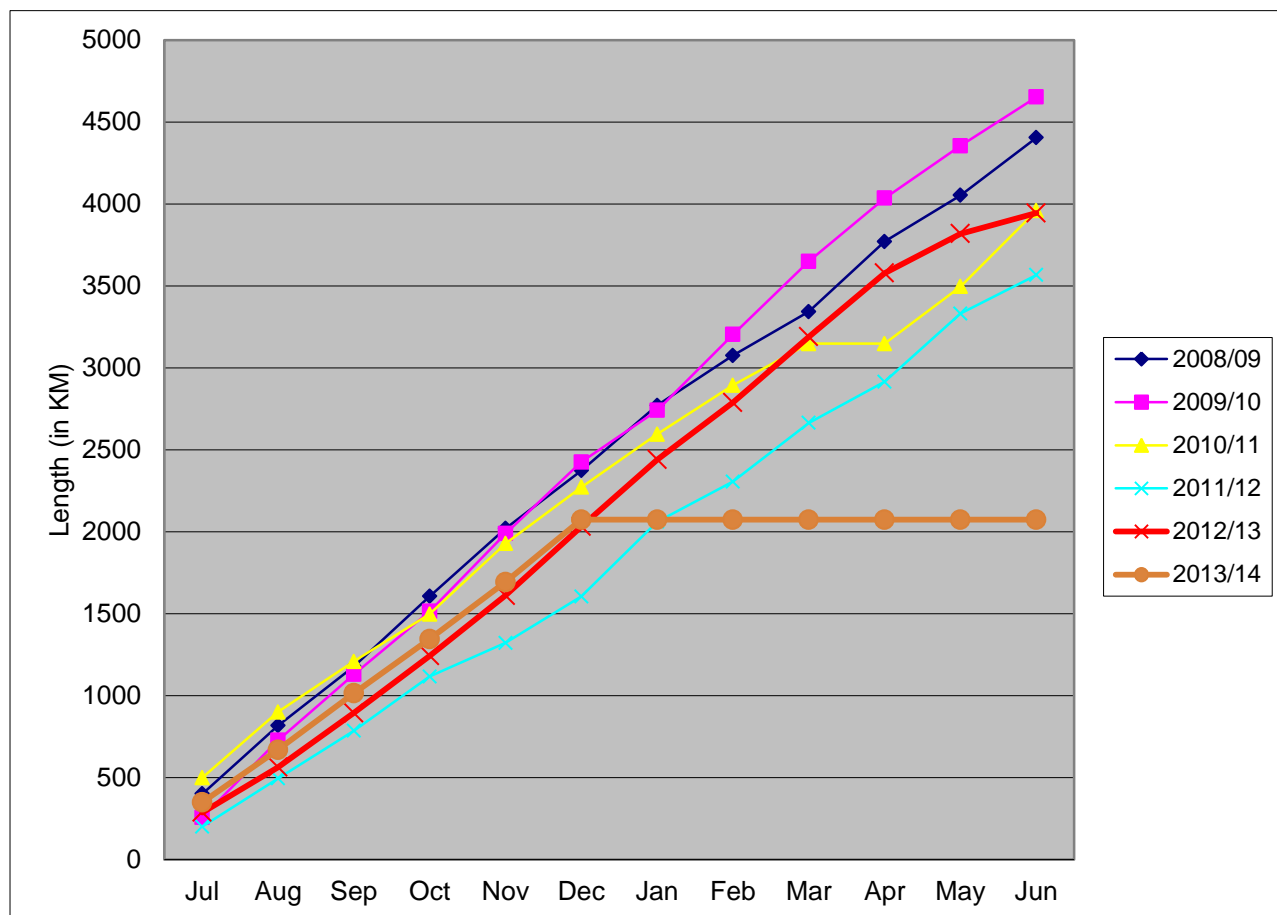
### **Manuka Terrace**

The first 2km of Manuka Terrace was rebuilt and sealed in December 2013. There are still some minor works to complete, and a reseal to complete next financial year.

### **Amaglamated Roading Budgets Graph Showing Percentage Share**



## Unsealed Road Grading (Cumulative)



## ESSENTIAL SERVICES

### **FAIRLIE**

#### **FAIRLIE**

##### Water:

Operation and Maintenance expenditure is \$38,253 over budget YTD. There have been no major issues with the Fairlie water. Yet there have been a number of incidents that have bumped up the budget. Two breaks in the weekend one on Kimbell line on SH8 (AC split) and Gray St RC - joint leaking. Also investigating a problem on Nixon Rd line which took a number of days to find and rectify.

Capex budget used YTD \$99,751 some of this is for work done last year. There is \$35,249 remaining. Toby and lateral line upgrade in Gall St account for the rest. There is a need to install a flow meter at the beginning of the reticulation to comply with ECAN flow monitoring which should be done this year.

##### Wastewater:

Operations and maintenance expenditure is \$12,552 which is under budget YTD. The aerator has had some repair work done on it. The Camp ground pump has been changed and serviced.

A survey of the sludge depth of the primary pond at the Fairlie Treatment Plant was carried out at the end of September 2013. The results of the survey it is estimated that there is 4,500 m<sup>3</sup> of sludge in the primary pond which equates to 190 Tonnes of dry solids.

The Fairlie pond appears to be the most critical and needs to be watched as they are closest to neighbours (Hislops).

We will need to keep a closer watch on the health of the ponds to minimise odours and probably carry out the sludge survey every two years.

If odours cannot be detected close to the nearest residences along Talbot road downwind in light wind drift conditions, then Council could have some time before problems caused by sludge deposits will occur. Allowance will need to be made in the LTP for the sludge removal.

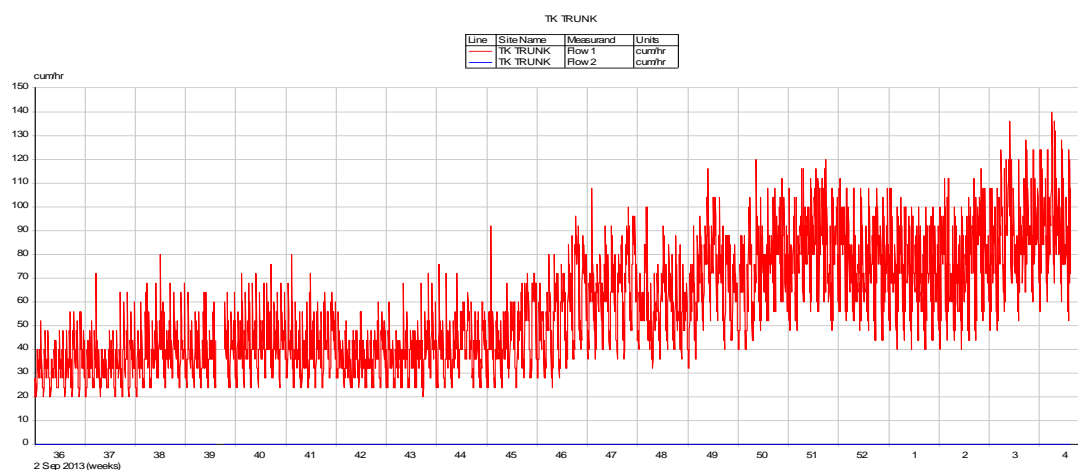
#### Stormwater:

Operations and maintenance expenditure is \$911 under budget YTD.

### TEKAPO

#### Water:

Operation and maintenance expenditure is \$33,152 over budget YTD. There have been a few issues with water leaks and finding them in Tekapo time spent on this has pushed out expenditure. New valve was installed in Roto Pl to allow the isolation of this water main and service a leaking connection. Hard standing area around the UV shed was tidied up and just needs fenced to complete the project.



#### Weekly water usage

#### Wastewater:

Operations and maintenance expenditure is \$20,478 under budget YTD. Tekapo camp pumps station has given some problems with the control floats. One sewer main blockage in the last few months.

A survey of the sludge depth of the primary pond at the Tekapo Treatment Plant was carried out at the end of September 2013. The results of the survey it is estimated that there is 4140 m<sup>3</sup> of sludge in the primary pond which equates to 95 Tonnes of dry solids

A survey of the sludge depth of the primary pond at the Tekapo Treatment Plant has been carried out at the end of September 2013. The results of the survey it is estimated that there is 4140 m<sup>3</sup> of sludge in the primary pond which equates to 95 Tonnes of dry solids

We will need to keep a closer watch on the health of the ponds to minimise odours and probably carry out the sludge depth survey every two years. Allowance may need to be made in the next LTP for the sludge removal

### Stormwater:

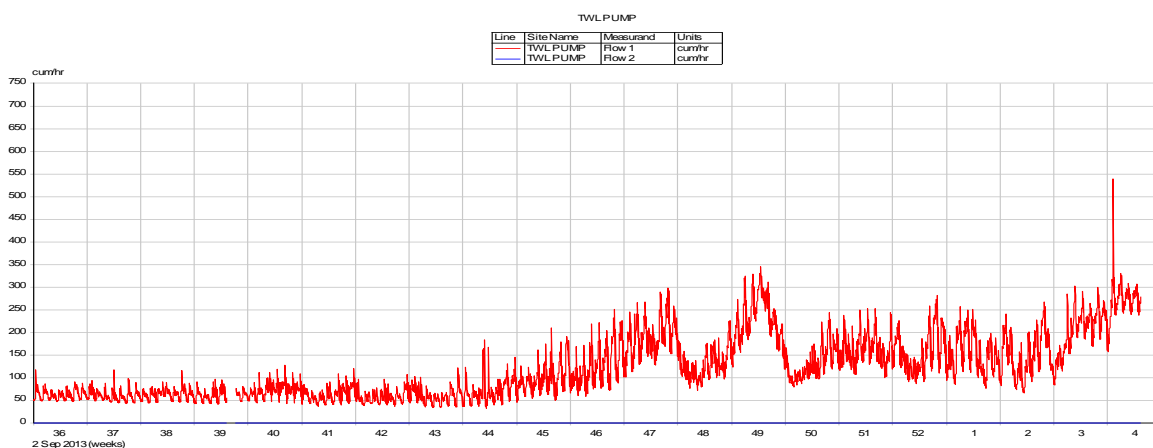
Operations and maintenance expenditure is \$1,844 under budget YTD. The spoils Murray Park drain was cleared to ensure storm water did not back up into The Residence.

## **TWIZEL**

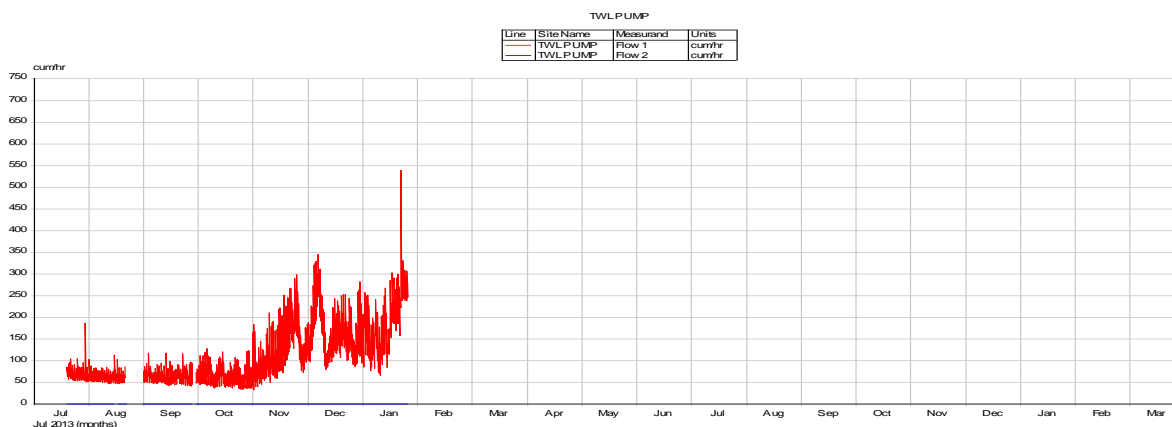
### Water:

Operation and maintenance expenditure is \$31,547 under budget YTD. There have been a few issues with the pumps and VSD at the pumping shed since August the aim is to keep them running until they are placed in the upgrade.

Capex budget for service connection replacement YTD \$34,647 remaining budget is \$5353. Since August to December of last year there were 16 service connection upgrades. From now on to keep the cost down if the toby cannot be moved to the boundary the repair will made in situ with the galvanised bend only removed if there is a significant drop in pressure and flow on the property.



### Weekly water usage



### Monthly water usage

### Wastewater:

Operations and maintenance expenditure is \$14,610 on budget YTD. There have been a number of sewer main blockages in Twizel.

A survey of the sludge depth of the primary pond at Twizel Treatment Plant was carried out at the end of September 2013. The results of the survey it is estimated that there is 9,750 m<sup>3</sup> of sludge in the primary pond which equates to 390 Tonnes of dry solids

We will need to keep a closer watch on the health of the ponds to minimise odours and probably carry out the sludge depth survey every two years.

If odours cannot be detected close to the nearest residences downwind in light wind conduction, then Council could have some time before problems caused by sludge deposits will occur. Allowance will need to be made in the next LTP for the sludge removal.

Stormwater:

Operations and maintenance expenditure is \$1033 under budget used YTD.

**Asset Valuation:**

It is once again time to revalue our infrastructure assets. These are on a three yearly cycle so that the appropriate level of depreciation can be funded. Staff have been reviewing the draft valuations to ensure there is no double up of assets being valued, that remaining life of the asset is appropriate and cost of replacing that asset is what we can expect. Audit NZ requires this work to be completed independently. Values have increased due to vested assets over the last three years, some increased construction costs and in the case of water supplies, tobies being included in the valuation for the first time.

**SOLID WASTE**

**Christmas period**

There was a large volume of refuse, general recycling and glass from kerbside collection over the Christmas period. The truck reached capacity on seven different collection days during this time and had to stop part way through the collection to empty the load before completing the run. The extra refuse collection in Tekapo following New Year's proved popular with the majority of properties taking advantage of this extra service.

The three Resource Recovery Parks were busy over the Christmas period, however Envirowaste (ESL) reported that the operation of the parks ran smoothly with a low volume of rubbish being left at the gates.

**Recycling projects**

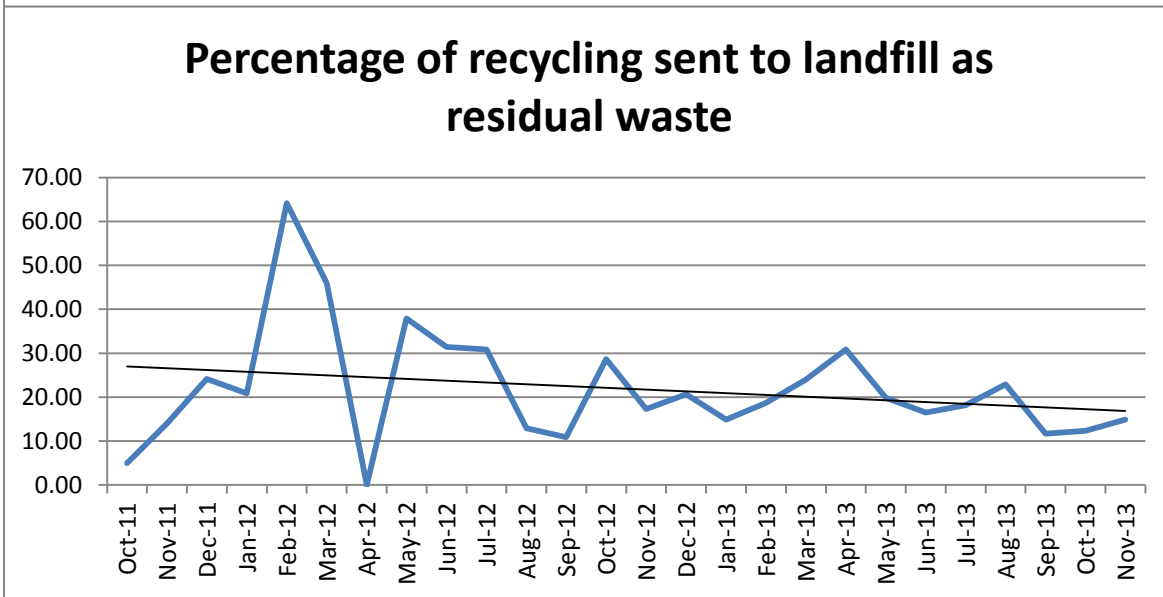
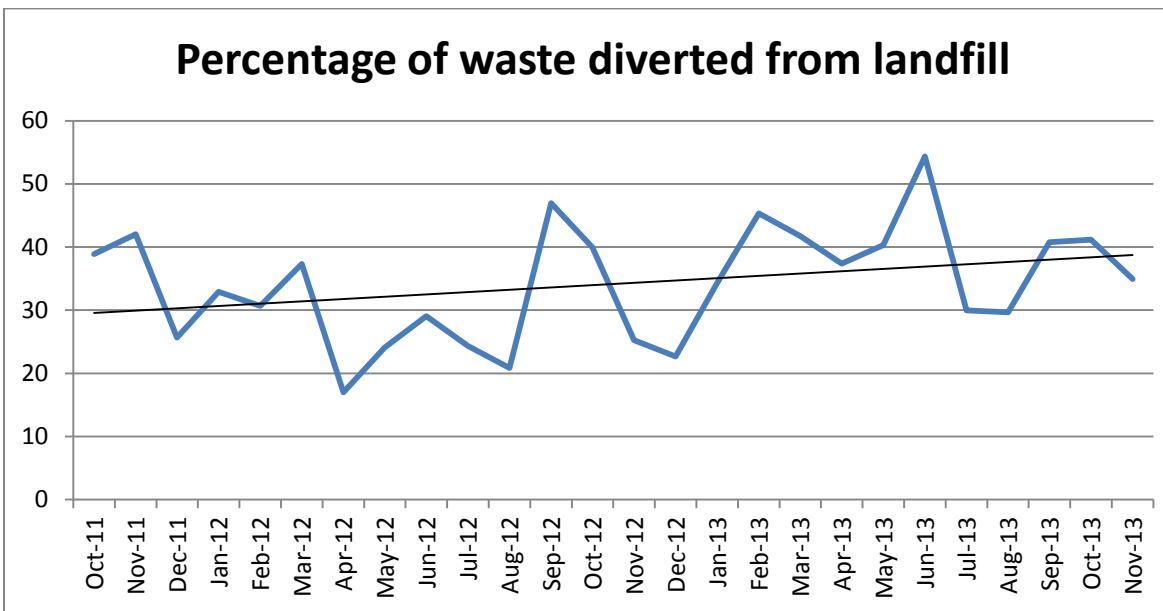
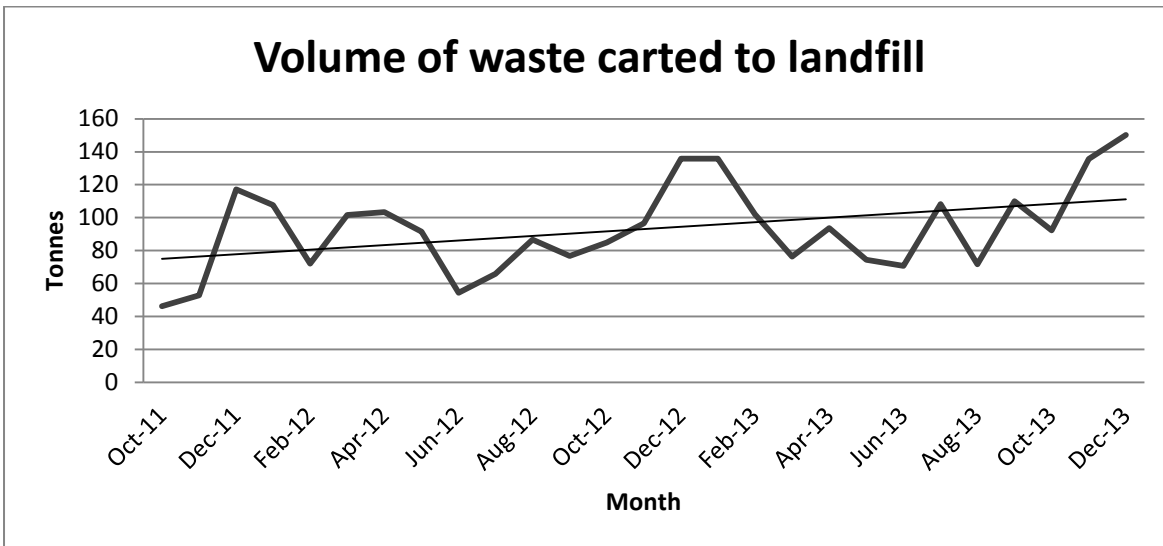
*No junk mail stickers – Ecomailbox:* There appears to be good general support and uptake for the stickers. A hardware store in Timaru has signed up to the Ecomailbox web service to replace sending out circulars after reading about our campaign.

*Extra glass crates:* To encourage recycling of glass and avoid other containers being used on the kerbside, or crates being overfilled, we are offering one additional glass crate per property at no extra charge. Twenty two additional crates have been provided over the last month with positive feedback received on this service.

*Cloth nappy project:* Report attached

**Processing of recycling**

Report attached. Kevin Edgar from Envirowaste will present options and be available for questions.





## **MACKENZIE DISTRICT COUNCIL**

**REPORT TO:** ASSETS AND SERVICES COMMITTEE

**SUBJECT:** ALKALINE ADJUSTMENT OF TWIZEL WATER

**MEETING DATE:** 4 FEBRUARY 2014

**REF:** WAS 16/20

**FROM:** UTILITIES ENGINEER

**ENDORSED BY:** CHIEF EXECUTIVE OFFICER

### **PURPOSE OF REPORT:**

For council consider a report from Opus International Consultants Ltd as to the value in installing the necessary equipment to raise the pH of the Twizel water as part of the current upgrade works.

### **STAFF RECOMMENDATIONS:**

1. That the report be received.
2. That Council accepts the recommendation by Opus International Consultancy Ltd to not dose the Twizel water supply to raise its pH as there is no long term benefit to the expected life of the AC pipe network.

## **ATTACHMENTS:**

### **Opus International Consultancy Ltd**

## **Twizel Water Alkalinity and pH Adjustment Report**

### **Note -Technical discussion removed from the report**

#### **1 Introduction**

This report discusses the advantages and disadvantages of adjusting the alkalinity and pH of the Twizel water as a means of preventing corrosion in the trunk mains, reticulation piping, and plumbing fittings. In particular would the life of the asbestos cement (AC) pipes be extended by adjusting the alkalinity and pH?

#### **2 Background**

The Twizel water is considered to be soft and therefore corrosive to pipes and fittings. There are a large number of asbestos cement (AC) pipes throughout the reticulation and the question of the need to adjust the pH and alkalinity as a means of extending the life of these pipes has been raised.

Testing of raw water parameters for the Twizel water appears to be very limited. However, the testing of a sample in July 2007 (see attached results) showed that the water had low pH and a low level of alkalinity. By calculation the water has a high level of carbon dioxide. These parameters confirm that the water is soft and likely to be highly corrosive.

#### **3 Corrosion Indicators**

There are a number of pipe corrosion indicators which can be used to assess the corrosion potential of a particular water. The most well-known is the Langelier Saturation Index (LSI) which compares the pH of the water with the pH at which the water is saturated with calcium carbonate.

At  $LSI = 0$  the water is saturated. With  $LSI < 0$  the water is potentially corrosive and with  $LSI > 0$  the water has the potential to form scale. As the LSI becomes more negative the water moves from being potentially aggressive, to moderately, and then highly aggressive. With  $LSI > 0$  the water is considered to be non-aggressive.

The Langelier Saturation Index needs to be used with care on soft New Zealand waters as its applicability has found to be wanting.

Other corrosion indicators are the Ryznar Stability Index and the Aggressivity Index. These indices relate pH and the saturation pH, or pH and levels of calcium and alkalinity.

#### **4 Other Considerations**

In addition to adjusting the pH and alkalinity to reduce corrosion of pipes and fittings other aspects such as chlorination, corrosion of copper hot water cylinders, and scaling of heating elements need to be considered.

As the pH of the water increases, the effectiveness of chlorine disinfection decreases. Above  $pH = 8$  the quantity of chlorine added must be increased in order to maintain the effectiveness achieved at  $pH = 8$ .

Soft waters have been implicated in the rapid pin-hole corrosion of copper hot water

cylinders. Water chemistry parameters that indicate that such corrosion should be unlikely are:

Water pH in the range 7.8 to 8.3, along with

Water alkalinity in the range 50 to 100 g/m<sup>3</sup>.

There are other necessary parameters conditions as well but the above conditions are the main ones related to pipe corrosion.

Scaling of heating elements is possible if alkalinity/pH correction is undertaken. This is because the calcium levels needed to achieve the required corrosion protection for pipes can cause scaling when the water is heated.

## **5 Dosing the Water with Alkali Chemicals**

### ***5.1 Hydrated lime, Ca(OH)<sub>2</sub>, (Lime)***

Hydrated lime, Ca(OH)<sub>2</sub>, is the lowest material cost alkali chemical for adjusting alkalinity and pH, but has a number of issues in its use. It is a very messy chemical to handle and dose and the dosing lines are prone to blockage unless particular measures are taken to prevent this from happening.

### ***5.2 Sodium Hydroxide, NaOH, (Caustic Soda)***

Caustic soda has good ability to remove carbon dioxide from water and increase alkalinity concurrently, but it does not add any calcium to the water. It can also create large changes in pH for small changes in dosing.

### ***5.3 Sodium Carbonate, Na<sub>2</sub>CO<sub>3</sub>, (Soda Ash)***

Soda ash produces moderate changes in pH and alkalinity when dosed. It does not add any calcium to the water. Soda ash doses need to be larger than for lime and caustic soda in order to make significant changes to the pH and alkalinity.

## **6 Discussion**

While adjusting the alkalinity and pH of the water is primarily to reduce or prevent corrosion of pipes and fittings in the reticulation system, such action can also assist in preventing pin-hole corrosion in copper hot water cylinders. However, any alkali dosing should be carried out with caution.

Councils around New Zealand have had to defend accusations from irate consumers about the Council's water causing copper hot water cylinder corrosion, when a spate of failures has occurred. Such accusations attract media attention and although it is very unlikely that the water is the sole cause, it creates a lot of work for Council staff. It does appear that changes in water chemistry do increase the propensity for pin-hole corrosion to occur in copper. Therefore any changes to a water supply should be made carefully. If alkalinity and pH changes are to be made then it is essential that the treated water meets the requirements for good copper performance.

Opus carried out an AC pipe assessment in 2009 on an AC pipe from Twizel. This showed that the pipes are low pressure; therefore thin walled, and so they have a limited remaining life. When the cost and inconvenience of dosing alkali chemicals, along with the problems of hot water cylinder element and jug scaling issues, are considered, then it would be better to put that money towards replacing the pipes.

If no adjustment of alkalinity and pH is carried out then the plumbosolvency of the water will have to be considered. Plumbosolvency is the tendency for a water to dissolve small amounts of metals that it comes into contact with. Plumbosolvency is widespread

throughout New Zealand because the soft waters contain very low levels of calcium and magnesium salts which buffer the water.

The traces of heavy metals which result from extended water contact with the plumbing fittings are a health concern. The Ministry of Health has recognised that the most cost effective way of minimising exposure to heavy metals is for consumers to flush a small volume of water from the tap before drawing water for drinking, cooking, or oral hygiene.

To comply with the New Zealand Drinking Water Standards a water supply authority with plumbosolvent water must provide their consumers with advice about the steps to take to avoid having high heavy metal levels in the water that they use. Advising consumers six-monthly is considered an adequate frequency in order to comply with the Standards.

## **6 Conclusions**

Adjusting the alkalinity and pH of the Twizel water as a means of preventing corrosion in the AC pipes has the disadvantages of cost and inconvenience of dosing chemicals, along with the probable problems of hot water cylinder element and jug scaling issues.

The AC pipes in Twizel are low pressure rated; therefore thin walled, and so have a limited remaining life. (Replacement will be due 2020-2025).

Money which would be spent on adjusting alkalinity and pH would be better spent on replacing the AC pipes.

## **7 Recommendation**

It is recommended that:

Mackenzie District Council does not adjust the alkalinity and pH of the Twizel water.

Mackenzie District Council continues to advise consumers six-monthly of the plumbosolvency issue with the Twizel water.

**Murray Petrie**  
**Principle Environmental Engineer**

## **BACKGROUND:**

When Twizel township was first constructed, asbestos cement (AC) pipes were used for the main trunk water lines. As the services were only required to last 20 years, a lower class of pipe with thinner walls was also specified, ie the minimum pressure pipe that was needed.

Due the alkalinity of the water eating up the cement content of the pipe the pipe is softening from the inside and the thus the overall structural integrity is reducing and thus has a limited life.

One of the ways to extend the life of AC pipe, where the pH is low, is to correct it by the addition of chemicals as detailed in the Opus report.

**ISSUES AND OPTIONS:**

The issues and options have been well canvassed in the Opus report.

**CONSIDERATIONS:****Legal Considerations:**

na

**Financial Considerations:**

To pH correct the Twizel water supply would have a financial cost, both Capital and operational. We have not costed this out as there is no benefit to extending the useful life of the existing AC pipes.

**Other Considerations:**

na

**ASSESSMENTS OF OPTIONS:**

The issues and options have been well canvassed in the Opus report.

**CONCLUSION:**

As detailed in the Opus report “*Adjusting the alkalinity and pH of the Twizel water as a means of preventing corrosion in the AC pipes has the disadvantages of cost and inconvenience of dosing chemicals, along with the probable problems of hot water cylinder element and jug scaling issues*” therefore it is recommended that Mackenzie District Council does not adjust the alkalinity and pH of the Twizel water.

## MACKENZIE DISTRICT COUNCIL

**REPORT TO:** ASSETS AND SERVICES COMMITTEE

**SUBJECT:** CLOTH NAPPY PROJECT

**MEETING DATE:** 4<sup>th</sup> FEBRUARY 2014

**REF:** WAS 18/1

**FROM:** MANAGER – SOLID WASTE

**ENDORSED BY:** CHIEF EXECUTIVE OFFICER

### **PURPOSE OF REPORT:**

The Council has a responsibility to promote waste reduction and the Ministry for the Environment provide a waste levy to fund projects with this purpose. Disposable nappies have been identified as a component of our waste stream that could be reduced through the use of cloth nappies. To encourage families within the district to use cloth nappies, it is proposed to offer subsidised nappy packs. The anticipated outcome of these packs is to reduce waste to landfill and promote waste awareness with benefits to families within the Mackenzie, the Council and the environment.

### **STAFF RECOMMENDATIONS:**

1. That the report be received.
2. That the Council agrees to fund the proposed cloth nappy project using the waste levy provided by the Ministry for the Environment.
3. That the Council does not agree to proceed with the proposed cloth nappy project.

**ANGIE TAYLOR**  
**MANAGER – SOLID WASTE**

**WAYNE BARNETT**  
**CHIEF EXECUTIVE OFFICER**

**ATTACHMENTS:**

A brief business case for the project is attached.

**BACKGROUND:**

The Council has set a goal to become a zero waste district and it is considered that this project contributes towards that goal. The Ministry for the Environment provides waste levy funding that is to be used for waste reduction and education. It is considered that the proposed project is an appropriate use of this funding.

**POLICY STATUS:**

N/A

**SIGNIFICANCE OF DECISION REQUESTED:**

It is considered that the decision requested is not significant in terms of the Council's Policy on Significance.

**ISSUES AND OPTIONS:**

The attached business case provides detail on the issues and options.

**CONSIDERATIONS:****Legal Considerations:**

N/A

**Financial Considerations:**

The overall estimated cost of the project is \$3100. This is to be offset by up to \$2100 as parents pay for part of each nappy pack. A breakdown of costs is provided in the attached business case.

It is proposed that the project will be funded from the waste levy we receive from the Ministry for the Environment. The use of this levy is restricted to projects promoting waste reduction and education.

**Other Considerations:**

N/A

**ASSESSMENTS OF OPTIONS:**

The options are detailed in the attached business case.

**CONCLUSION:**

The proposed project will help to reduce the waste that is sent to landfill, which is considered to be an ongoing aim for the district. It will also help to promote awareness of waste reduction options. It is expected that the project will also have cost saving benefits for families. Similar projects have proved successful in other areas.

It is considered that the proposed project is an appropriate use of the waste levy funding provided by the Ministry for the Environment.

Overall, it is considered that the cloth nappy project will be beneficial for the Council, families within the district and the environment.





## **Cloth Nappy Project - 2014**

### **Mackenzie District waste reduction and education initiative**

#### **The opportunity**

The overarching objective of this project is to reduce the amount of waste that is being sent to landfill. The Council has previously stated that we are aiming to be a zero waste district and this project is a positive step towards this goal.

There are several ways to reduce waste to landfill, the first and most effective is to remove material from the waste flow all together, such as replacing disposable nappies with cloth nappies. Other options for reducing waste include recycling and composting. Whatever the method, the Council needs to promote awareness of the issues surrounding waste and provide options for how the public can improve the way they manage their waste.

The cloth nappy project aims to reduce waste to landfill by promoting an alternative product and waste awareness. Cloth nappies are not a new idea! However, modern cloth nappies do provide a more user friendly alternative to the traditional cloth nappies; they are easy to use, easy to wash and are becoming quite trendy.

By providing subsidised cloth nappy packs, the Council can educate parents on waste issues and reduce waste to landfill. One of the challenges to parents trying cloth nappies is the initial cost and selecting a style from the wide range of cloth nappies. The packs will help with this initial challenge in getting started by providing a selection of nappy styles for a largely discounted cost. Packs worth \$100 are offered to parents for \$20, which is a small cost to try out something that could save families hundreds to thousands of dollars in the cost of disposable nappies. The end result provides a benefit to the Council, parents and the environment.

The Ministry for the Environment provide a waste levy to the Council to fund projects related to waste reduction and education. It is proposed to use the waste levy to fund this project.

#### **Proposed project**

The project seeks to reduce waste to landfill by promoting cloth nappies. To achieve this, it is proposed that cloth nappy packs will be offered to parents at a subsidised cost. The cloth nappy packs are provided through The Nappy Lady, an advocate for cloth nappies and waste reduction. The Nappy Lady is currently working with around 25 Councils throughout the country to provide tailored schemes that promote the benefits of cloth nappies and sustainable living. The Nappy Lady works with companies to provide nappy packs to Councils at a reduced price. In addition to providing the packs, The Nappy Lady assists with promotion, workshops for parents if required and surveys to assess the success of the project.

There are approximately 50 births per year in the Mackenzie District. Taking into account that not all parents of new babies will be interested in the nappy packs, but that parents with older babies may be interested, I have recommended trialling 50 nappy packs. I have outlined below the details of the proposed cloth nappy pack for the Mackenzie.

### Three nappy trial pack

Cost to Council \$50 plus gst per pack

RRP value of the pack is around \$100 (nappies provided through The Nappy Lady at a reduced price)

The pack would include three different brands of cloth nappies ranging in retail price from \$24.95 to \$39.99, plus free samples and offers from sponsors and an information booklet prepared by The Nappy Lady.

The Nappy Lady recommends that Councils charge a small amount for the packs and limit these to one pack per household. Larger areas around the country have run workshops for parents, with the packs provided at the workshops. Smaller districts like ourselves have opted to provide the packs to parents directly and not run workshops.

It is suggested that the packs will be available to purchase from the Council offices for a cost of \$20 per pack. Parents purchasing the packs will be requested to complete a survey, which will help us evaluate their effectiveness as a waste reduction tool.

### **Project costs**

Cost per pack – three nappy trial pack – 50 packs at \$50 per pack	\$2500
Charge from The Nappy Lady for organising the packs, send out three surveys using Survey Monkey -3 days, 3 months and 6 months and prepare report from survey results	Estimated \$500
Freight	Estimated \$100
Total initial estimated cost	\$3100
The initial cost will be reduced by the charge to public of \$20 per pack. \$1000 for 50 packs reduces the total cost to \$2100	

This project would be funded from the waste levy we receive from the Ministry for the Environment. The use of this levy is restricted to projects promoting waste reduction and education.

### **The facts and figures**

#### What we can save for the environment

1 cloth nappy is used around 300 times

1 used disposable weighs on average 200g

Therefore, 1 cloth nappy used 300 times can result in approx 60 kg of waste not being sent to landfill.

If we provide a pack with 3 cloth nappies and these are used 300 times each, then one nappy pack can lead to 180kg of waste not being sent to landfill. If 50 packs are given out, 9 tonne of waste could be removed from the waste stream.

Our current transport and disposal cost for residual waste is \$196 ex gst per tonne. If 9 tonnes of waste is removed from our waste stream, this will save \$1764 ex gst in waste disposal costs. This saving would be over the time that a baby stays in nappies, being approximately 2 ½ years.

Of course, some parents will not follow through and the cloth nappies will not be used to their full capacity, however, it is expected that other parents will follow through and further more purchase additional cloth nappies which will result in increased waste reduction.

Cloth nappy trial packs have proved to be successful in a number of other areas throughout the country. A case study from Queenstown in 2012 showed that approx 85% of parents purchasing the trial packs continued to use cloth nappies on either a part or full time basis, with over half of these parents purchasing additional cloth nappies. Approx 70% noticed a reduction in their average weekly rubbish disposal.

#### What we can save for families

There is also a cost saving to parents using cloth nappies. It is estimated that a family can save around \$4000 per child by using cloth nappies, which is money that could be well spent in other ways by families in our district.

Promoting cloth nappies has the flow on effect of increasing awareness of how we generate and dispose of waste.

#### **Options and recommendation**

In summary, the anticipated benefits of the project are:

- Reduced waste to landfill
- Shift towards becoming a zero waste district
- Improved customer service
- Cost savings for parents
- Promotes waste awareness that can flow on to other waste practices

It is considered that this project would be an appropriate use of our waste levy funding and will be a step in the right direction towards reducing waste to landfill and promoting waste education.

An alternative to promoting cloth nappies would be to utilise media sources and word of mouth without offering the nappy packs, however it is considered that the nappy packs are the most effective way of encouraging parents to use cloth nappies instead of disposables. The packs provide parents the opportunity to try cloth nappies without the large initial cost that may be a barrier in getting started.