



Rangitikei District Council

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**Rangitikei**  
UNSPOILT...

# Assets/Infrastructure Committee Meeting Order Paper

**Thursday, 9 April 2015, 9.30 am**

**Council Chamber, Rangitikei District Council  
46 High Street, Marton**

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**Chair**  
Cr Dean McManaway

**Deputy Chair**  
Cr Mike Jones

**Membership**

Councillors Nigel Belsham, Angus Gordon, Tim Harris, Soraya Peke-Mason,  
Ruth Rainey and Lynne Sheridan  
His Worship the Mayor, Andy Watson (ex officio)

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**Please Note:** Items in this agenda may be subject to amendments or withdrawal at the meeting. It is recommended therefore that items not be reported upon until after adoption by the Council. Reporters who do not attend the meeting are requested to seek confirmation of the agenda material or proceedings of the meeting from the Chief Executive prior to any media reports being filed.



# Rangitikei District Council

## Assets and Infrastructure Committee Meeting

Order Paper – Thursday 9 April 2015 – 9:30 a.m.

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### The quorum for the Assets/Infrastructure Committee is 5

At its meeting of 28 October 2010 Council resolved that ‘The quorum at any meeting of a standing committee or sub-committee of the Council (including Te Roopu Ahi Kaa, the Community Committees, the Reserve Management Committees and the Rural Water Supply Management Sub-committees) is that required for a meeting of the local authority in SO 2.4.3 and 3.4.3.’ These Standing Orders were confirmed for the 2013-16 triennium by Council on 31 October 2013.

## **1 Welcome**

## **2 Council prayer**

## **3 Apologies/leave of absence**

## **4 Confirmation of order of business**

That, taking into account the explanation provided why the item is not on the meeting agenda and why the discussion of the item cannot be delayed until a subsequent meeting, ..... be dealt with as a late item at this meeting.

## **5 Confirmation of minutes**

### **Recommendation**

That the Minutes of the Assets/Infrastructure Committee meeting held on 12 February 2015 be taken as read and verified as an accurate and correct record of the meeting.

## **6 Chair's report**

A report will be tabled at the meeting.

File ref: 1-CT-13-1

### **Recommendation**

That the Chair's report to the Assets/Infrastructure Committee meeting on 9 April 2015 be received.

## **7 Activity management templates**

The non-financial reporting templates for March 2015, covering the following groups of activities are attached:

- Roding & Footpaths
- Water Supply
- Sewerage & the Treatment and Disposal of Sewage
- Stormwater Drainage
- Community & Leisure Assets
- Rubbish & Recycling

File ref: 5-EX-4

### **Recommendation**

That the non-financial reporting templates for Asset based groups of activities for March 2015 be received.

## **8 Queries Raised at Previous Meeting**

A memorandum is attached.

File ref: 3-CT-13-4

### **Recommendation**

That the memorandum 'Queries Raised at Previous Meeting' be received.

## **9 Bonny Glen Leachate Report – Marton WWTP**

A report is attached.

File ref: 6-WW-1-4

### **Recommendation**

- 1 That the report 'Marton WWTP - Bonny Glen Leachate Effects – Options Assessment' be received.
- 2 That the leachate from Bonny Glen is partially treated before any mixing with wastewater at Marton WWTP.
- 3 That RDC meet with Midwest Disposals Ltd to determine the best place and method for the pre-treatment, either at the landfill (preferred option) or at Marton WWTP.
- 4 That all the costs associated with any up-grading works required at Marton WWTP to deal with the leachate are recovered from Midwest, either in the form of appropriate Trade Waste charges or a combination of capital contribution and trade waste charges.

## **10 Tendering Streetlight Maintenance**

A report is attached.

File ref: 6-RT-5-12

### **Recommendation**

- 1 That the report "Tendering streetlight maintenance' be received
- 2 That the tendering model used for Streetlight maintenance is Option 2: partly combined – Contract No.1 – Manawatu/Horowhenua and Contract No.2 – Rangitikei with the option of a grouped tender over the two contracts.

## **11 Marton Water Treatment Plant Up-grade – Progress Report and Final Estimated Costs**

A report will be tabled at the meeting and circulated electronically beforehand.

File ref:

### **Recommendation**

That the report 'Marton Water Treatment Plant Up-grade – Progress Report and Final Estimated Costs' be received.

## **12 Progress with resolving uncertainty over responsibility for Council's stormwater drainage network in urban areas**

A verbal update will be provided at the meeting.

## **13 One Network Road Classification - transition plans**

An update on the process will be provided to the meeting.

## **14 Improving broadband connectivity and mobile coverage in the Rangitikei**

The Ministry of Business, Innovation & Employment is asking local government to get involved in identifying the next priorities for Ultra-fast Broadband (UFB), the Rural Broadband Initiative (RBI) extension and the Mobile Black Spots Fund. A letter from the Minister for Communications is attached which outlines the approach being taken.

Council will prepare a bid for better connectivity.

## **15 Mangaweka Camping Ground Ablution Block – progress update**

A report will be tabled at the meeting.

File ref:

### **Recommendation**

That the report 'Mangaweka Camping Ground Ablution Block – progress update' be received.

## **16 Resource Consent compliance**

A report is attached.

File ref: 3-CT-13-4

### **Recommendation**

That the report 'Consent Compliance – Jul 2014 to Mar 2015' to the Assets/Infrastructure Committee meeting on 9 April 2015 be received.

## **17 Late items**

## **18 Future items for the agenda**

## **19 Next meeting**

Thursday 14 May 2015, 9.30 am

## **20 Meeting closed**

# Attachment 1



# Rangitikei District Council

## Assets and Infrastructure Committee Meeting

Minutes – Thursday 12 March 2015 – 9:39 a.m.

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**Present:** Cr Dean McManaway (Chair)  
Cr Mike Jones  
Cr Nigel Belsham  
Cr Ruth Rainey  
Cr Lynne Sheridan

**In attendance:** Mr Hamish Waugh, Infrastructure Group Manager  
Mr Michael Hodder, Community & Regulatory Services Group Manager  
Mr George McIrvine, Finance & Business Support Group Manager  
Ms Gaylene Prince, Community & Leisure Services Team Leader  
Mr Reuben Pokiha, Operations Manager - Roading  
Ms Joanna Saywell, Asset Manager – Utilities  
Mr David Rei Miller, Asset Engineer – Utilities  
Mr Mike Fletcher, Project Engineer - Utilities  
Mr Chris Pepper, Project Engineer – Utilities  
Mr Andrew van Bussel , Operations Manager – Utilities  
Mr Don Stewart, Project Engineer – Utilities  
Mr Johan Cullis, Environmental Services Team Leader  
Ms Samantha Whitcombe, Governance Administrator

**Tabled documents:** **Item 6** Chair's Report  
**Item 8** Budget Queries Raised at Finance/Performance Committee, 26 February 2015 (updated)

## 1 Welcome

The Chair welcomed everyone to the meeting.

## 2 Council Prayer

Cr McManaway read the council prayer.

## 3 Apologies/Leave of absence

That the apology for absence from His Worship the Mayor, Cr Harris Cr Gordon and Cr Peke-Mason be received.

Cr Belsham / Cr Jones. Carried

## 4 Confirmation of order of business

The Chair informed the Committee that there would be no change to the order of business from that set out in the agenda.<sup>1</sup>

## 5 Confirmation of minutes

|                               |                   |                 |
|-------------------------------|-------------------|-----------------|
| <b>Resolved minute number</b> | <b>1S/AIN/009</b> | <b>File Ref</b> |
|-------------------------------|-------------------|-----------------|

That the Minutes of the Assets/Infrastructure Committee meeting held on 12 February 2015 be taken as read and verified as an accurate and correct record of the meeting.

Cr Belsham / Cr Sheridan. Carried

## 6 Chair's report

|                               |                   |                 |                  |
|-------------------------------|-------------------|-----------------|------------------|
| <b>Resolved minute number</b> | <b>1S/AIN/010</b> | <b>File Ref</b> | <b>1-CT-13-1</b> |
|-------------------------------|-------------------|-----------------|------------------|

That the Chair's report to the Assets/Infrastructure Committee meeting on 12 March 2015 be received.

Cr McManaway / Cr Sheridan. Carried

## 7 Activity management templates

Mr Pokiha, Mr Pepper, Mr Miller, Ms Prince and Mr Waugh spoke to the activity management templates for Asset based groups of activities.

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<sup>1</sup> Item 10 was subsequently taken after Item 7 as Mr Lowe was present at the meeting.

Mr Pokiha noted that construction of the replacement Wylie's Bridge had started followed by a blessing ceremony by local Iwi. The Committee asked if the project plan could be circulated, along with clarification about access over the existing bridge.

The Committee sought clarification on any undertaking made by the Government to funding a replacement Mangaweka Bridge when the state highway was routed away from that bridge.

Mr Pokiha noted that the price from the contractor to install the off-road parking bay at Gumboot Park (\$30,000) was significantly higher than the engineer's estimate (\$18-20,000) and this was under discussion.

The Committee asked for clarification on the terms of the resource consent granted for the Marton Waste Transfer Station. Green waste was piling up above the fence line along King Street and a neighbouring resident had questioned this.

|                               |                   |                 |               |
|-------------------------------|-------------------|-----------------|---------------|
| <b>Resolved minute number</b> | <b>1S/AIN/011</b> | <b>File Ref</b> | <b>5-EX-4</b> |
|-------------------------------|-------------------|-----------------|---------------|

That the non-financial reporting templates for Asset based groups of activities for February 2015 be received.

Cr Jones / Cr Rainey. Carried

## **10 Bulls Wastewater Treatment Plant**

Hamish Lowe, from Lowe Environmental Impact, was present at the meeting to speak to the report on the Bulls Wastewater Treatment Plant. He provided a brief overview of the report and gave further detail to the various options for the treatment plant.

The existing treatment plant was fundamentally sound and the discharge to the river (monitored over ten years) had effects which were no more than minor. At present, the discharge was direct from the second pond. However, this was not acceptable to Iwi, who preferred discharge to land. This could be achieved, but at a probable cost of around \$5 million. The Resource Management Act had scope for councils to take affordability issue into account.

Creating a meandering wetland ("rapid infiltration") was a potential compromise, as it would not mean a direct discharge to the river. Given the quality of discharge to the river, there would be no detrimental effects on ground water. The rain risk (and to the treatment facility as a whole) was from several floods in the river, leading to over-topping of the ponds.

He anticipated the resource consent being lodged by 31 March 2015, if the Committee accepted the recommendations in the report.

**Resolved minute number**                      **15/AIN/013**                      **File Ref**

That the report 'Bulls Wastewater Upgrade: Best Practicable Option Report' by Lowe Environmental to the Assets/Infrastructure Committee's meeting 12 March 2015 be received.

Cr Sheridan / Cr Rainey. Carried

**Resolved minute number**                      **15/AIN/014**                      **File Ref**

That the Assets/Infrastructure Committee endorses the recommendations included in the report from Lowe Environmental Impact on the Bulls Wastewater Treatment Plant, being:

- Investigate the practicality of a Rapid Infiltration system adjacent to the existing Bulls WWTP to reduce the extent of direct discharge to the Rangitikei River.
- Pursue the opportunities for a summer seasonal land discharge of wastewater from the Bulls WWTP; and
- Pursue the consenting of the entire Bulls WWTP discharge to the Rangitikei River, to ensure that the WWTP can remain irrespective of any summer seasonal discharge arrangement being successful.

Cr Jones / Cr Belsham. Carried

## **8 Budget Queries Raised at Finance/Performance Committee, 26 February 2015**

The report was taken as read. Council staff were asked to investigate options for the use of the excess budget for public toilets, particularly to improve the interior of the Lower High Street toilets in Marton, and to report back to the Committee's next meeting.

**Resolved minute number**                      **15/AIN/012**                      **File Ref**                      **3-CT-14-1**

That the memorandum 'Budget Queries Raised at Finance/Performance Committee, 26 February 2015' be received.

Cr Sheridan / Cr Belsham. Carried

## **9 Options to deliver services for Council parks and town maintenance**

Ms Prince narrated a PowerPoint presentation on the delivery of services for Council's parks and town maintenance, currently contracted to Fulton Hogan. Mr Cullis provided some detail on the process undertaken by Waitomo District Council in bringing some of these services back in-house.

A formal written report on the matter would be provided for Council's consideration on 26 March 2015.

## 11 Mangaweka Camping Ground Ablution Block

Ms Prince spoke briefly to the report. The Chair noted the support from the Mayor and Cr Aslett to rebuilding the ablution block. The Committee asked for clarification on the minimum requirements for toilets at the campground, including over disability access.

**Resolved minute number**                      **15/AIN/015**                      **File Ref**                      **6-RF-1-1**

That the 'Mangaweka Camping Ground Ablution Block' report be received:

Cr Sheridan / Cr Rainey. Carried

**Resolved minute number**                      **15/AIN/016**                      **File Ref**                      **6-RF-1-1**

That the Assets and Infrastructure Committee support redirecting the unspent portion of the funding allocated to upgrade the Mangaweka Camping Ground on-site sewage disposal system towards an ablution block upgrade at the camping ground, and that the proposed scope, scale and cost of the upgrade be approved by the Chief Executive within the budget available.

Cr Belsham / Cr Rainey. Carried

## 12 Consent Compliance – Jul 2014 to Feb 2015

Ms Saywell spoke briefly to the report. Mr Waugh provided further detail on the upcoming meeting with Horizons Regional Council's Environmental Committee on the non-compliance issue at some of the wastewater treatment plants within the District.

**Resolved minute number**                      **15/AIN/**                      **File Ref**                      **5-EX-4**

That the report 'Consent Compliance – Jul 2014 to Feb 2015' to the Assets/Infrastructure Committee meeting on 12 March 2015 be received.

Cr Jones / Cr Sheridan. Carried

## 13 Late items

Nil

## 14 Future items for the agenda

Nil

**15 Next meeting**

Thursday 9 April 2015, 9.30 am

**16 Meeting closed – 11.42 am**

Confirmed/Chair: \_\_\_\_\_

Date: \_\_\_\_\_

Unconfirmed

# Attachment 2

| Performance measures in LTP/Annual Plan   |  |  |  |   |
|---|--|--|--|---|
| What are they:  | Targets  | Progress for this reporting period   | Progress to date for this year   | Work planned for next three months  |
| Provide a safe roading network which allows people to travel from A to B, free of loose gravel or potholes and maintaining the level of sealed roads currently available.   | Smooth travel exposure rating: target of 96.5%.  |  | Smooth Travel Survey completed in June.  | Continue to monitor the roading network to ensure the required standard is being maintained                                     |
| The number of callouts to the contractor, both within working hours and after-hours, with the response and resolution times (with the percentage resolved within a specified time).<br>Specific note made of:<br>(i) time to respond/resolve callouts relating to potholes; and<br>(ii) incidents of crashes on Council's roading network and whether the road condition was a cause of each crash. | 100% after-hours callouts responded to within 12 hours.<br>100% callouts during working hours, responded to within 6 hours<br>(i) 80% of all callouts resolved (i.e. completed) within one month of the request.<br>Specific reference to callouts relating to potholes.<br>No fatal crashes attributable to the condition of the roading network. | For the month of March, 35 call outs recorded with 32 responded to on time (91%) and 2 current (6%); Callouts after hours 4(100%) responded to on time. Potholes 1 (100% completed on time); Nil fatal crashes on the network. | Total callouts to date number = 294 (95.6% completed on time); Number of call outs after hours = 19 (94.5% completed on time); Number of potholes 24 (95% completed on time); One fatal crash. | Ensuring that the required response times are being achieved.   |
| Increased asset length and footpath renewal programme:<br>Adequacy of provision and maintenance of footpaths, street lighting and local roads (annual survey).  | A greater proportion (than in the previous year) of the sample believe that Council's service is getting better.   | Not achieved: 15% believe the service is better than last year (cf 22% in 2012 and 16% in 2013).   |  | Ensuring that the identification of future programmes is worked on with commitment.   |
| New Mandatory Benchmark Measures  |  |  |  |   |
| What are they:  | Targets  | Progress for this reporting period   | Progress to date for this year   | Work planned for next three months  |
| Road Safety:<br>The change from the previous financial year in the number of fatalities and serious injury crashes on the local road network, expressed as a number.  | Targets to be set as part of the 2015-25 LTP   | Nothing to report.   | Safety audit received from GHD with a number of recommendations - mostly upgrading of signage  | To commence implementation of safety recommendations.   |
| Road Condition:<br>The average quality of ride on a sealed local road network, measured by smooth travel exposure.  | Targets to be set as part of the 2015-25 LTP   | The smooth travel exposure survey has been completed.  | The smooth travel exposure survey completed  | Contractual requirement to continue to monitor the roading network to ensure compliance for roughness and mitigate as required. |
| Road Maintenance:<br>The percentage of the sealed local network that is resurfaced.   | Targets to be set as part of the 2015-25 LTP   | Nil  | Nil  | An annual measurement.  |
| Footpaths:<br>The percentage of footpaths within the District that fall within the level of service or service standard for the condition of footpaths that is set out in the territorial authority's relevant document (such as its annual plan, activity management plan, asset management plan, annual works program or long term plan).   | Targets to be set as part of the 2015-25 LTP   | Nil  | Nil  | Continues to be monitored to ensure compliance  |



|   |   |  |   |   |
|---|---|--|---|---|
| Response to Service Requests:<br>The percentage of customer service requests relating to roads and footpaths to which the territorial authority responds within the time frame specified in the long term plan. | Targets to be set as part of the 2015-25 LTP  | Team continually striving to ensure that the response and closing off of the RFS is carried out as expeditiously as possible within the identified time frame. | There has been a steady improvement regards the actioning of the RFS's which shows the achievement for the month of February. | To continue to strive to achieve a 100% performance outcome for the period. |
| <b>Requests for Service</b>   |   |  |   |   |
| What are they:  | Completed on time   | Completed late   | Overdue   | Current   |
| <b>Culverts/Drainage</b>  |   |  |   |   |
| Maintenance (culverts/drainage)   | 3   | 0  | 0   | 0   |
| <b>Road Signs</b>   |   |  |   |   |
| Maintenance (road signs)  | 2   | 0  | 0   | 0   |
| <b>Roads</b>  |   |  |   |   |
| Maintenance (roads - potholes only)   | 1   | 0  | 0   | 0   |
| Maintenance (roads)   | 11  | 0  | 0   |   |
| <b>Roadside Vegetation/Trees</b>  |   |  |   |   |
| Maintenance (roadside vegetation/trees)   | 8   | 1  | 0   |   |
| <b>Footpaths</b>  |   |  |   |   |
| Maintenance (footpaths)   | 3   | 0  | 0   |   |
| <b>Street Lighting</b>  |   |  |   |   |
| Maintenance (street lighting)   | 4   | 0  | 0   | 2   |
| <b>Other Levels of Service</b>  |   |  |   |   |
| What are they:  | Targets   | Progress for this reporting period   | Progress to date for this year  | Work planned for next three months  |
| Roads in towns to be attractive and well maintained allowing residents to access goods and services   | A functional road network that provides access to residential, commercial and retail premises and some beautification of road reserves. | The contractual requirement is that this service is required to be continually monitored so as to ensure that the network continues to be well maintained.     | Continual monitoring of the roads especially with in the Urban areas continues.   | Monitoring of the asset continues.  |
| Attractive and well designed urban street lighting that makes residents feel safe and secure when walking or driving  | Maintenance of existing network. No upgrade or renewal.   | On going monitoring to ensure that the performances measures as set in the LTP are maintained.   | Ensuring that the required standard is maintained   | On going monitoring to ensure compliance.                                   |

ROADING AND FOOTPATHS GROUP OF ACTIVITIES 2014/15

Mar-15

| Major programmes of work outlined in the LTP/Annual Plan |  |   |  |  |
|--|--|---|--|--|
| What are they:   | Targets  | Progress for this reporting period  | Progress to date for this year   | Work planned for next three months   |
| Roading activity   | Capital Projects   | Roading has no Capital projects to report on.   | Nothing to report on   | Nothing to report on.  |
|  | Resealing of specified portions of existing sealed roads (55km)        | Approximately 5kms of pavement sealed this period on various locations on the network .   | Reseal contract now 100% complete with 61.84kms achieved.  | Resurfacing programme now completed.   |
|  | Rehabilitation of specified existing sealed roads (8.8 km)             | Work currently underway on the Makirikiri site. Approx 50% complete.  | Bryces line, Union Line, Mangahoe and Kauangaroa AWPT sites completed.   | To complete the Makirikiri site and commence the Wellington Road site (opposite Reids Road) April  |
| Footpath and Streetlighting activity                     | Variation from the LTP; Wylies Bridge replacement deferred to 2014/15. | Work on the site commenced on February 25 after a blessing of the site from the local IWI. Work now well under way mostly on the approaches and abutments on the Mangamahu side of the river. As of Monday the 23rd no work had actually commenced on the bridge structure. | The contract awarded to Concrete Structures NZ Ltd for \$2,296,850.88. The cost share to RDC is \$765,617. The contract was a design and build with the new bridge design to mirror the existing bridge. The new bridge position approx 25 metres downstream, thus current bridge able to be used. | To complete the construction of the bridge. The contract completion date is September but the contractor has indicated to WDC that they are striving to have completed by June 30. |
|  | Footpath and street lighting activity – specified capital programme.   | Work well under way on the two footpath contracts. Two sites only from the Capital  | Footpath contract progressing.   | To complete footpath contract. Street light to be erected at the Intersection of Jeffersons and  |
|  | Footpath and street lighting activity – specified renewal programme.   | Footpath contracts progressing. Majority of footpath sites with in the contract are renewals. (526m)  | Footpath contract progressing.   | To complete footpath contract.   |

| PAVEMENT REHABILITATION 14/15 |                       |   |              |                 |
|-------------------------------|-----------------------|---|--------------|-----------------|
| PROJECT                       | ROUTE POSITION LENGTH | STATUS  | START DATE   | COMPLETION DATE |
| Mangahoe Road                 | 2.00 – 3.97           | Completed                                       | March 14     | July 14         |
| Wellington Road               | 6.85 – 7.23 (380m)    | Design completed – Resource Consent approved    | April 15     | June 15         |
| Kauangaroa Road               | 5.08 – 6.30           | Completed                                       | Mid – May 14 | August 14       |
| Bryce’s Line                  | 0.02 – 2.34           | Completed                                       | August 14    | November 14     |
| Union Line                    | 4.85 – 5.15           | Completed                                       | November 14  | December 14     |
| Makirikiri Road               | 13.90 – 14.62 (720m)  | Work currently underway (approx. 50% completed) | February 15  | April 15        |

| ROADING CAPEX REPORT as at 28 February 2015 |                  |                  |
|---|------------------|------------------|
| Capital                                     | Budget           | YTD              |
| Sealed road surfacing                       | 1,957,711        | 2,494,696        |
| Drainage renewals                           | 316,193          | 392,225          |
| Pavement rehabilitation                     | 2,923,515        | 1,288,365        |
| Structures component replace                | 246,079          | 101,162          |
| Traffic services renewals                   | 110,000          | 94,645           |
| Associated improvements                     | 106,000          | 82,620           |
| Unsealed road metalling                     | 333,502          | 167,978          |
| <b>TOTAL</b>                                | <b>5,993,000</b> | <b>4,621,691</b> |

77% of the Budget spent.

**WATER SUPPLY GROUP OF ACTIVITIES 2014/15**

**Mar-15**

| <b>Performance measures in LTP/Annual Plan</b>  |   |   |  |  |
|---|---|---|--|--|
| <b>What are they:</b>   | <b>Targets</b>  | <b>Progress for this reporting period</b>   | <b>Progress to date for this year</b>  | <b>Work planned for next three months</b>  |
| Provide a reliable, accessible and safe water supply to properties on the urban reticulation systems  | No incidents of non-compliance with resource consents   | Not achieved. Water Outlook reports identified exceedances at Mangaweka. Flow limiter needs repair. Consumption also being investigated at several locations in town. No other non-compliances within reporting period, apart from Taihape issue which is being resolved with Horizons.   | Not achieved. Water Outlook reports identified exceedances at Mangaweka. Non-compliance for abstraction at Omatane 3-11 Dec 2014 due to leak which has now been repaired. No other non-compliances within reporting period, apart from Taihape issue which is being resolved with Horizons.  | Continue implementation of Water Outlook to assist with compliance monitoring. Complete required flow meter verifications. Apply for variation to Taihape consent to allow discharge of excess back to river. Finalise consent application for Calico Line bore, Marton. |
|   | No incidents of E-coli detection requiring information to be passed to Ministry of Health's Drinking Water Assessor.  | Not achieved. One incident of E. coli detection at Hunterville requiring notification. Following this, three consecutive daily samples were taken and chlorine residual was tested; samples were clear and chlorine tests passed. It is likely that the E. coli result was a false reading. There was chlorine in the sample at the time. | Not achieved. One incident of E. coli detection at Hunterville in March requiring notification. Following this, three consecutive daily samples were taken and chlorine residual was tested; samples were clear and chlorine tests passed. It is likely that the E. coli result was a false reading. There was chlorine in the sample at the time. | Continue implementation of Water Outlook to assist with compliance monitoring.   |
|   | Operational compliance with legislation confirmed by Drinking-water Assessor grading in Ratana, Hunterville and Mangaweka water schemes (Marton, Taihape and Bulls continue to be assessed as compliant). | Achieved. Compliance with legislation measured by status of Water Safety Plans (WSPs). Revised Hunterville Urban WSP approved.  | Achieved. Compliance with legislation measured by status of Water Safety Plans (WSPs). Revised Hunterville Urban WSP approved.   | Update of Bulls Water Safety Plan to reflect WTP process changes by Opus consultants. Marton, Taihape and Bulls Water Safety Plans require final sign off from Drinking Water Assessor by 30 June 2015. Jim Graham of Opus has been engaged to finalise.                 |
|   | 0 unplanned water supply disruptions affecting multiple properties.   | Achieved  | Achieved   |  |
| Provide a reliable water pressure and flow, which complies with the NZ Fire Service Fire Fighting Water Supplies Code of Practice   | 100% of fire hydrant installations are in compliance.   | Not achieved. 97% of hydrants compliant when tested in 2012. No maintenance issues relating to fire hydrants within the reporting period.   | Not achieved. 97% of hydrants compliant when tested in 2012. Two maintenance issues relating to fire hydrants so far this year.  | Reticulation team is developing a programme to re-test hydrants according to NZFS Firefighting Water Supplies COP. The main along Rangatahi Rd, Ratana will be upsized, and three hydrants installed, to provide fire flows.   |
| <b>New Mandatory Benchmarking Measures</b>  |   |   |  |  |
| <b>What are they:</b>   | <b>Targets</b>  | <b>Progress for this reporting period</b>   | <b>Progress to date for this year</b>  | <b>Work planned for next three months</b>  |
| Safety of Drinking Water<br>The extent to which the local authority's drinking water supply complies with:<br>(a) part 4 of the drinking-water standards (bacteria compliance criteria), and<br>(b) part 5 of the drinking-water standards (protozoal compliance criteria). | Targets to be set as per LTP 2014-2015, 2015-16   | Not achieved. Water Outlook reports identified exceedances at Mangaweka. Flow limiter needs repair. Consumption also being investigated at several locations in town. No other non-compliances within reporting period, apart from Taihape issue which is being resolved with Horizons.   | Not achieved. Water Outlook reports identified exceedances at Mangaweka. Non-compliance for abstraction at Omatane 3-11 Dec 2014 due to leak which has now been repaired. No other non-compliances within reporting period, apart from Taihape issue which is being resolved with Horizons.  | Continue implementation of Water Outlook to assist with compliance monitoring.   |
|   | Targets to be set as per LTP 2014-2015, 2015-16   | Not achieved. Protozoal compliance cannot currently be demonstrated for any supplies. Marton has UV but still needs SCADA installation. All supplies will be compliant by end of Jun 2015.  | Not achieved. Protozoal compliance cannot currently be demonstrated for any supplies. Marton has UV but still needs SCADA installation. All supplies will be compliant by end of Jun 2015.   | Continue implementation of Water Outlook to assist with compliance monitoring. Identify work needed to achieve compliance. Move towards obtaining secure bore status for bores at Ratana and Calico Line (Marton). Continue upgrade work at plants.                      |
| Maintenance of the Reticulation Network: The percentage of real water loss from the local authority's networked reticulation system (including a description of the methodology used to calculate this).  | Targets to be set as per LTP 2014-2015, 2015-16   | Not determined. This will be calculated for each supply using Method 1 (Benchloss) or Method 2 (MNF-based) from the DIA guidelines. One figure for the year for each scheme will be determined before 30 Jun 2015.  | Not determined. This will be calculated for each supply using Method 1 (Benchloss) or Method 2 (MNF-based) from the DIA guidelines. One figure for the year for each scheme will be determined before 30 Jun 2015.   | Continue implementation of Water Outlook to enable automated reporting against this measure.   |

|  |  |  |  |  |
|--|--|--|--|--|
| <p><b>Fault Response Times</b><br/>Where the local authority attends a call-out in response to a fault or unplanned interruption to its networked reticulation system, the following median response times measured:</p> <p>(a) attendance for urgent call-outs: from the time that the local authority receives notification to the time that service personnel reach the site, and</p> <p>(b) resolution of urgent call-outs: from the time that the local authority receives notification to the time that service personnel confirm resolution of the fault or interruption.</p> <p>(c) attendance for non-urgent call-outs: from the time that the local authority receives notification to the time that service personnel reach the site, and</p> <p>(d) resolution of non-urgent call-outs: from the time that the local authority receives notification to the time that service personnel confirm resolution of the fault or interruption.</p> | Targets to be met as part of the 2015-2019 LTP | a) 1 Urgent RFS was received and responded to on time as per the RFS system.   | a) 21 Urgent RFS's were received and 14 were responded to in time and 7 were responded to late as per the RFS system.  | Review RFS system to ensure correct performance reporting.   |
|  | Targets to be met as part of the 2015-2019 LTP | b) 1 Urgent RFS was received and completed on time as per the RFS system.  | b) 21 Urgent RFS's were received and 14 were completed on time and 7 were completed late as per the RFS system.  | Review RFS system to ensure correct performance reporting.   |
|  | Targets to be met as part of the 2015-2019 LTP | c) 30 Non-urgent RFS's were received 29 were responded to in time and 1 is current as per the RFS system.                                    | c) 267 Non-urgent RFS's were received and 247 were responded to on time and 1 is current as per the RFS system.  | Review RFS system to ensure correct performance reporting.   |
|  | Targets to be met as part of the 2015-2019 LTP | d) 30 Non-urgent RFS's were received 29 were completed on time and 1 is current as per the RFS system.                                       | d) 267 Non-urgent RFS's were received 247 were completed on time and 1 is current as per the RFS system.   | Review RFS system to ensure correct performance reporting.   |
| <p><b>Customer Satisfaction</b><br/>The total number of complaints received by the local authority about any of the following:</p> <p>(a) drinking water clarity</p> <p>(b) drinking water taste</p> <p>(c) drinking water pressure or flow</p> <p>(d) continuity of supply, and</p> <p>(e) the local authority's response to any of these issues</p> <p>expressed per 1000 connections to the local authority's networked reticulation system.</p>  | Targets to be met as part of the 2015-2019 LTP | a) 0.2/1000  | a) 5.2/1000  |  |
|  | Targets to be met as part of the 2015-2019 LTP | b) 0/1000  | b) 0.4/1000  |  |
|  | Targets to be met as part of the 2015-2019 LTP | c) 0.2/1000  | c) 1.9/1000  |  |
|  | Targets to be met as part of the 2015-2019 LTP | d) 0/1000  | d) 3.2/1000  |  |
|  | Targets to be met as part of the 2015-2019 LTP | e) 0/1000  | e) 1.9/1000  |  |
|  | Targets to be met as part of the 2015-2019 LTP |  |  |  |
| <p><b>Demand Management</b><br/>The average consumption of drinking water per day per resident within the territorial authority district.</p>  | Targets to be met as part of the 2015-2019 LTP | 774 L/person/day. Based on daily totals and population for Bulls, Hunterville Urban, Mangaweka, Rātana and Taihape. Data from Water Outlook. | 524 L/person/day. Based on daily totals and population for Bulls, Hunterville Urban, Mangaweka, Rātana and Taihape. Data from Water Outlook and Control Box. | Continue implementation of Water Outlook to enable easy reporting of this figure on a monthly basis. |

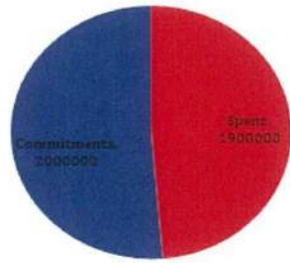
| Requests for Service                                  |                   |                                    |                                |  |
|---|-------------------|------------------------------------|--------------------------------|--|
| What are they:  | Completed on time | Completed late                     | Overdue                        |  |
| <b>Water</b>  |                   |                                    |                                |  |
| Bad tasting drinking water                            | 0                 | 0                                  | 0                              |  |
| Dirty drinking water                                  | 1                 | 0                                  | 0                              | Consolidate with DIA measures above to avoid repetition. |
| Location of meter/toby/other utility                  | 1                 | 0                                  | 0                              | Consolidate with DIA measures above to avoid repetition. |
| Low drinking water pressure (non urgent)              | 1                 | 0                                  | 0                              | Consolidate with DIA measures above to avoid repetition. |
| No drinking water supply (urgent)                     | 0                 | 0                                  | 0                              | Consolidate with DIA measures above to avoid repetition. |
| Replace toby, meter or lid                            | 8 - 1 current     | 0                                  | 0                              | Consolidate with DIA measures above to avoid repetition. |
| Water flooding (other than stormwater and wastewater) | 0                 | 0                                  | 0                              | Consolidate with DIA measures above to avoid repetition. |
| Water leak  | 15                | 0                                  | 0                              |  |
| Water leak at meter/toby                              | 4                 | 0                                  | 0                              |  |
| <b>Other Levels of Service</b>                        |                   |                                    |                                |  |
| What are they:  | Targets           | Progress for this reporting period | Progress to date for this year | Work planned for next three months                       |
| None  |                   |                                    |                                |  |

| WATER SUPPLY GROUP OF ACTIVITIES 2014/15                                   |  |  | Mar-15  |  |
|--|--|--|---|--|
| Major programmes of work outlined in the LTP/Annual Plan 2013/14: Complete |  |  |   |  |
| What are they  | Targets  | Progress for this reporting period   | Progress to date for this year  | Work planned for next three months                     |
| Capital Projects; Reticulation and Treatment                               |  |  |   |  |
| Marton   | Pressure flow control, backflow protection; Water Treatment Plant Upgrade, Canteen St, Dunsinane PI/Blennerville PI, Hereford St/Bredin's Lane, Canteen St |  | Completed   | n/a  |
| Taihape  | Pressure flow control, backflow protection, PRV & Boost Pump Station   |  | Completed   | n/a  |
| Bulls  | Backflow Protection  |  | Completed   | n/a  |
| Mangaweka  | Seismic flow protection, telemetry upgrade   |  | Completed   | n/a  |
| Hunterville  | Seismic flow protection, telemetry upgrade, backflow protection  |  | Completed   | n/a  |
| Ratana   | New treatment plant  |  | Completed   | n/a  |
| Erewhon  |  |  |   |  |
| Hunterville Rural  |  |  |   |  |
| Omatane  |  |  |   |  |
| Major programmes of work outlined in the LTP/Annual Plan 2014/15           |  |  |   |  |
| What are they  | Targets  | Progress for this reporting period   | Progress to date for this year  | Work planned for next three months                     |
| Capital Projects; Reticulation and Treatment                               |  |  |   |  |
| District-Wide  | Implement appropriate backflow protection for Council's urban supplies   |  | See first Water Supply Group of Activities Template   | n/a  |
|  | Review network replacement programme for all assets exceeding threshold risk of 10/25  |  | See first Water Supply Group of Activities Template   | n/a  |
|  | Develop proposals (including activity/asset management plan) for inclusion in draft 2015.25 Long Term Plan   |  | See first Water Supply Group of Activities Template   | n/a  |
| Marton   | Complete renewal of Marton water reticulation (from Jeffersons Line to the new treatment plant) - Marton water Treatment Plant Upgrade                     | WTP entranceway upgrade being designed. Internal concrete works completed.   | The WTP Upgrade works is complete except for electrical and process commissioning and landscape/frontage upgrade works . Landscaping works completed      | Complete WTP upgrading works                           |
| Taihape  | Taihape – renewals of treatment and reticulation facilities - Dixon Way, Water supply investigation  | Invitation for expressions of interest for design work. Op's team carrying out physical investigation works.                       | Investigation works underway  | Complete investigation works                           |
| Bulls  | Install new water supply filling station   | Preliminary design underway, In consultation with Roading and Operations teams. Preferred site identified at Domain Road           | Site investigation being scoped, existing service connection options investigated.  | Complete design and award tender                       |
| Mangaweka  |  |  |   | n/a  |
| Hunterville  | Implement network hydraulic modelling at Hunterville   |  |   | n/a  |
| Ratana   | Complete implementation of Ratana water upgrade  | Contract for treatment upgrade awarded to FilTech ( \$545k ) Tenders for reticulation works under review. Ordered Reservoir \$200k | Bore installed, water quality tested. Consultation undertaken with landowners, preliminary designs underway. Draft lease and easement documents prepared. | Commence physical works for WTP and reticulation works |
|  | Implement network hydraulic modelling at Ratana  |  |   | n/a  |
| Erewhon  |  |  |   | n/a  |
| Hunterville Rural  |  |  |   | n/a  |
| Omatane  |  |  |   | n/a  |

| Renewal Works: Reticulation and Treatment |   |   |   |   |
|---|---|---|---|---|
| Renewals for Reticulation and Treatment   | District Wide Budget \$2,718,914.00   |   |   |   |
| Marton                                    | Community apportionment \$1,058,934; Water Treatment Plant Upgrade, Tutaenui Rd Water main renewal, (Complete renewal of Marton water reticulation from Jeffersons Line to the new treatment plant) Wellington Rd renewal works. Grey st and Fergusson St watermain renewals. | Tutaenui Road WaterMain Renewal, (WTP - Jeffersons). Construction works completed. Grey St laterals to existing main underway. Wanganui Rd/Skerman valve installation. Ferguson St watermain renewal. | Tutaenui Road Watermain renewal , WTP -Jeffersons Line, scope revisited, re-tendered. Design and tender docs completed posted on tenderlink, tenders closed Friday 10th October. Tender Awarded (ID Loader \$692k). Works commenced 1/Dec 2014 Construction works underway. Horizontal boring completed. Trenching works completed.   | Complete construction of Marton (WTP-Jefferson) falling main renewal. |
| Taihape                                   | Community apportionment \$987,654; Dixon Way Investigation, Ruru Road stg II & III, Taihape main falling main renewal   | Taihape Falling Main Stg II, construction commenced. Ruru Road Stg III, physical works completed.   | Completed works: Gretna Corner - 200m of 225mm main complete, Eagle St - 335m of 150mm main complete. Kiwi Rd - 75m of 150mm main complete. Lark/Titi/Thrush - 110m of 150mm & 150m of 100mm, Ruru Road Stg II, Watermain renewals complete. Geotechnical investigations for main renewals in Ruru Road Stage 2 complete, Ruru Road Stg II construction underway. tendered in June, and the raw water falling main on the Williams property (report from Tonkin and Taylor received for review). Timing constraints for access to the Williams property will require deferment of physical pipe installation until January-March 2015. Gretna Corner contract complete - value \$123,548. Eagle Street physical work complete - value \$129,846. Ruru Road Stage 2 Watermain renewal went out to four invited tenderers, tenders closed 13th June, Eng est \$200K. Tender awarded to ID Loaders Ltd. for \$139,709.50. Work commenced 7th July. Ruru Road Stg III design has commenced. Stage 2 of the geotechnical investigation of the Taihape falling main is continuing. costs anticipated at \$30K. Site works are programmed to be carried out in Jan-Mar 2015 due to farm operation constraints. est \$437k. Ruru road Stg II completed. Ruru road Stg III completed. Taihape Falling Main renewal, horizontal boring works completed, trenching works 50% complete. | Complete construction of Taihape Stg II Falling Main                  |
| Bulls                                     | Community apportionment \$319,318   | Ferguson st new   |   | complete design and award tender                                      |
| Mangaweka                                 | Community apportionment \$27,524  |   |   | complete water renewal works  |
| Huntermville                              | Community apportionment \$29,541  |   |   | complete water renewal works  |
| Ratana                                    | Community apportionment \$48,183  |   |   | complete water renewal works  |
| Erehon                                    | Scheme apportionment \$109,000  |   |   | complete water renewal works  |
| Huntermville Rural                        | Scheme apportionment \$104,837  |   |   | complete water renewal works  |
| Omatane                                   | Scheme apportionment \$2,151  |   |   | complete water renewal works  |

**Water Projects 2014-15 Budget: \$3.9 million**

**Water Projects Budget Spend**



**2014/15 Year to Date**



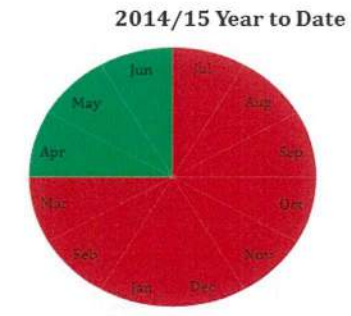
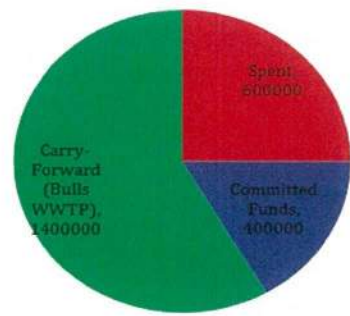
| Project   | Design/Scoping | Tender/Contract Docs | Under Construction | Complete |
|---|----------------|----------------------|--------------------|----------|
| Marton: Canteen St Watermain Link                   |                |                      |                    |          |
| Marton: Tutaenui Road, falling water main renewal   |                |                      |                    |          |
| Marton: Water Treatment Plant Upgrade               |                |                      |                    |          |
| Marton: Water Treatment reservoir levelling         |                |                      |                    |          |
| Marton: Hereford /Bredins Watermain link            |                |                      |                    |          |
| Marton: Dunsinane Pl/ Blenerville Cl Watermain link |                |                      |                    |          |
| Marton: Grey St/Ferguson St renewals                |                |                      |                    |          |
| Marton: Wanganui Rd/Skerman                         |                |                      |                    |          |
| Taihape: Falling Main Renewal                       |                |                      |                    |          |
| Taihape: Ruru Road Watermain Stg II                 |                |                      |                    |          |
| Taihape: Ruru Road Watermain renewal Stg III        |                |                      |                    |          |
| Taihape: Dixon Way Pressure investigation           |                |                      |                    |          |
| Bulls: Water supply facility (& caravan dump site)  |                |                      |                    |          |
| Ratana: Water Treatment Plant upgrade               |                |                      |                    |          |

| Performance measures in LTP/Annual Plan  |  |   |   |  |
|--|--|---|---|--|
| What are they:   | Targets  | Progress for this reporting period  | Progress to date for this year  | Work planned for next three months   |
| Provide a reliable reticulated disposal system that does not cause harm or create pollution within the existing urban areas  | 100% compliance at Marton WWTP. (Bulls, Hunterville, Mangaweka, Hunterville and Taihape WWTP continue 100% compliant)                          | Ratana, Mangaweka compliant. Marton non-compliant due to ammoniacal nitrogen. Taihape non-compliant due to flow. Bulls consent expired; currently being renewed. Koitiata non-compliant due to irrigation, and inflow meter verification. Hunterville non-compliant due to lack of gauging site, issues with frequency of emergency discharges. | Ratana, Mangaweka compliant. Marton non-compliant due to ammoniacal nitrogen. Taihape non-compliant due to flow. Bulls consent expired; currently being renewed. Koitiata non-compliant due to irrigation, and inflow meter verification. Hunterville non-compliant due to lack of gauging site, issues with frequency of emergency discharges. | Continue implementation of Water Outlook to assist with compliance monitoring. Continue to work through solutions for Marton, Taihape and Koitiata with Horizons Regional Council. Continue consent renewal process for Bulls. Complete upgrade of Taihape WWPS. Hunterville gauging site to be installed in stream and emergency discharges to be investigated. |
|  | No single network to experience more than 2 overflows during a 12 month period. Response/resolution time monitored and compared with benchmark | Achieved. No overflows within reporting period.   | Achieved. Two overflows in Marton and one overflow in Taihape within reporting period.  |  |
|  | Less than 1 blockage per 13.625Km in Council's reticulated system (the total reticulation length is 109 km).                                   | Achieved. No blockage within reporting period.  | Not Achieved. 12 blockages total within reporting period.   |  |
| New Mandatory Benchmark Measures   |  |   |   |  |
| What are they:   | Targets  | Progress for this reporting period  | Progress to date for this year  | Work planned for next three months   |
| System and Adequacy:<br>The number of dry weather sewerage overflows from the territorial authority's sewerage system, expressed per 1000 sewerage connections to that sewerage system.  | 0/1000   | 0/1000  | 0.2/1000  |  |
| Discharge Compliance:<br>Compliance with the territorial authority's resource consents for discharge from its sewerage system measured by the number of:<br>(a) abatement notices<br>(b) infringement notices<br>(c) enforcement orders, and<br>(d) convictions, received by the territorial authority in relation those resource consents.  | None received within reporting period.   | None received within reporting period.  | None received within reporting period.  | Ongoing work to ensure compliance with consents, as above.   |
|  | None received within reporting period.   | None received within reporting period.  | None received within reporting period.  | Ongoing work to ensure compliance with consents, as above.   |
|  | None received within reporting period.   | None received within reporting period.  | None received within reporting period.  | Ongoing work to ensure compliance with consents, as above.   |
|  | None received within reporting period.   | None received within reporting period.  | None received within reporting period.  | Ongoing work to ensure compliance with consents, as above.   |
| Fault Response Times:<br>Where the territorial authority attends to sewerage overflows resulting from a blockage or other fault in the territorial authority's sewerage system, the following median response times measured:<br>(a) attendance time: from the time that the territorial authority receives notification to the time that service personnel reach the site, and<br>(b) resolution time: from the time that the territorial authority receives notification to the time that service personnel confirm resolution of the fault or interruption. | None received within reporting period.   | None received within reporting period.  | Three RFS's received and responded to on time.  |  |
|  | None received within reporting period.   | None received within reporting period.  | Three RFS's received and completed on time.   |  |
| Customer Satisfaction<br>The total number of complaints received by the territorial authority about any of the following:<br>(a) sewage odour<br>(b) sewerage system faults<br>(c) sewerage system blockages, and<br>(d) the territorial authority's response to issues with its sewerage system, expressed per 1000 connections to the territorial authority's sewerage system.   | a) 0/1000  | a) 0/1000   | a) 0.9/1000   |  |
|  | b) 0/1000  | b) 0/1000   | b) 0.7/1000   |  |
|  | c) 0/1000  | c) 0/1000   | c) 3/1000   |  |
|  | Not determined   | Not determined  | Not determined  | Review RFS system to enable tracking of customer complaints around response.   |
| Requests for Service   |  |   |   |  |
| What are they:   | Completed on time  | Completed late  | Overdue   |  |
| Waste  |  |   |   |  |
| Wastewater blocked drain   | 0  | 0   | 0   | Consolidate with DIA measures above to avoid repetition.   |
| Wastewater leak  | 0  | 0   | 0   |  |
| Other Levels of Service  |  |   |   |  |
| What are they:   | Targets  | Progress for this reporting period  | Progress to date for this year  | Work planned for next three months   |
| None   |  |   |   |  |



| SEWERAGE AND THE TREATMENT AND DISPOSAL OF SEWAGE GROUP OF ACTIVITIES 2014/15 |   |  | Mar-15  |  |
|---|---|--|---|--|
| Major programmes of work  |   |  |   |  |
| Capital works: Reticulation and Treatment                                     | Targets   | Progress for this reporting period   | Progress to date for this year  | Work planned for next three months   |
| Capital Works: Wastewater reticulation, treatment and disposal activity       | Develop proposals (including activity/asset management plan) for inclusion in draft 2015.25 Long Term Plan                    | See sewage supply activity report  |   | n/a  |
| Taihape   | Network modelling at Taihape to identify capacity problems in conjunction with renewal programmes                             | See sewage supply activity report  |   | n/a  |
|   |   | Kaka Road Water leak investigation and sewer repair  | Investigate leak, CCTV sewer line, slip line old sewer line and repair  | Complete repair works  |
|   | Waste Water Pump Station: install new Waste water pump station.   | Pump station facility and compound physical works completed. Cut-ins to mains completed.   | Wastewater pump station, wetwell facility, pumping units and shed and security compound all completed. Resource consent applied to horizons for temp storage facility.  | Complete construction works for Taihape Pump Station upgrade.                      |
| Bulls   | Waste water Treatment plant upgrade (improvement of Bulls treatment plant to meet water quality standards), Caravan dump site | Pre application public consultation being undertaken. Bulls dump site preferred site on Domain Road.                                   | Data capture for the purposes of the resource consent. Draft AEE and consent prepared for review. Consent application completed and applied to horizons for BWWTP. Caravan dump site scoped site, and service options. The resource consent application is currently being prepared and is completed. Staff have met with lwi on site to discuss land passage and outfall structure options. Caravan dump site investigation being scoped, existing service connection options investigated | Complete scoping works and formalise application to horizons for resource consent. |
|   | Infiltration inflow study (to reduce stormwater overload of the wastewater system) completed for Bulls                        | See sewage supply activity report  |   | n/a  |
|   | Network modelling at Bulls to identify capacity problems in conjunction with renewal programmes                               | See sewage supply activity report  |   | n/a  |
| Marton  | Improvement of Marton treatment plant to meet nitrogen standard   | See sewage supply activity report  |   | n/a  |
| Ratana  |   |  |   | n/a  |
| Renewal Works: Reticulation and Treatment                                     | Targets   | Progress for this reporting period   | Progress to date for this year  | Work planned for next three months   |
| Renewals for Reticulation and Treatment                                       | District Wide Budget \$1,059,794.00   |  |   |  |
| Marton  | Community apportionment \$205,739; Goldings line sewage renewal,  | Commenced I & I investigation of Goldings line sewage infiltration. Investigated alternative tech solutions for pipeline renewal works | Goldings Line renewal alignment and scope being investigated.   | Complete design and award contract for Goldings Line renewal works                 |
| Taihape   | Community apportionment \$79,013; Mataroa rd, Huia st/Gumboot reserve   |  | Identified projects and investigated suitable renewal alternatives  | Complete renewal works.  |
| Bulls   | Community apportionment \$632,999   | See sewage dump site facility  |   | complete installation of dump facility   |
| Mangaweka   | Community apportionment \$94,421  |  |   | Complete renewal works.  |
| Hunterville   | Community apportionment \$23,811  | Ongo Road CCTV   |   | Complete renewal works.  |
| Ratana  | Community apportionment \$23,811  |  |   | Complete renewal works.  |
| Koitiata  |   |  |   | Complete renewal works.  |

Wastewater Projects 2014-15 Budget: \$2.4 million



| Project  | Design/Scoping | Tender/Contract Docs | Under Construction | Complete |
|--|----------------|----------------------|--------------------|----------|
| Marton: Goldings Line Sewer line renewal             |                |                      |                    |          |
| Taihape: Huia St/ Gumboot reserve                    |                |                      |                    |          |
| Taihape: Pump Station renewal rising main            |                |                      |                    |          |
| Taihape: Pump Station compound building              |                |                      |                    |          |
| Taihape: Mataroa St renewal                          |                |                      |                    |          |
| Taihape: 55 Kaka Rd renewal                          |                |                      |                    |          |
| Bulls: Wastewater Treatment upgrade (physical works) |                |                      |                    |          |
| Bulls Wastewater Treatment upgrade (consent)         |                |                      |                    |          |
| Bulls: Caravan Dump Site (& water supply facility)   |                |                      |                    |          |
| Bulls: Hammond St renewal                            |                |                      |                    |          |
| Hunterville: Ongo Rd renewal                         |                |                      |                    |          |

| STORMWATER GROUP OF ACTIVITIES 2014/15   |  |                                     | Mar-15   |  |
|--|--|-------------------------------------|--|--|
| <b>Performance measures in LTP/Annual Plan</b>   |  |                                     |  |  |
| What are they:   | Targets  | Progress for this reporting period  | Progress to date for this year                 | Work planned for next three months   |
| Provide a reliable collection and disposal system to each property during normal rainfall  | In each event of 1 in 20 year storm, no more than 20 dwellings affected for more than 24 hours | None received this reporting period | None received this reporting period            |  |
|  | 60% responded within time and 60% resolved within time, 100% resolved                          | None received this reporting period | None received this reporting period            |  |
| <b>New Mandatory Benchmark Measures</b>  |  |                                     |  |  |
| What are they:   | Targets  | Progress for this reporting period  | Progress to date for this year                 | Work planned for next three months   |
| System Adequacy<br>(a) The number of flooding events that occur in a territorial authority district.<br>(b) For each flooding event, the number of habitable floors affected. (Expressed per 1000 properties connected to the territorial authority's stormwater system.)  | Targets to be set as part of the 2015-25 LTP   | None received this reporting period | Three received this reporting period           |  |
|  | Targets to be set as part of the 2015-25 LTP   | None received this reporting period | Surface road flooding - no properties affected |  |
| Discharge Compliance :<br>Compliance with the territorial authority's resource consents for discharge from its stormwater system, measured by the number of:<br>(a) abatement notices<br>(b) infringement notices<br>(c) enforcement orders, and<br>(d) convictions,<br>received by the territorial authority in relation those resource consents. | Targets to be set as part of the 2015-25 LTP   | N/A                                 | N/A  | Continue collecting baseline data for Marton stormwater to determine whether consent required. |
|  | Targets to be set as part of the 2015-25 LTP   | N/A                                 | N/A  | Continue collecting baseline data for Marton stormwater to determine whether consent required. |
|  | Targets to be set as part of the 2015-25 LTP   | N/A                                 | N/A  | Continue collecting baseline data for Marton stormwater to determine whether consent required. |
|  | Targets to be set as part of the 2015-25 LTP   | N/A                                 | N/A  | Continue collecting baseline data for Marton stormwater to determine whether consent required. |
| Response Times:<br>The median response time to attend a flooding event, measured from the time that the territorial authority receives notification to the time that service personnel reach the site.   | Targets to be set as part of the 2015-25 LTP   | None received this reporting period | Three received and responded to on time        |  |
| Customer Satisfaction:<br>The number of complaints received by a territorial authority about the performance of its stormwater system, expressed per 1000 properties connected to the territorial authority's stormwater system.   | Targets to be set as part of the 2015-25 LTP   | 0/1000                              | 2.1/1000                                       |  |
| <b>Requests for Service</b>  |  |                                     |  |  |
| What are they:   | Completed on time  | Completed late                      | Overdue  |  |
| <b>Stormwater</b>  |  |                                     |  |  |
| Stormwater blocked drain (non urgent)  | 0  | 0                                   | 0  |  |
| Stormwater blocked drain (urgent)  | 0  | 0                                   | 0  |  |
| <b>Other Levels of Service</b>   |  |                                     |  |  |
| What are they:   | Targets  | Progress for this reporting period  | Progress to date for this year                 | Work planned for next three months   |
| None   |  |                                     |  |  |

STORMWATER GROUP OF ACTIVITIES 2014/15

Mar-15

Major programmes of work outlined in the LTP/Annual Plan

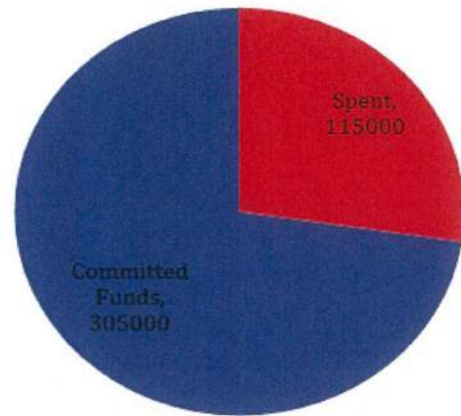
| What are they: | Targets  | Progress for this reporting period    | Progress to date for this year | Work planned for next three months |
|----------------|--|---------------------------------------|--------------------------------|------------------------------------|
|                | Continue CCTV condition assessment programme   | See Stormwater supply activity report |                                | n/a                                |
|                | Review system design parameters  | See Stormwater supply activity report |                                | n/a                                |
|                | Review network replacement programme for all assets exceeding threshold risk of 10/25                      | See Stormwater supply activity report |                                | n/a                                |
|                | Education programme on the responsibilities of relevant parties  | See Stormwater supply activity report |                                | n/a                                |
|                | Resolve uncertainty over responsibility for Council's stormwater drainage network in urban areas           | See Stormwater supply activity report |                                | n/a                                |
|                | Develop proposals (including activity/asset management plan) for inclusion in draft 2015.25 Long Term Plan | See Stormwater supply activity report |                                | n/a                                |

Other programmes of work identified in e.g. activity management plan/major contracts

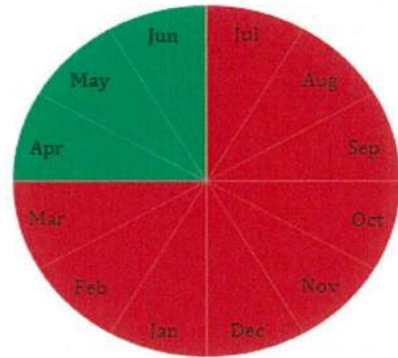
| What are they:       | Targets  | Progress for this reporting period   | Progress to date for this year   | Work planned for next three months                                    |
|----------------------|--|--|--|---|
| <b>Capital works</b> | Marton: Russell St/Wellington Road new works                                   | Russell St: Brief to Opus to complete detailed design of S/W solution. Option 3 direct connection to Tutaenui Stream is preferred option. Existing alignment through Childcare centre cleaned and currently working adequately. Investigation works has identified limited options for alignment. Revisited drilling option direct to Tutaenui Stream. Design Completed contract docs prepared for tender. | Scoping and design options finalised   | Complete design works and award tender for outlet to Tutaenui stream. |
|                      | Bulls  |  |  | n/a   |
|                      | Taihape  |  |  | n/a   |
|                      | Ratana   |  |  | n/a   |
| <b>Renewals</b>      | <b>District Wide Budget \$372,137.00</b>                                       |  |  | n/a   |
| Marton               | Community apportionment \$268,105; Hammond St, Main/Potaka St, Skerman/Bond St | Hammond St outlet design completed Resource consent applied for. Main/Potaka complete. Skerman/Bond physical works completed   | Hammond St s/w outlet design completed resource consent to horizons applied for Works complete: Main/Potaka, Skerman /bond | Complete installation of Hammond St S/W outlet to Tutaenui Stream.    |
| Taihape              | Community apportionment \$31,456; Huia st                                      | Huia Street has been investigated. An overflow weir in the stormwater system has been found to be too low, thereby allowing overflow into the sewer system before full stormwater capacity has been achieved. A more practical weir design is under way.   | Huia Street has had CCTV investigation with no obvious issues found other than weir design problem.                        | Complete replacement of Huia St Weir                                  |
| Rural                | Community apportionment \$32,919   |  |  | Intentionally left blank  |
| Bulls                | Community apportionment \$14,510; High St/ Wilson St                           | Project identified preliminary design undertaken   | Project underway   | Complete culvert works for High St/Wilson St.                         |
| Mangaweka            | Community apportionment \$8,259  |  |  | Intentionally left blank  |
| Huntermville         | Community apportionment \$10,898   |  |  | Intentionally left blank  |
| Ratana               | Community apportionment \$5,990  |  |  | Intentionally left blank  |

|  |  |                                       |  |                          |
|--|--|---------------------------------------|--|--------------------------|
| Capital works for new culverts and drains and inlet protection | <b>District Wide Budget \$172,808.00</b> | See Stormwater supply activity report |  | n/a                      |
| Marton   | Community apportionment \$31,067         |                                       |  | Intentionally left blank |
| Taihape  | Community apportionment \$39,739         |                                       |  | Intentionally left blank |
| Rural  | Community apportionment \$49,378         |                                       |  | Intentionally left blank |
| Bulls  | Community apportionment \$9,000          |                                       |  | Intentionally left blank |
| Mangaweka  | Community apportionment \$10,010         |                                       |  | Intentionally left blank |
| Hunterville  | Community apportionment \$16,876         |                                       |  | Intentionally left blank |
| Ratana   | Community apportionment \$16,738         |                                       |  | Intentionally left blank |

**Stormwater Projects 2014-15 Budget: \$420000**



**2014/15 Year to Date**



| Project  | Design/Scoping | Tender/Contract Docs | Under Construction | Complete |
|--|----------------|----------------------|--------------------|----------|
| Marton: Russell/Wellington Road Stormwater upgrade |                |                      |                    |          |
| Marton: Hammond St Stormwater outlet upgrade       |                |                      |                    |          |
| Marton: WTP levelling & Drainage                   |                |                      |                    |          |
| Taihape: Skerman St/ Bond St Stormwater renewal    |                |                      |                    |          |
| Marton: Main/Potaka Stormwater inlet               |                |                      |                    |          |
| Bulls: High St/ Wilson St Stormwater renewal       |                |                      |                    |          |

COMMUNITY AND LEISURE ASSETS GROUP OF ACTIVITIES 2014/15

Mar-15

| Performance measures in LTP/Annual Plan  |   |   |                                |                                    |
|--|---|---|--------------------------------|------------------------------------|
| What are they:   | Targets   | Progress for this reporting period  | Progress to date for this year | Work planned for next three months |
| Provide a "good enough" range of community and leisure assets at an appropriate proximity to centres of population | Progressive improvement in provision and maintenance of the Library service: A greater proportion (benchmark = 15%) of the sample believe that Council's service is getting better        | Survey undertaken during Feb/Mar for reporting during the Annual Planning Process |                                |                                    |
|  | Progressive improvement in provision and maintenance of the swimming pools: A greater proportion (benchmark = 22%) of the sample believe that Council's service is getting better         | Survey undertaken during Feb/Mar for reporting during the Annual Planning Process |                                |                                    |
|  | Progressive improvement in provision and maintenance of the sports fields and parks: A greater proportion (benchmark = 5%) of the sample believe that Council's service is getting better | Survey undertaken during Feb/Mar for reporting during the Annual Planning Process |                                |                                    |
|  | Progressive improvement in provision and maintenance of public toilets: A greater proportion (benchmark = 5%) of the sample believe that Council's service is getting better              | Survey undertaken during Feb/Mar for reporting during the Annual Planning Process |                                |                                    |
|  | Progressive improvement in provision and maintenance of community buildings: A greater proportion (benchmark = 5%) of the sample believe that Council's service is getting better         | Survey undertaken during Feb/Mar for reporting during the Annual Planning Process |                                |                                    |
|  | Progressive improvement in provision and maintenance of community housing: A greater proportion (benchmark = 3%) of the sample believe that Council's service is getting better           | Survey undertaken during Feb/Mar for reporting during the Annual Planning Process |                                |                                    |

| Requests for Service                   |                   |                |         |  |
|--|-------------------|----------------|---------|--|
| What are they:                         | Completed on time | Completed late | Overdue |  |
| <b>Cemeteries</b>                      | 0                 | 0              | 0       |  |
| Cemetery maintenance                   | 0                 | 0              | 0       |  |
| <b>Council Housing/Property</b>        | 0                 | 0              | 0       |  |
| Maintenance (Council housing/property) | 0                 | 0              | 0       |  |
| <b>Graffiti/Vandalism</b>              | 0                 | 0              | 0       |  |
| Graffiti/Vandalism                     | 0                 | 0              | 0       |  |
| <b>Halls</b>                           | 0                 | 0              | 0       |  |
| Maintenance (halls)                    | 0                 | 0              | 0       |  |
| <b>Street Cleaning</b>                 | 0                 | 0              | 0       |  |
| Street litter bins/maintenance         | 0                 | 0              | 0       |  |
| <b>Parks and Reserves</b>              | 0                 | 0              | 0       |  |
| Maintenance (parks and reserves)       | 0                 | 0              | 0       |  |
| Playground equipment                   | 0                 | 0              | 0       |  |
| <b>Public Toilets</b>                  | 0                 | 0              | 0       |  |
| Cleaning (public toilets)              | 0                 | 0              | 0       |  |
| Maintenance (public toilets)           | 0                 | 0              | 0       |  |

| Other Levels of Service  |   |  |  |   |
|--|---|--|--|---|
| What are they:   | Targets   | Progress for this reporting period   | Progress to date for this year   | Work planned for next three months  |
| An accessible, affordable, well maintained and pleasant range of community and leisure assets that provide for the cultural and social well-being of communities | 60% of residents will have an open space available within 1.5 Km of their dwelling  | Council staff assisted with weeding the Hunterville community Library and stock. A meeting was held between representatives from Hunterville School, RDC, National Library School Service, and Hunterville Community Library Committee to discuss the proposal to relocate the library to the school. The relocation is scheduled for Tues 17 March. | Council has indicated its intention over the next 10 years or so to rationalise its community and leisure assets. It anticipates that over the course of the next decade it will have fewer, better community assets. A draft Collection Development Policy, including e-resources, is almost finalised. The District Librarian has been interviewed as part of the first stage of Council's Information Systems/Technology Review. Hunterville School has requested permission for them (the school) to build and pay (they are not seeking financial contribution from the Council) for a 1.1km fitness track at the Hunterville Domain for use by the Community. Hunterville Community Committee was in favour of the proposed fitness trail by Hunterville School, providing it complies with Council requirements. Final details are still being discussed. Centennial Park cricket outfield has been dethatched and swept, and hollow tined. Flat weed spraying was carried out on the fields at Bulls and Hunterville Domains. Staff from Hutt City Council assisted with the strategic review of the swim centres, and visited all three on 29 September. The Hunterville Community Committee agreed that the library be relocated to the School. Review of the present Parks & Town Contract specifications has commenced. On track with options for the swim centres and community housing as part of the draft LTP consultations. | Review of Reserves register and associated licences to occupy.  |
|  | A specialised sports field for every major sporting code within the Rangitikei District   |  |  | Review of the Parks and Town Contract specifications. Present contract finishes 31 July 2015.   |
|  | 60% of residents will have a community building available within 1.5 Km of their dwelling   |  |  | Preparation of service agreements for Council owned Rural Halls. Consideration of Town Hall facilities as part of the Town Centre planning at Bulls, Marton and Taihape.  |
|  | Pool-safe accredited pools in Marton and Taihape, with affordable access to the pool in   |  |  | Strategic review of all three swim centres as part of the 2015/25 LTP process.  |
|  | Library provision in Marton, Taihape and Bulls + community libraries in Hunterville, Mangaweka and Kawhatau   |  |  | Finalisation of Collection development Policy. Current subscription databases will be reviewed. Evaluate other potential additions. Investigate options for the library website; Implement self-service for checking out of materials; Investigate options for touch screens for provision of information; Investigate options for self service payments for council services, photocopying and printing; |
|  | Safe and comfortable Community Housing, with additional support services from Age Concern (cost \$1 per week/per unit), within Bulls, Taihape, Marton and Ratana at no less than 1: 60 population |  |  | Age Concern continue to visit the tenants in the southern part of the district, and Older & Bolder in the North. This contract has expired, and renewal will be considered as part of the review of the management of community housing.  |
|  | A safe, clean public toilet within 100 m radius of CBD  |  |  |   |

COMMUNITY AND LEISURE ASSETS GROUP OF ACTIVITIES 2014/15

Mar-15

| Major programmes of work outlined in the LTP/Annual Plan |   |   |  | Progress to date for this year  |
|--|---|---|--|---|
| What are they:   | Targets   | Progress for this reporting period  | Work planned for next three months   | Progress to date for this year  |
| Community and Leisure Group activity                     | Develop proposals (including activity/asset management plan) for inclusion in draft 2015.25 Long Term Plan  | On track.   | Will be implemented into the draft LTP by mid December.  |   |
| Parks and open spaces activity                           | Work with the community to develop and consult upon detailed implementation plans and budgets for a regional sports development plan.   | Lottery funding application was successful, and tenders have been called to refurbish Shelton Pavilion. Priorities are being finalised with the Centennial Park Steering Group.   | Funding application to be submitted to Powerco Trust for final funding to refurbish Shelton Pavilion.  | Applications for funding submitted to Lottery Community Facilities Fund and Whanganui Community Foundation to refurbish Shelton Pavilion. Asset Management Planning for LTP in process to develop the parks identified. Meeting with Sport Wanganui Chief Executive confirmed that the scope of Council's involvement in the regional sports development plan is to progressively develop the facilities on Memorial Park, Taihape, Centennial and Marton Parks in Marton and Bulls Domain.   |
|  | Progress Urban Parks and Reserve Management Planning, including<br>*Implementation of agreed Bulls Domain management plan;<br>*Alternative access, use of buildings, upgrading playground facilities, developing paths/trails and provision of permanent power on Wilson Park, Marton;<br>*Liaison with Clubs Taihape over the projected community leisure hub on Taihape Memorial Park | The playground development proposal for Wilson Park, as per the Playground Centre quotation, will be highlighted in the 2015/25 LTP Consultation Document (along with the proposed upgrades to the district's skate parks). | Meet with users of Wilson Park to discuss use of buildings. Liaison with Clubs Taihape is expected to be considered as part of the Taihape Town Centre Plan, along with upgrade development plans for Memorial Park. Investigate paths/trails at Bulls, Hunterville and Taihape Domains and Wilson Park. | Marton Community Committee have painted and are installing stepping poles at Wilson Park. Onsite meeting has been held with Anne George (Country Music Festival) and personnel from Alf Downs regarding permanent power supply at Wilson Park. Awaiting quotes for this work. Meetings have been held with some users of Wilson Park. Further meetings to be arranged. Separate report prepared for November Assets/Infrastructure Committee. Stage 1 of the upgrade for the permanent power supply at Wilson park has been implemented.  |
|  | Upgrade internal shower/ablution block at the Koitiata campground.  | Project was completed in November 2014.   | Completed  | Work has commenced on converting the showers to coin operated facilities. Plumbing work has been completed. Coin operated showers are now functional. Paint has been purchased for interior painting. Koitiata Community Committee members and volunteers will action the painting.   |
|  | Install off-road parking bay at Gumboot Park (Mataroa Road, Taihape) and upgrade the two footbridges there.   | The work will commence in Mid April.  | Implement Parking Bay; Investigate options for footbridges.  | A design has been drawn up for a parking bay that will be sufficient for two 12m buses. The Taihape Community Board have approved the suggested proposal for the parking bay and tenders will now be called for this work.  |
| Community Halls and Buildings activity                   | Implementation of agreed earthquake-strengthening & undertaking further evaluations in response to government requirements (when announced).  | Nothing to report   |  |   |
|  | Exterior maintenance and painting of the gaol on the old Bulls courthouse site.   | Quotes have been received from McIlwaines Building Solutions and are within budget. No work start date has been agreed yet.   | Exterior renovation and painting to occur.   | An initial meeting has been held with Bulls & District Community Trust, and Museum representatives. Bulls Community Committee members expressed concern about the possible cost of the project and have asked for detailed estimate before any maintenance was commenced. This project would appear to be more complex than envisaged (and potentially more costly than the budget provision). Council's building officers went on-site and agree with the existing conservation plan but warn that once the roof cladding has been removed, along with the damaged weatherboards, that there may well be water damage to the overall structure which would then need to be replaced if not up to standard. The officers advised that the materials used to match the heritage look of the building could be likely to increase the renovation price of this project. McIlwaines Building Solutions have been asked to provide an estimate of costs. On-site meeting held with McIlwaines on 5 February. Suggested work/preservation programme to be presented by mid-February. |
| Library activity   | Wholesale review of information technology needs of the community taking into account APNK, Marton and surrounds ICT Hub and new e-services (e.g. e-books, Kete).   | Library website upgrade is being included as part of the Council website upgrade.   | Current subscription databases will be reviewed. Evaluate other potential additions. Investigate options for the library website; Investigate options for touch screens for provision of information.  | Partaking in the greater (including the Library service) Council Information and Technology review in the first instance.   |
| Community Housing activity                               | Research alternative management arrangements for community housing.   | On track for inclusion in the draft 2015/25 LTP   | Options to be identified for 2015/25 draft LTP.  | Staff gathered information to assist with the consideration of a Trust managing the community housing operation. Representatives from Manawatu Community Trust visited all of our Community Housing complexes and will be presenting to the 16 October meeting. A report on the options for the on-going delivery of community housing services, including the provision of community housing via an independent community trust, was presented to the Council meeting of 27 November.  |

| Other programmes of work identified in e.g. activity management plan / major contracts |   |   |  |  |
|--|---|---|--|--|
| What are they:   | Targets   | Progress for this reporting period  | Work planned for next three months   | Progress to date for this year   |
| <b>Renewals</b>  |   |   |  |  |
| Swimming Pools   | Pump and DE filter replacements in Marton and Taihape. Poolside resurfacing in Taihape. Ventilating fans Taihape. | Council representatives met with TCDT, and are waiting for the TCDT Chair to report back to the Chief Executive as to what they consider the priorities are. Work will be carried out at Marton Swim Centre when it closes for the season. The Taihape pool closed at the end of March, Marton will close Easter weekend. | Strategic review of all three swim centres as part of the 2015/25 LTP process.   | On track. Marton pump has been purchased and will be installed when the DE filters are due for changing. Marton Swim centre opened on 27 September and Taihape Swim Centre opened on 3 November.                           |
| Libraries  | Upgrade of PCs, tables, chairs and display shelving. Library Book purchases                                       | On track. 63% of the book budget has been spent. Self service machines have been purchased and we are awaiting installation.  | Installation and implementation of self service machines.  | Aotearoa Peoples Network public computers have been replaced/installed; Nine at Marton and Taihape and four in Bulls.  |
| Community Housing  | \$25K for interior/exterior upgrades.   | One shower unit has been re-lined in Taihape. Quotes for painting and flooring at Marton and Bulls units have been sought.  | 1 x Russell Street, Marton, and 1 x Hammond Street, Bulls, units are having interior painting carried out in March. Flooring and an oven will also be replaced at a Russell Street unit. | New carpet and vinyl has been installed in one Taihape unit. Kitchen area in one Ratana unit has been painted.   |
| Cemeteries   | \$15K available   | Some roadway renewal was undertaken in March at Taihape cemetery.   | Seeking prices for concrete seating pads.  |  |
| Parks and Reserves   | Centennial Park renovations   | Lottery funding application was successful. Tenders have been invited from local contractors.   |  | An application has been submitted to the Community Facilities Fund to upgrade Centennial Park Shelton Pavilion to modern day building code standards and to renew the kitchen and changing facilities has been submitted.  |
| Toilets  | No renewal budget   |   |  |  |
| Halls  | Ratana Clinic Interior Repaint<br>Huntermville Hall Re-roofing<br>Koitiata Joinery<br>Exterior Paint Omatane      | Re-roofing of the Huntermville Town Hall was completed. Painting at the Ratana Clinic has been completed.   | Complete identified projects.  | Order has been raised for new roof at Huntermville. Audits are being undertaken on rural halls for the Dudding grant project (and Council programmed maintenance).   |
| <b>Capital</b>   |   |   |  |  |
| Swimming Pools   | Car-park extension etc. at the Taihape Pool   | Due to the strategic review of the swim centres, and the proposed consideration of the Memorial Park facilities as part of the Taihape Town Centre Plan, this development has been placed on hold. Instead remedial repairs only have been carried out.   | Plan developed and presented to Taihape Community Board. Consideration of playground in close proximity.   | Onsite meeting has been held to discuss options. Infrastructure providing input. Plan was developed, presented, and approved by the Taihape Community Board at their November meeting.                                     |
| Parks and Reserves   | Mangaweka campground sewerage disposal  | Some minor works were carried out prior to the peak season. The Infrastructure team determined that the present system was adequate for the current demand (with the septic tank to be emptied twice during the summer holiday break) and no further work will be undertaken on this project.                             | Project completed.   | Initial discussions have been held with Infrastructure, who will supply technical input. Consideration is being given as to whether an alternative option is to empty the septic tank system twice during the peak season. |
| Library - first time borrowing   |   | March 7100 (7715 March 2014)  |  | Total First Time Issues 2014 : 89406 (2013 = 88876)<br>February 6451 (6582 Feb 2014)   |



RUBBISH AND RECYCLING GROUP OF ACTIVITIES 2014/15

Mar-15

**Performance measures in LTP/Annual Plan**

| What are they:   | Targets  | Progress for this reporting period                                   | Progress to date for this year              | Work planned for next three months  |
|--|--|--|---|---|
| Make recycling facilities available at waste transfer stations for glass, paper, metal, plastics, and textiles and e-Waste | 5,200 tonnes to landfill                       | 352 Tonnes waste to landfill. Combined total for year of 3541 Tonnes | Waste to landfill 68% of Target (9th month) | General maintenance carried out at WTSs   |
| Extend recycling facilities to include green waste facility at Taihape, waste transfer stations                            | Percentage of waste diverted from landfill 11% | Diversion 17.10%   | 13.3% for the year thus far                 | Feasibility study to be undertaken before green waste received at Taihape WTS- Greenwaste for Taihape looks unlikely due to high transport costs. |

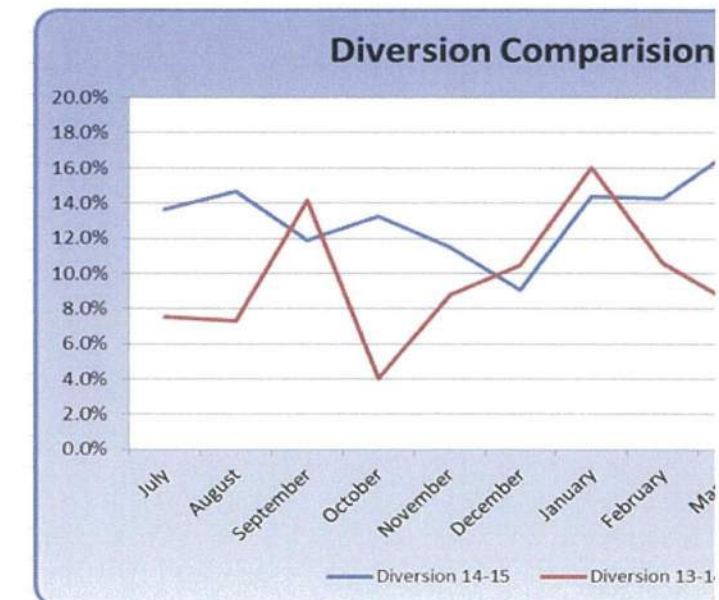
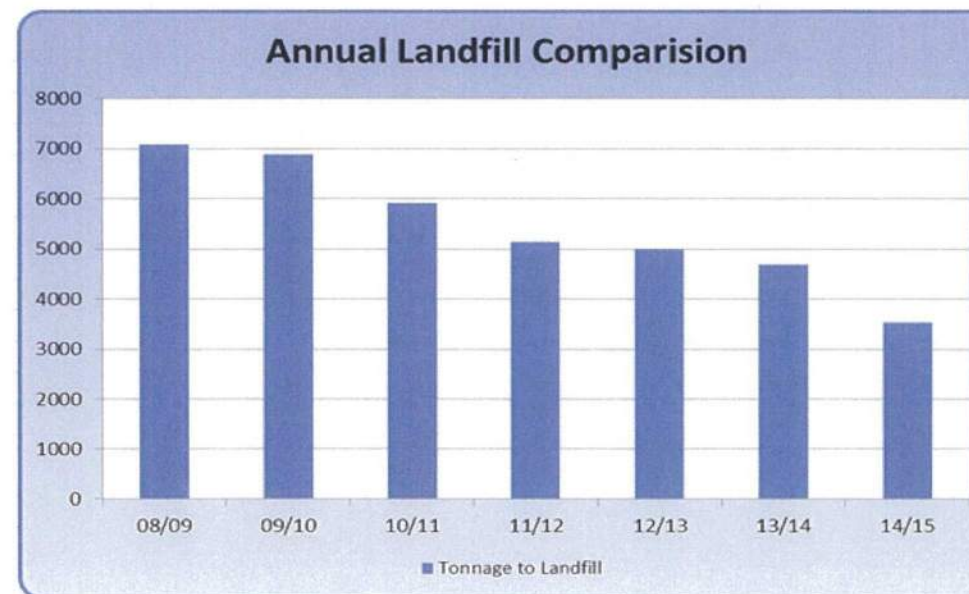
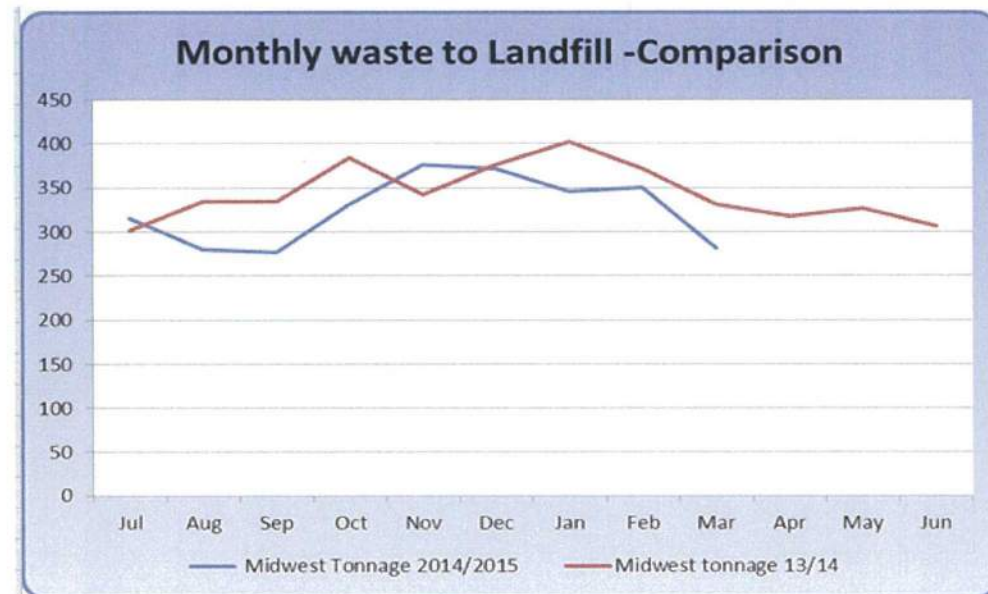
**Requests for Service**

| What are they:               | Completed on time | Completed late | Overdue |  |
|------------------------------|-------------------|----------------|---------|--|
| No receipt given Taihape WTS | 1                 |                | 1       | 0 Attendants to carry receipt books at all times |
|                              | 0                 |                | 1       | 1 Ensure effective communication by contractor   |

**Other Levels of Service**

| What are they:   | Targets   | Progress for this reporting period | Progress to date for this year | Work planned for next three months   |
|--|---|------------------------------------|--------------------------------|--|
| Efficient, affordable and convenient access to waste disposal services that can accept a range of different waste streams. | Provide waste transfer stations under contract at Bulls, Marton, Ratana, Taihape, Hunterville and Mangaweka | Targets Met                        | Targets Met                    | Continue with infrastructure build for paper and card acceptance at Taihape WTS. |

| Major programmes of work outlined in the LTP/Annual Plan                               |   |  |   |   |
|--|---|--|---|---|
| What are they:   | Targets   | Progress for this reporting period               | Progress to date for this year  | Work planned for next three months                            |
| Waste minimisation activity  | Scoped green waste scheme up and running  | No change over December period                   | Green waste acceptance in Bulls and Marton                                    | Greenwaste acceptance looks unlikely at this stage            |
| Education in schools   | Number of schools that have received zero waste education in Rangitikei district. | No education programmes recorded for March       | Three schools received programme Marton Junction, Moawhango, Papanui Junction | Continue to assist Horizons in promotion of Enviroschools     |
| Other programmes of work identified in e.g. activity management plan / major contracts |   |  |   |   |
| What are they:   | Targets   | Progress for this reporting period               | Progress to date for this year  | Work planned for next three months                            |
| Taihape to have paper and cardboard recycling  | By 3rd quarter have infrastructure in place                                       | Platform almost finished, chassis work under way | Steel fabrication of shipping container conversions underway                  | Finish shipping container refit for hook bin movements of P&C |



# Attachment 3



# MEMORANDUM

TO: Assets/Infrastructure Committee  
FROM: Samantha Whitcombe  
DATE: 1 April 2015  
SUBJECT: **Queries Raised at Previous Meeting**  
FILE: 3-CT-13-4

---

## **1 Summary**

1.1 At its meeting on 12 March 2015, the Committee raised several queries to be answered at the next meeting.

## **2 Roading & Footpaths Group of Activities**

*Wylies Bridge replacement project plan and access:*

- 2.1 Wanganui District Council is taking the lead in this project. Tenders for the replacement structure closed in September 2014. Four tender submissions were received. Included within the submissions were two “alternative” bids which incorporated amendments to a number of NZTA standard requirements. The alternative bids were assessed against the conforming criteria on a Cost Vs Benefit basis over the life of the proposed structure. From this evaluation process the “alternative” submission received from Concrete Structures Ltd was deemed to offer the best value to both NZTA and local Ratepayers over the life of the Structure.
- 2.2 Concrete Structures Ltd submission was to Design and Build an almost identical sister structure to the Mangamahu Bridge 47 under a Lump Sum lump Contract valued at fractionally under \$2.3m. The Contract was awarded in October 2014, and commenced with resource consent application and detailed design work.
- 2.3 Concrete Structures engaged Holmes Consulting, of Wellington, to undertake the Structural design component, and the local branch of MWH to undertake the civils, roading, element of the design. Local firm I D Loaders have been engaged by Concrete Structures to undertake the earthworks for the bridge approaches.
- 2.4 A project blessing was undertaken by Mark Pirikahu on 24 Feb 2015, and physical works on site have now commenced.
- 2.5 The replacement structure is designated to be single lane width and carry comparable loadings to the existing structure (to current NZTA standard requirements). It is located about 25 m downstream of the existing structure. The existing bridge will remain in use until the new bridge is complete. The contract

includes the partial deconstruction of the existing bridge, the supporting structure of which will remain as a Heritage feature.

- 2.6 The scheduled date for completion is September 2015, however it is Concrete Structures' intention to finish the project earlier than this contractual date.
- 2.7 Rick Grobecker is managing the project, on behalf of Wanganui District Council, and is being assisted by Damien Wood from Council's Infrastructure team.

*Funding for the replacement of the Mangaweka Bridge:*

- 2.8 Council has provided \$2 million in 2018/19 as its share of the cost of replacing the Mangaweka Bridge. Manawatu District is the lead on this project, and has confirmed its funding commitment is also in 2018/19. NZTA funding has yet to be confirmed.

*Progress with the parking bay at Gumboot Park, Taihape:*

- 2.9 The contractor's initial price was rejected as being excessive. A lower price of \$22,000 has been agreed, so the work will commence shortly. The traffic management plan is being finalised.

### **3 Rubbish & Recycling Group of Activities**

*The storage of green waste at Marton Transfer Station – compliance with resource consent*

- 3.1 At its 12 March 2015 meeting, the Committee raised asked whether there is a height restriction on the green waste at the Marton Waste Transfer Station (MWTS). The MWTS received consent to operate in 1993. The management plan which forms part of the consent conditions is given as Appendix 1.
- 3.2 Green waste is not specifically mentioned as part of the management plan, and was implemented at a later date in February 2013. The vegetation along the boundary was removed mid-2014 to construct the concrete pad and, due to space constraints at the site, to maximise all possible space at the site.
- 3.3 There are no conditions for maximum height for the green waste (or any other aspect of the transfer station). However, the issue may have arisen because vegetation along the boundary was removed to make more space for the green waste (Figure 1 and 2). Screen planting is a requirement of the consent.



*Figure 1. Images from Google Street view dated November 2013 showing previous planting.*



*Figure 2. View of the site 31 March 2015.*

- 3.4 The height of the green waste pile corresponds with the volume required to fill a truck and trailer to be taken to Paranui. The pile could be lower and longer, but this would require an extension to the concrete pad at an extra cost of approximately \$13,000.
- 3.5 It is proposed that trees will be planted in front of the perimeter fence to soften the stack of green waste. For example Pitosporum planted as a hedge.
- 4 Recommendation**
- 4.1 That the memorandum 'Queries Raised at Previous Meeting' be received.

Samantha Whitcombe  
Governance Administrator

# *Appendix 1*

RANGITIKEI DISTRICT COUNCIL  
KING STREET WASTE TRANSFER STATION  
MANAGEMENT PLAN



## KING STREET WASTE TRANSFER STATION MANAGEMENT PLAN

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## 1 INTRODUCTION

\*

This Management Plan forms part of the conditions of consents granted under the Resource Management Act 1991 for the establishment and operation of a solid waste transfer station to serve the Marton area.

*For the purposes of clarification, asterisks have been inserted in the margins to indicate where changes have been made to the wording of the management plans which formed part of the applications.*

## 2 CONSTRUCTION

### 2.1 Site

The site is located on King Street, Marton.

The legal description of the land is

Lots 60, 64 and Part Lots 65 and 67 Deeds  
Plan 251 Part DP 4225  
Part Lot 1 DP 7555  
Lot A of Part Lot 1 DP 7555

### 2.2 Design and Construction

The design shall be carried out under the direction of a registered engineer and suitably experienced specialist engineers shall be used as appropriate.

A quality management plan shall be prepared for the construction phase and this shall be adhered to by the Consent Holder.

One copy of the quality management plan shall be deposited with the consent authorities prior to construction commencing.

### 2.3 Form of the Waste Transfer Station (WTS)

The precise layout of the waste transfer station has not been completely detailed. It shall be appropriate for the activity and the consents which are granted.

Prior to construction, one copy of the working drawings shall be submitted to the consent authorities for them to confirm that the design is consistent with the consent granted.

\* The transfer station shall be similar to that shown on Fig WTS 1, notwithstanding a hazardous storage facility has been provided for in the decision, but not shown.

Features shall include:

- a. security fence enclosing the operational features within the site, not necessarily on the site boundaries

2.3 contd

- b. landscape planting
- c. separate entrance and exits off King Street
- d. provision for recycling bins and associated parking
- \* e. provision for hazardous waste storage
- f. adequate pavement for vehicle trucking paths, including reversing to waste dump pit and for waste haulage vehicle(s)
- g. separate systems for the drainage of leachate and stormwater from the site
- h. dump pit with 8 vehicle bays.
- i. canopy over the dump pit
- \* j. litter control fencing

### 3 STORMWATER AND LEACHATE SYSTEM DESCRIPTION

#### 3.1 Requirements

Control shall be provided over the drainage of all leachate and stormwater from paved areas of the site.

The leachate system means the system which drains:

- a. The dump pit
- b. The vehicle loading bays, extending 3 metres from the edge of the pit
- c. The container pit
- d. The lower part of the ramp to the container pit

The stormwater system means the system which drains the remainder of the paved portion of the site. The canopy over the dump pit may be drained separately direct to the municipal drain. As shown in Fig WTS 2.

The leachate system shall include screening of leachate and settling prior to discharge to the municipal sanitary sewer. There shall be provision to contain leachate in the dump pit and/or container pit in an emergency.

The stormwater system shall include screening and a control system which provides for the following:

- e. The first flush of stormwater shall be discharged to the leachate system. The first flush means all flows up to a limiting flow rate.

3.1 cont'd

- f. Flows in excess of the first flush shall discharge to the municipal stormwater drainage system.
- g. When the transfer station has been closed and cleaned, all stormwater shall be discharged to the municipal stormwater drainage system. When the transfer station is opened for use, operation shall be as in a and b immediately above.

The settling chamber shall provide 30 minutes detention in a 1 in 10 year storm event.

### 3.2 Normal Operation

The pump in the container pit shall be started manually and shall stop under automatic control. Manual over-ride shall be provided to stop the pump if required.

Control Valve 1 shall normally be open. After the waste transfer station has been closed to the public and washed down this valve may be closed. It shall be opened when the gates are next opened.

### 3.3 Routine Maintenance

Screens shall be cleared daily.

- \* The settling chamber and sump shall be pumped out at least once in every period of six months. The frequency may be increased at the Consent Holder's discretion.

Satisfactory operation of the emergency control gates shall be checked monthly.

### 3.4 Emergency Operation

Carry out the following operations (as necessary) to contain spillages on site.

- a. Insert control gate to stormwater system.
- b. Close Control Valve 2 to contain leachate within the dump pit.
- c. Switch off pump (if it is operating) to contain leachate within container pit.

Then proceed as in Section 8.2.

## 4 MANAGEMENT

### 4.1 Staffing

- \* Suitably trained personnel shall be present at all times that the Waste Transfer Station is open.

- \* Without restricting the duties of personnel at the Waste Transfer Station, the daily routine shall provide, inter alia, for:

4.1 contd

- \* a. Opening the WTS at the beginning of each service shift and setting the stormwater control.
- \* b. Closing the WTS at the end of the service shift.
- \* c. Cleaning down the WTS and setting the stormwater controls.

4.2 Training

A manual of operating procedures shall be prepared for the facility.

The Consent Holder shall provide training for operation of the waste transfer station and of haulage vehicles and shall report on the training provided to the General Manager, Manawatu-Wanganui Regional Council prior to the waste transfer station being opened to the public.

Thereafter the Consent Holder shall provide such training as is appropriate and this shall include at least 4 hours annually.

Training shall be given to any back-up staff.

The training shall include emergency procedures.

4.3 Other Parties

The Consent Holder shall liaise with Emergency Services.

4.4 Signage

- \* Signage outside the WTS site shall display:
  - a. Opening hours
  - b. Recyclable materials which are accepted
  - c. Wastes which are accepted without restriction
  - d. Wastes which are accepted with specific conditions eg. wrapping of food wastes, hazardous wastes
  - e. Wastes which are not accepted including likely examples
  - f. Alternative facilities for unacceptable wastes
  - g. Council contact

Signage shall also be displayed to warn the public to keep out if the gates are closed and not to dump waste outside the site.

Signage at the recycling area shall identify the materials accepted in each recyclable bin.

Signage at the dump pit shall advise of unacceptable wastes and direct certain wastes (if any) to be deposited in a specified manner.

Signage shall be provided to guide the public and give safety warnings as necessary.

4.4g cont'd

Signage shall be provided to advise the public what to do in the event of a spillage of hazardous materials.

## 5 ACCEPTABLE WASTES

\*

Wastes accepted at the waste transfer station shall be those of a domestic/household nature or from conventional farming and commercial activity arising within the Rangitikei District. The Consent Holder shall not be bound to accept all such wastes.

The Consent Holder shall not knowingly accept hazardous wastes in significant quantities, being wastes that pose a present or future threat to the environment due to, for example, their explosive, flammable, reactive, toxic, corrosive or infectious nature, and include wastes that pose an immediate threat to persons who are handling them.

The Consent Holder may, from time to time, determine to accept certain hazardous wastes providing that:

- a. Acceptance is not in contravention of an operative Regional Plan or policy.
- b. A system of disposal inside or outside the District is available for the environmentally acceptable disposal of such waste.
- c. They are stored in an acceptable manner.

The Consent Holder shall display signage at the WTS defining wastes which are unacceptable, providing examples of unacceptable wastes which are present in the community.

## 6 OPERATION

### 6.1 Hours of Operation

\* The hours shall be determined from time to time by the Consent Holder, and shall not be outside the following times:

7.00 am to 8.00 pm daily except in emergency circumstances.

\* The entry and exit gates to the waste transfer station shall be securely locked outside opening hours.

### 6.2 Recycling Facilities

The materials which will be accepted for recycling shall be determined by the Consent Holder.

Suitable containers for recyclable materials shall be provided between the site entrance and the waste dump pit.

B7

6.2 cont'd

Suitable parking shall be provided for vehicles from which recyclables are being unloaded.

The type of material accepted in each bin shall be clearly shown. Signage shall be provided, as appropriate, to guide the public on any requirements in respect of these recyclables.

### 6.3 Special Wastes

Secure facilities shall be provided for the safe storage of any difficult or hazardous wastes deposited at the transfer station pending treatment or disposal. These wastes are those defined in Appendix 1.

### 6.4 Public Deposit of Waste

Vehicles will draw alongside the dump pit or reverse to it and deposit waste in the dump pit.

### 6.5 Waste Loading

Waste in the dump pit shall be loaded into the transfer system by pushing with a wheeled plant item, probably a small front-end loader.

### 6.6 Site Cleaning

- \* The site shall be left clean at the end of each day that the WTS is in operation. The cleaning shall include the following operations:
  - \* a. Clearing the dump pit and covering the waste container if required.
  - \* b. Washdown of dump pit and standing bays where the public off-load wastes. The washdown water shall be directed to the sewer in an appropriate manner.
  - \* c. Collection of litter

### 6.7 Security and Safety

The entire facility shall be securely fenced and all gates shall be locked when the waste transfer station is not open to the public.

### 6.8 Waste Haulage

Containers/vehicles etc for haulage of waste to a landfill shall be covered sufficiently to prevent the escape of contents.

7 CONTROL OF NUISANCES

7.1 Noise

Vehicles and plant under the control of the Consent Holder shall be appropriately muffled.

The site shall be laid out, and activities conducted, so that no use creates noise which exceeds the following corrected noise levels, at the boundary of the subject site:

\* Operational Noise

|            |                |  |
|------------|----------------|--|
| Day time   | (7 am to 6 pm) | 65 dB(A) L10   |
| Evening    | (6 pm to 8 pm) | 60 dB(A) L10   |
| Night time | (8 pm to 7 am) | 45 dB(A) L10 <u>and</u> an Lmax of the lower of 75 dB(A) or the background sound level plus 30 |

These noise levels may be exceeded during emergencies.

Measurements shall be conducted in accordance with NZS6801:1991 : "Measurement of Sound", and assessed in accordance with NZS6802:1991 : "Assessment of Environmental Sound.

Construction Noise

Noise from construction on the subject site shall be measured and assessed in accordance with, and conform to the relevant maximum permissible noise levels contained in, NZS6803P:1984 : "The Measurement and Assessment of Noise from Construction, Maintenance and Demolition Work".

7.2 Dust

The Consent Holder shall have piped water available to dampen down loads of dusty waste.

In general, unconfined loads of dusty waste should not be knowingly accepted but directed to a disposal facility.

7.3 Smell

The Consent Holder shall not hold wastes with an offensive smell overnight at the waste transfer station.

\* Wastes which are particularly malodorous or noxious shall be promptly removed from the site, if detectable beyond the boundary of the WTS.



#### 7.4 Litter

- \* Catch nets and fences shall be used as appropriate to contain litter onsite.

The waste transfer station shall be cleared of litter at the end of each day of operation.

The site landscaping shall include shelter trees.

- \* The Consent Holder shall take all reasonable steps on each day of operation to remove litter associated with the transfer station that may be deposited on King Street, Kensington Road and Station Road.

#### 7.5 Landscaping

- \* The Consent Holder shall employ a professional landscape architect to plan and supervise the landscaping, which shall include screen planting.

#### 7.6 Vermin and Flies

Signage shall be displayed requiring food scraps etc., to be wrapped.

If vermin are detected onsite, poison baits shall be used.

Insecticide shall be used to control flies and other insects as appropriate.

### 8 EMERGENCY PROCEDURES

- 8.1 Signage shall be provided to advise the public what to do in the event of emergencies.

This generally shall involve:

- a. notifying nominated staff of the District Council or some other nominated agent of the Consent Holder.
- b. notifying the police and the appropriate emergency service via a 111 telephone call. The emergency service is likely to be the ambulance service in the case of injury and the fire service in the case of other emergencies associated with waste management operation.
- c. in the event of spillages, closing the two drainage controls so that liquids cannot drain from the site. (See Section 3.4)

- 8.2 Following notification of such an emergency, the Consent Holder shall co-operate with the emergency services.

This shall typically include:

- a. closing the WTS to the public
- b. treating spillages as necessary before discharging to the sewer or stormwater drain or otherwise disposing

### 8.3 Emergency Response Procedures

The Consent Holder shall prepare detailed emergency response procedures in consultation with appropriate organisations for dealing with emergencies at the transfer station in a safe and timely manner.

## 9 RECORDS

### 9.1 General

The Consent Holder shall maintain the following records:

- a. Quantities of waste hauled from the WTS.
- b. Quantities of non-hazardous waste which have been directed elsewhere rather than accepted at the WTS, their sources and disposal sites.
- c. Full details of all hazardous wastes which the Consent Holder becomes acquainted with, their nature, source and quantity and the disposal site/method and the date they were presented at the WTS.
- d. Other records that may be required under an operative Regional Plan which has statutory recognition.
- e. A list of any complaints received and the action taken to address them.
- f. A list of all emergencies with appropriate detail.

### 9.2 Reporting

The Consent Holder shall present the District Council with an annual report on quantities and types of waste entering the landfill in that year.

\*

## 10 WASTE ANALYSIS

### 10.1 Waste Types

The types of waste accepted at the WTS shall be analysed by observation of the dump pit contents prior to, or on loading for, removal from the site.

### 10.2 Waste Quantities

- \* The amount of general waste which is accepted shall be quantified by recording the number of loads hauled away for disposal.

10.2 contd

The Consent Holder shall also record details of non-hazardous wastes which have been directed for disposal without passing through the transfer station. This could include waste going to Council facilities and waste going elsewhere both inside and outside the District.

### 10.3 Special Wastes

- \* Hazardous wastes shall be monitored by recording in a specific file held in the Consent Holder's Marton office.
- \*

10m BETWEEN EXISTING KERBS.

KING STREET

SLIDING GATE

RECYCLE BINS

CAR TURNING PATH

TRUCK TURNING PATH

12.5m. RADIUS

CAR PATH

RAMP 1:8

RAMP DOWN.

CANOPY OVER.

53.0 m.

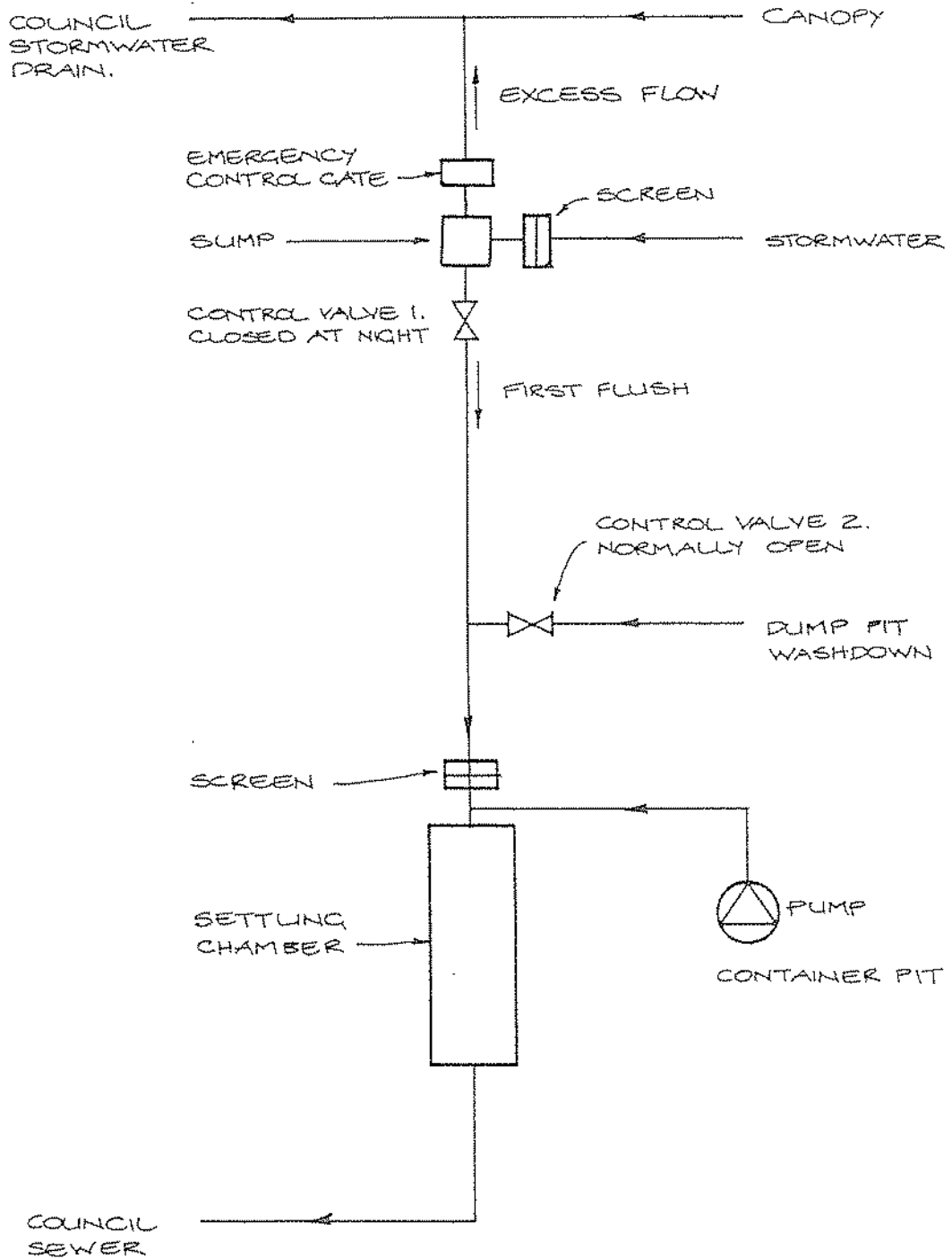
SCALE: 1:500

KING STREET  
WASTE TRANSFER STN.  
CONCEPT PLAN

**RoydsGarden**  
LIMITED  
Consulting Engineers & Planners  
CHRISTCHURCH DUNEDIN BAICLUTIA  
INVERCARGILL PALMERSTON NORTH GREYMOOUTH

Date: 5/93

FIG. WTS 1



KING STREET  
WASTE TRANSFER STN.  
DRAINAGE SYSTEM

RoydsGarden  
LIMITED  
Consulting Engineers & Planners  
CHRISTCHURCH DUNEDIN BALCLUTHA  
INVERCARGILL PALMERSTON NORTH GREYMOUTH.

Date: APR. '93

FIG. WTS 2.

# Attachment 4



**Rangitikei**  
UNAPOLOGITICALLY...

# REPORT

**SUBJECT:** Bonny Glen Leachate Report – Marton WWTP

**TO:** Rangitikei District Council

**FROM:** Joanna Saywell, Utilities Asset Manager

**DATE:** 31 March 2015

**FILE:** 6-WW-1-4

---

## 1 Executive Summary

### 1.1 Purpose of the report

The purpose of this report is to update council about the work that has been done in the past few months to determine the effect of the Bonny Glen landfill leachate on the Marton Wastewater Treatment Plant (WWTP) and options to either improve the plant to enable it to treat the effects or requirements at the landfill to pre-treat the leachate to ensure it does not cause adverse effects at the plant.

This issue affects the current compliance of the Marton WWTP, with the resource consent for discharge of treated wastewater and the planned CAPEX expenditure to upgrade the Marton WWTP.

### 1.2 Key issues

The Marton WWTP accepts leachate from the Bonny Glen landfill and has a variable record of compliance with the current resource consent for discharge of treated wastewater to the Tutaenui Stream (tributary of the Rangitikei River) over that time.

The leachate includes high concentrations of ammoniacal nitrogen and is highly coloured. The wastewater treatment plant at Marton is not configured to remove large quantities of nitrogen or colour and the high colour and quantity of suspended solids affects the ability of the plant to use UV to remove e.coli.

If the municipal load only is considered, the treatment plant is not heavily loaded and without the leachate and any other trade waste loading should be expected to achieve full compliance with the discharge consent.

### 1.3 Major recommendations

That the report 'Marton WWTP - Bonny Glen Leachate Effects – Options Assessment' be received.

That the leachate from Bonny Glen is partially treated before any mixing with wastewater at Marton WWTP.

That RDC meet with Midwest Disposals Ltd to determine the best place and method for the pre-treatment, either at the landfill (preferred option) or at Marton WWTP.

That all the costs associated with any up-grading works required at Marton WWTP to deal with the leachate are recovered from Midwest either in the form of appropriate Trade Waste charges or a capital contribution.

## **2 Context**

### **2.1 Background**

John Crawford, Technical Principal – Wastewater, Opus International Consultants Ltd has been engaged to review the current inflows of raw effluent into the Marton WWTP, determine the effect of the Bonny Glen landfill leachate relative to the total inflows, and provide an assessment of the effect of that leachate on the overall operation and compliance of the WWTP. This report is provided as [Appendix 1](#).

Midwest Disposals Limited (Midwest) has been operating the Bonny Glen Landfill since 2000. The landfill was previously owned by the Rangitikei District Council (RDC). When the landfill was opened in 1995 the leachate was collected and disposed of via spray irrigation onto the property. Leachate was only tankered away when it showed signs of contamination. The last year that irrigation occurred was in 2008.

Previous reports indicate that the volume of leachate, and the ammonia content, increased considerably once sealed cells were developed within the landfill. Midwest are currently applying to extend the landfill.

There are three leachate ponds on site with a total volume of 6,900m<sup>3</sup>, which are normally operated between 40 and 60% full to provide a suitable buffer for additional storage in a wet period.

Originally, leachate was discharged into the anaerobic pond at the head of the Marton WWTP but this caused issues. Since 2008 Midwest have been tankering leachate from the Bonny Glen Landfill and discharging it into the Marton wastewater reticulation, a few kilometres upstream of the WWTP.

### **2.2 Long Term Plan (LTP)**

Funding has been allocated in the 2012-22 LTP for the capital (CAPEX) upgrade of the Marton WWTP.

This funding allows for the addition of another anaerobic pond and other works to enable the plant to cope with other issues at the plant. The attached report



by Opus indicates that this is unlikely to enable the plant to achieve the required level of compliance if the untreated leachate continues to be discharged to the plant.

If it is decided that pre-treatment at Marton WWTP is the preferred option then additional CAPEX funding of approximately \$3,000,000 needs to be allowed for next year. OPEX costs of \$680k need to be off-set against the trade waste charges levied on the leachate (estimated at between \$60-\$70/m<sup>3</sup>).

### 2.3 Significance

The report does not trigger the significance thresholds as the impact on Council's direction in terms of its strategic objectives, the change from Council's current level of service, the level of public impact and/ or interest and the impact on Council's capability (non-cost), to continue to provide existing services are all assessed as medium to low.

### 2.4 Maori consultation

Iwi consultation is a key part of the resource consent renewal process. This report is focused on operational matters as they relate to the current operation of the Marton WWTP and therefore Maori views have not been explored in this report.

### 2.5 Legal issues

The acceptance of leachate from Bonny Glen impacts on Council's ability to ensure ongoing compliance with resource consent requirements for the Marton WWTP.

There is currently no formal arrangement in place covering the acceptance of leachate from Bonny Glen. If Midwest wish to continue to deposit leachate into the Marton WWTP a formal Trade Waste licence/contract needs to be in place to enable RDC to recover capital and operational costs associated with treating the waste.

Pre-treatment may still be required at the landfill to ensure the leachate deposited at Marton does not have increased concentrations of contaminants over time.

If agreement cannot be reached with Midwest, RDC need to explore the legal implications of refusing to accept trade waste from the landfill.

### 2.6 Risks

Failure of the treatment process can result in adverse effects on the receiving environment. The high total nitrogen loading encourages the growth of algae and the high ammonia fraction of the nitrogen can be toxic to stream life.

The high concentrations of ammonia in the leachate could be a health and safety risk to operators working on the reticulation at the time of any discharge. Therefore disposal to the sewer network should be discontinued and an alternative, such as a short term holding tank, be used to enable the flow to be added to the plant over a period of time, eliminating shock loading.

There is a risk that Midwest may decide that the trade waste charges are too great when added to the costs of transportation and therefore it may be cheaper for them to treat the leachate on site and revert to land-based disposal. If RDC has already invested heavily in up-grading the plant to enable the plant to accept the leachate the council may be left with high operating costs but limited ability to recover them.

The quality and quantity of the leachate varies considerably from day to day. There is a risk that a treatment process that has been optimised to treat one particular contaminant may adversely affect the treatment of another contaminant, for example by altering the alkalinity. There is still a risk that the variations in the leachate could upset the processes downstream of the pre-treatment.

There are other trade waste customers within the Marton area so removing the leachate loading from the plant may not completely solve its current issues. Therefore works are needed to enable dilution of trade waste before it enters the ponds and to improve the operation of the anaerobic pond.

### **3 Analysis**

#### **3.1 Landfill Leachate – General**

Most landfill leachate is created by the percolation of rainfall through the body of the landfill, accumulating contaminants as it goes.

Landfill leachate is typically high in COD but with a comparatively low BOD:COD ratio, somewhat lower than conventional wastewater.<sup>1</sup>

Leachate typically has very high levels of ammonia nitrogen but low levels (similar to domestic wastewater) of phosphorus, thus making it an unbalanced waste in terms of the constituents required for conventional biological treatment.

Depending upon what is in the landfill and the age of the landfill, the leachate can also contain high levels of metals and dissolved solids.

#### **3.2 Leachate Characteristics**

The Bonny Glen leachate appears 'normal' in that it:

---

<sup>1</sup> The Chemical Oxygen Demand and Biochemical Oxygen demand tests are both measures of the relative oxygen-depletion effect of a waste contaminant

- Has high COD, low BOD:COD ratio,
- Has high ammonia,
- Has low phosphorus,
- Has high residual alkalinity and the pH is typically around 8.2,
- Is very highly coloured, and
- Is contaminated with metals (in this case Arsenic, Boron, Chromium and Nickel are the metals of concern).

The leachate characteristic concentrations and volumes (but not loads) are affected by rainfall and cover management, for example the volume of leachate tankered offsite in the 2012/2013 financial year was approximately 30% less than other years from 2010-2014 due to improved cover management and lower rainfall.

The leachate strength is expected to reduce with time as the landfill ages, stabilises, and finally enters 'aftercare' stages. However, Midwest are currently seeking to extend the landfill.

### 3.3 Leachate Volume

Leachate is not tankered every day. Daily volumes are up to 200m<sup>3</sup>, but are approximately 38m<sup>3</sup>/d when averaged over 365 days. On days where leachate is tankered to the Marton WWTP, the Bonny Glen leachate contributes up to 70% of the total ammoniacal nitrogen and over 25% of the BOD and COD arriving at the Marton WWTP. Based on data from October 2013 to November 2014, leachate is tankered to the WWTP on 47% of days. This means that there are large spikes in the incoming WWTP loading, particularly the ammonia loading, which the WWTP must attempt to balance and treat.

### 3.4 Future Loading including changes in Bonny Glen Leachate Loading

The leachate concentration is expected to reduce with time as the landfill ages, stabilises, and finally enters 'aftercare' stages. Offsetting this, the leachate volume is predicted to increase with time until approximately the year 2055.

### 3.5 Effects of the Leachate on the Marton WWTP

The current WWTP generally manages the BOD loading satisfactorily at present. Average effluent cBOD<sub>5</sub> is 30mg/l and dissolved scBOD<sub>5</sub> is 3.7mg/l. However, the compliance is already marginal and, while the theoretical BOD capacity of the treatment plant has not been reached, the resource consent condition would be breached even if the effluent was increasing the in-stream soluble cBOD<sub>5</sub> by 0.1mg/l resulting in downstream value reaching 2.1 mg/l.

The current WWTP does not manage the ammonia loading adequately. Average effluent ammonia is 18mg/l. While this is quite reasonable for an oxidation pond system, it is, at times, resulting in the Tutaenui Stream ammonia level reaching 11mg/l, from an upstream level of 0.01mg/l. This is both in contravention of the

consent condition and acceptable ammonia levels in an inland waterway. It is noted that when there is a sustained period without leachate discharge to the Marton WWTP, the WWTP is able to almost completely nitrify the effluent and would be expected to be compliant with the ammonia condition during that period.

### 3.6 Colour and Disinfection

The final effluent from the Marton WWTP shows an effluent colour that is strongly positive while the turbidity remains approximately flat. Dissolved colour is known to have a significant effect on UV transmissivity and hence on the effectiveness of ultra-violet disinfection systems and their ability to neutralise bacterial contaminants.

### 3.7 Options Management of Leachate Load

There are various options or combinations of options available to treat the Bonny Glen landfill leachate so it is managed appropriately and the Marton WWTP is able to revert to reasonably compliant operation. The four broad approaches to the future treatment of leachate generated by Bonny Glen Landfill are:

- Do nothing
- Duplicate Anaerobic Pond
- Upgrade Marton WWTP
- Pre-Treatment of Leachate at Marton WWTP

Within each broad approach, there will be a multitude of sub-options that can be considered at the preliminary design stage, during the selection of suppliers and in calculation of whole of life cost.

Figure 10: Preliminary qualitative assessment of option attributes

|                               | Compliance | CAPEX<br>See S7 | OPEX<br>See S7 | Complexity | Small Volume<br>TW<br>Flexibility | Large Volume<br>TW<br>Flexibility | Risk to Council | Residuals                     |
|-------------------------------|------------|-----------------|----------------|------------|-----------------------------------|-----------------------------------|-----------------|-------------------------------|
| Do Nothing                    | Red        | Green           | Green          | Green      | Red (No capacity)                 | Red (No capacity)                 | Red             | Metals in sludge              |
| Add anaerobic Pond            | Red        | Yellow          | Green          | Green      | Green                             | Green                             | Red             | Metals in sludge              |
| Whole WWTP, High Rate Aerobic | Yellow     | Red             | Red            | Yellow     | Green                             | Yellow                            | Yellow          | Much sludge. Metals in sludge |
| On Site Pre-Treatment         | Green      | Green           | Green          | Red        | Green                             | Red                               | Yellow          | Transport back to Landfill    |
| Landfill Site Pre-Treatment   | Green      | *               | *              | Red        | Green                             | Red                               | Green           | Left at Landfill              |

\* From Council perspective.

Figure 10 provides a provisional, qualitative summary of the potential types of upgrade strategy that could be applied to manage treatment and disposal of leachate from Bonny Glen Landfill. Simplistically, Green means 'Good', Orange means 'OK' or 'Average' and Red means 'Not Good'.

Subsequently cost estimates have been made on the two leachate pre-treatment options, with the results summarised in the following table:

|                                  | CAPEX          | OPEX  | NPV   | Annualised Cost        |
|----------------------------------|----------------|---|---|------------------------|
| Key cost parameters              |                | Power= 27.9c/kW.hr<br>Labour = \$40/hr<br>Transport \$0.90/t.km | Inflation = 2.5% Cost of Capital = 6%<br>n= 20 years<br>Contingency = 30% | N= 20 years<br>CoC= 6% |
| Pre-Treat at Marton WWTP         | \$2.3 - \$3M   | \$490k  | \$8.3M  | \$680k                 |
| Pre-Treat at Bonny Glen Landfill | \$1.5 - \$1.9M | \$355k  | \$5.6M  | \$540k                 |

## 4 Conclusions

- 4.1 Marton WWTP is configured as a domestic / municipal wastewater treatment based upon pond technology. It is not well suited to provide high levels of treatment to significant industrial trade wastes of a complex nature.
- 4.2 The Marton WWTP is not heavily loaded from a domestic perspective. However, the leachate appears to apply high loads of ammonia and colour carrying compounds (which affect disinfection and effluent clarity). There are also a number of heavy metals of concern and more work is required with regard to the accumulation of these in the treatment plant sludge.
- 4.3 Loading from the Leachate is significant (despite low volumes) compared to domestic loading on the treatment plant and from predictions provided by the owners, the loading is likely to continue increasing in the short to medium term.
- 4.4 Likely costs for treating the leachate at Marton WWTP are of the order of \$680,000 per annum or approximately \$60 - \$70/m<sup>3</sup>.
- 4.5 A 'Do Nothing' approach would not be valid.
- 4.6 A Marton WWTP upgrade using a further anaerobic pond may free up some biological capacity in the ponds but is unlikely to provide the types of improvement required to provide compliant effluent and allow for the likely future increase in leachate loading.
- 4.7 Based on an initial, qualitative and unilateral assessment, the most favourable option for Council is likely to be a stand-alone leachate pre-treatment facility. This may be situated at the Marton WWTP or the Bonny Glen landfill site with the cheapest option being pre-treatment at Bonny Glen landfill.

## **5 Recommendation**

- 5.1 That the report 'Marton WWTP - Bonny Glen Leachate Effects – Options Assessment' be received.
- 5.2 That the leachate from Bonny Glen is partially treated before any mixing with wastewater at Marton WWTP.
- 5.3 That RDC meet with Midwest Disposals Ltd to determine the best place and method for the pre-treatment, either at the landfill (preferred option) or at Marton WWTP.
- 5.4 That all the costs associated with any up-grading works required at Marton WWTP to deal with the leachate are recovered from Midwest, either in the form of appropriate Trade Waste charges or a combination of capital contribution and trade waste charges.

Joanna Saywell  
Utilities Asset Manager

# *Appendix 1*

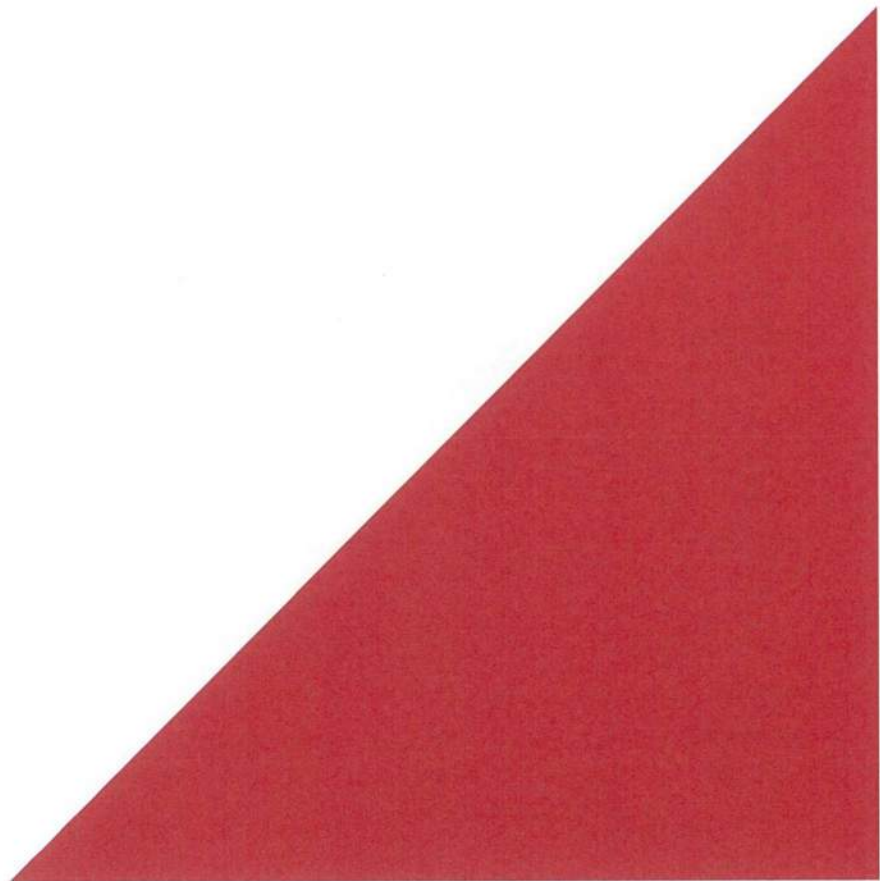




*Rangitikei District Council*

# **Marton WWTP Bonny Glen Leachate Effects**

**Options Assessment**





Rangitikei District Council


# Marton WWTP

## Bonny Glen Leachate

### Effects

#### Options Assessment

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# 1 Executive Summary

Midwest Disposals Limited (Midwest) have been operating the Bonny Glen Landfill since 2000. The landfill was previously owned by the Rangitikei District Council (RDC). Originally leachate was discharged directly into the anaerobic pond at the head of the Marton WWTP but this caused issues. Since 2006 Midwest have been tankering leachate from the Bonny Glen Landfill and discharging it into the Marton wastewater reticulation a few kilometres upstream of the WWTP.

There is currently no Trade Waste Consent in place for the acceptance of this discharge but an informal agreement existed between the former RDC Waste Manager and the Bonny Glen Landfill operators. Trade Waste charges for the 2013/14 financial year amounted to approximately \$200,000 inclusive of GST. Around 13,500m<sup>3</sup> of leachate was tankered offsite to Marton during this period.

Data for this work has been amalgamated from a number of different sources, covering a number of different time frames. Moving forward, it would be beneficial to formulate and use a single data management system for leachate and the treatment plant so that all records are kept in one system and are fully compatible.

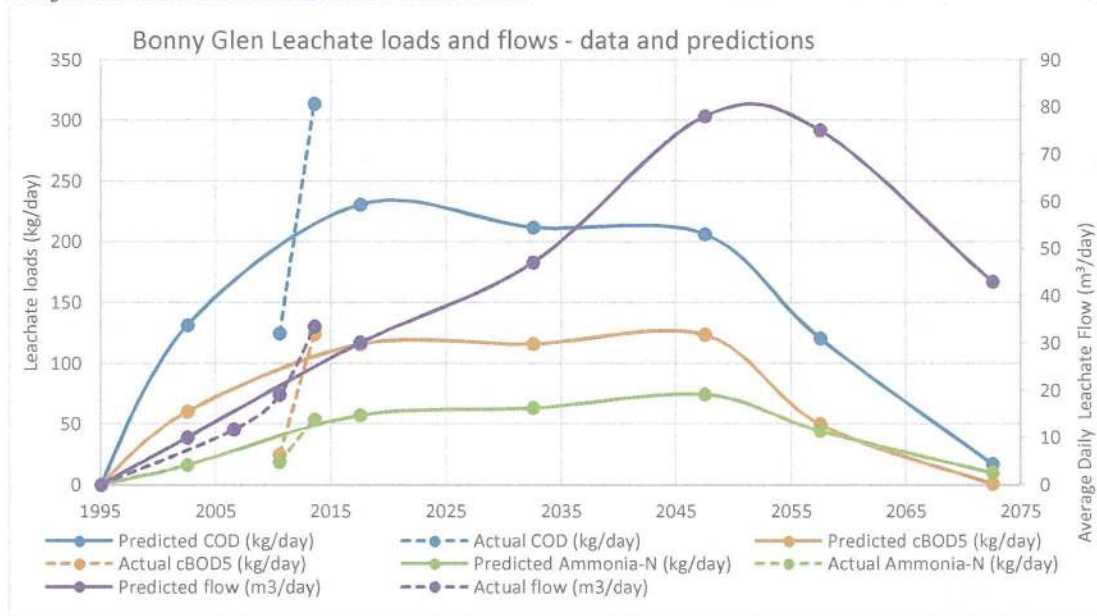
The existing Marton WWTP is a relatively conventional pond based system. It includes anaerobic, facultative and maturation lagoons followed by gravity recirculating sand filters and disinfection using ultraviolet light irradiation. The natural capacity of the ponds is augmented with 77kW of surface aeration capacity. If the municipal load only is considered, the treatment plant is not heavily loaded. However, it is not configured to remove the large quantities of nitrogen and colour delivered by the landfill leachate.

The discharge consent for the Marton WWTP is somewhat unusual in that the numerical quality parameters relate to the receiving water quality downstream of the discharge point. Thus, compliance (or not) with these conditions is dictated by upstream activities, stream flow rate at any particular time and the effluent quality. Thus, it is possible to measure whether a particular condition is being contravened, but it is not possible to say that a particular effluent quality number constitutes a consent condition failure. Horizons monitoring reports<sup>1</sup> indicate consent non-compliance on one or more parameters including cBOD<sub>5</sub>, ammonia, turbidity, visibility and e.coli.

The Bonny Glen Leachate is reasonably typical of that type of waste in that it contains high concentrations of COD, cBOD<sub>5</sub>, ammonia (c 1,600mg/l) and high alkalinity. However, it also contains elevated levels of arsenic, chromium, nickel, boron and chlorides which could be an issue for future sludge management and, in the case of chlorides, materials selection for dedicated processes. The plot below illustrates that leachate flows and loadings, at yr 2014, were already in excess of those predicted by the long term leachate projection calculations in the Fraser Thomas Ltd *Leachate Management Report*. Analysis to date (refer section 6) is strongly suggestive that the leachate is instrumental in causing poor performance in some aspects of the treatment plant operation, for example ammonia discharge.

<sup>1</sup> Opus has been provided with August 2010, May 2013 & December 2013 reports

Projected vs actual leachate flows and loads



This report has considered a number of options for future management of the leachate loading to the treatment plant. These all assume that the leachate volume, in some form, will be transferred to the Marton WWTP for disposal. There are also other alternatives to this.

To 'do nothing', is not a viable option. RDC had received a suggestion that another anaerobic pond should be built at the front end of the plant. We do not believe that would be sufficient to deal with the ammonia, colour and turbidity issues. A full upgrade of Marton WWTP could be undertaken to deal with each problem. This would be very expensive as each unit process upgrade would need to be sufficient to treat the entire domestic and trade waste flows plus rainfall. This option would also leave a lot of residual risk with Council.

Finally, conceptual options have been considered to provide dedicated leachate pre-treatment facilities at the WWTP and back at the landfill source. Because they need to be sized to only treat the leachate, these are considered to be the most pragmatic options for management scenarios that continue to involve disposal of the leachate into Marton WWTP.

Preliminary qualitative assessment of option attributes

|                               | Compliance | CAPEX<br>See S7 | OPEX<br>See S7 | Complexity | Small<br>Volume<br>TW<br>Flexibility | Large<br>Volume<br>TW<br>Flexibility | Risk to<br>Council | Residuals                     |
|-------------------------------|------------|-----------------|----------------|------------|--------------------------------------|--------------------------------------|--------------------|-------------------------------|
| Do Nothing                    | Red        | Green           | Green          | Green      | No capacity                          | No capacity                          | Red                | Metals in sludge              |
| Add anaerobic Pond            | Red        | Yellow          | Green          | Green      | Green                                | Green                                | Red                | Metals in sludge              |
| Whole WWTP, High Rate Aerobic | Yellow     | Red             | Red            | Yellow     | Green                                | Yellow                               | Yellow             | Much sludge, Metals in sludge |
| On Site Pre-Treatment         | Green      | Yellow          | Yellow         | Red        | Green                                | **                                   | Yellow             | Transport back to Landfill.   |
| Landfill Site Pre-Treatment   | Green      | *               | *              | Red        | Green                                | **                                   | Green              | Left at Landfill              |

\*From Council perspective.

\*\*If additional leachate storage capacity is included with the pre-treatment system than this cell can be changed to orange.

Subsequently cost estimates have been made on the two leachate pre-treatment options, with the results summarised in the following table:

|                                  | CAPEX          | OPEX  | NPV  | Annualised Cost        |
|----------------------------------|----------------|---|--|------------------------|
| Key cost parameters              |                | Power= 27.9c/kW.hr<br>Labour = \$40/hr<br>Transport \$0.90/t.km | Inflation = 2.5%<br>Cost of Capital = 6%<br>n= 20 years<br>Contingency = 30% | N= 20 years<br>CoC= 6% |
| Pre-Treat at Marton WWTP         | \$2.3 - \$3M   | \$490k  | \$8.3M   | \$680k                 |
| Pre-Treat at Bonny Glen Landfill | \$1.5 - \$1.9M | \$355k  | \$5.6M   | \$540k                 |

The operating costs estimated (\$34 & \$24/m<sup>3</sup>, section 8.2 & 8.3) appear very high on a unit of flow basis. However, if we convert the loads back to equivalent domestic flows, the estimates are very much on a par with conventional operating costs for wastewater treatment.

These estimated operating costs would need to be confirmed via:

- Testing of the unit cost assumptions made,
- Confirmation of the conceptual designs,
- Detailed process modelling.

## 2 Introduction

### 2.1 Background

Midwest Disposals Limited (Midwest) have been operating the Bonny Glen Landfill since 2000. The landfill was previously owned by the Rangitikei District Council (RDC). There are two lined leachate ponds on site with a total volume of 6,900m<sup>3</sup>. These are normally operated between 40 and 60% full to provide a suitable buffer for additional storage in a wet period.

Originally leachate was discharged into the anaerobic pond at the head of the Marton WWTP but this caused issues. Since 2006 Midwest have been tankering leachate from the Bonny Glen Landfill and discharging it into the Marton wastewater reticulation a few kilometres upstream of the WWTP.

There is currently no Trade Waste Consent in place for the acceptance of this discharge but an informal agreement existed between the former RDC Waste Manager and the Bonny Glen Landfill operators.

Leachate was originally charged at \$5/m<sup>3</sup> but increased to \$7.59/m<sup>3</sup> and in more recent times was increased to \$15/m<sup>3</sup>. Trade Waste charges for the 2013/14 financial year amounted to approximately \$200,000 inclusive of GST. Around 13,500m<sup>3</sup> of leachate was tankered offsite to Marton during this period.

### 2.2 Objectives

RDC has engaged Opus International Consultants Limited to:

- investigate the discharge of leachate into the Marton wastewater network
- assess the effects of this discharge on the WWTP operation and also the discharged effluent quality
- assess the efficacy of a proposed duplication of the existing anaerobic process at Marton WWTP
- provide an appropriate trade waste contract pro-forma that is appropriate for use with the Bonny Glen leachate discharge and with other trade waste dischargers
- determine an appropriate trade waste charging mechanism for long term management of the effluent if it continues to be passed through the Marton WWTP system

This initial phase report (December 2014) addresses the first three of these objectives. The others will be addressed with subsequent work.

This work does not represent a full process review of the entire treatment plant and or individual unit processes within the Marton WWTP.



## 2.3 Data

Loading and performance data for this work has been obtained from a number of sources, including:

- RDC monitoring of the Marton WWTP. Although not frequent, a very useful range of parameters is measured, including colour, and there is approximately 7 years of data accumulation.
- Horizons monitoring of the receiving water
- One year (2013/14) of daily leachate tankering logs together with daily inflows to the treatment plant.
- Landfill annual monitoring report
- Volume 4 of the 2013 Bonny Glen Landfill consent application.

Because of the disparate nature and sources of the data, much of the information has had to be extracted from hard copy and re-entered electronically to allow use to be made of it. A number of data requests have not been able to be fulfilled, in particular leachate tanker logs and leachate strength from years between 2006 and 2013. If more historical data can be located, it will assist in improving some of the analyses made in this report and the conclusions drawn.

## 3 Treatment Plant Description

### 3.1 Unit Processes

Marton WWTP consists of the following components:

Table 1: Marton WWTP Unit Processes

| Component            | Description   | Comment  |
|----------------------|---|--|
| Grit Chamber         | Manhole with mid-level discharge. Traps grit at the bottom, fat at the top  | Appears too small. Fat trapping appears a nuisance             |
| Screen               | Huber rotating perforated plate drum screen   |  |
| Anaerobic Pond       | 0.24ha x approximately 4m deep. Covered by floating wetlands  | Significant wetland planting areas have died off               |
| Facultative Pond     | 5.52 ha with two surface aerators   |  |
| Maturation Pond      | 2.55 ha   |  |
| Pressure Filter Cell | Unused  |  |
| Sand filters         | 4 No. USF Omega recirculating gravity sand filters. Model OF-6 at 6m <sup>2</sup> filtering area each. Maximum flow rate each is reported to be 60m <sup>3</sup> /hr but there is no indication under what conditions this would be achievable. | Reported to blind readily when polymer is used in the effluent |
| UV Disinfection      | In channel system. Details not sighted.   | Appears hydraulically overloaded. Needs review.                |

### 3.2 Observations

#### 3.2.1 Site

A site visit was made on 13 November 2014.

The site generally appeared to be in reasonable order. Apart from the comments made in Table 1, the following observations were made:

- There was little or no odour coming from the site.
- A significant portion of the floating wetland plants (covering the anaerobic pond) have died off. The reason is unclear. The pond surface is far from flat and it could be that floating material in areas under the floating wetlands is causing the roots of these plants to dry out. Replanting efforts do not appear to have been successful.



Figure 1: Die-Off In Floating Wetland

- One of the three facultative pond aerators was out of service.
- The ponds were are very dark brown to black coloured, giving the impression of a carbonaceous overload. However, the lack of odour indicated this was probably not the case. The operator also indicated that their hand held D.O meter indicates normally healthy D.O levels. Final effluent was also a dark tea colour. Effluent cBOD<sub>5</sub> results look reasonably typical of oxidation pond effluent, again indicating that the system is probably not overloaded with carbonaceous waste.



Marton Facultative Pond

By contrast, Ratana Facultative Pond

Figure 2 Marton vs Ratana Pond Colour

- The rock filter between the maturation pond and tertiary processes is in poor repair. It is understood to be blocked and has had to be bypassed to allow effluent to discharge without creating undue 'heading up' of the maturation pond.

### 3.3 Flow and Loading

#### 3.3.1 Design

Based on an area of 5.5ha, and the 1974 Ministry of Works and Development design loading rate of 84kg BOD<sub>5</sub>/ha/day, the original design loading for Marton WWTP would have been 462kg BOD<sub>5</sub>/day or approximately 5,000 persons.

The treatment plant includes a 2,300m<sup>2</sup> anaerobic pond (1981). There were no direct measurements of BOD<sub>5</sub> removal across the anaerobic pond. However the operator estimates that it removes approximately 30% of influent BOD, the nominal capacity will be of the order of 150 to 200kg BOD<sub>5</sub>/ha/day but potentially significantly more if loaded heavily with carbonaceous waste.

Further, the ponds include 4 mechanical surface aerators, totalling 77 kW or approximately 1850 kg O<sub>2</sub>/day if utilized to their full potential. With an oxygen requirement of approximately 1.2kgO<sub>2</sub>/kg cBOD<sub>5</sub>, this equates to, nominally another 1540 kg cBOD<sub>5</sub> per day. If this power was distributed among smaller machines and deployed evenly around the facultative pond, they would provide approximately 7W/m<sup>3</sup> of mixing energy. Potentially sufficient to turn the pond into a suspended growth reactor. This would not be appropriate unless appropriate solids management technologies were also added.

#### 3.3.2 Flow

Average daily inflow into the plant (Dec 2013 – Sept 2014) is 1,754m<sup>3</sup> however, this varies considerably due to inflow and infiltration during rain events. A typical range can vary between 1,000 and 6,700m<sup>3</sup> per day depending on the volume of discharge and the amount of rainfall. The 90<sup>th</sup> percentile flow is 2,570m<sup>3</sup>/ and the 95<sup>th</sup> percentile is 3,775m<sup>3</sup>/d or 157m<sup>3</sup>/hour.

#### 3.3.3 Municipal Loading

There is no specific, contemporary raw influent characterisation available for the Marton WWTP either with or without the leachate. There is some information from 1995, but it is unclear of how much use that would be at this time.

The 2013 census puts the Marton resident population at 4,548. For some conservatism, if we assumed 5,000 people and a factor of safety of 20% then the following loads are derived. At an estimated load of 80g BOD<sub>5</sub>/hd/day, this puts the estimated domestic loading at 480 kg cBOD<sub>5</sub>/day, at 13.5 g/hd/day, estimated domestic TKN loading is 81 kg TKN/day and at 2.2g/hd/day, estimated domestic phosphorus loading is 13 kg TP/day. These figures include 20% factors of safety.

Apart from domestic and light commercial loads, the only trade waste of significance is that from Malteurop with whom RDC has entered into a Trade waste agreement. This commenced in 2010. The agreement required a fixed sum of \$500,000 to be paid toward capital upgrades at the plant at that time. The agreement also requires a fixed Annual Operating Fee of \$40,000 toward treatment plant operational costs. This fee is fixed until 30 June 2015 and, thereafter, will be indexed by the

percentage of the Consumer Price index as calculated and published by Statistics New Zealand to cover increases in operating costs. The agreement restricts the discharger to certain waste strength parameters, above which penalties are payable. There is also a maximum daily discharge limit of 700m<sup>3</sup>/d. Only one trade waste sample result was available and no flow data. Therefore the actual flows and loads contributed by Malteurop have not been possible to calculate. Approximate loading from this source is shown in Table 2. This is based on the single water quality sample data and the maximum daily flow.

**Table 2: Approximate loading from Malteurop**

| Parameter                  | Approximate Load (based on Max. flow) |
|----------------------------|---------------------------------------|
| pH                         | 6.8                                   |
| TSS (kg/day)               | 91                                    |
| COD (kg/day)               | 246                                   |
| cBOD <sub>5</sub> (kg/day) | 245                                   |
| Sulphate (kg/day)          | 52                                    |
| TN (kg/day)                | 7.4                                   |

Thus, the total estimated domestic and Malteurop loading to Marton WWTP is as shown in Table 3.

**Table 3: Total estimated Marton WWTP loading excluding Bonny Glen**

| Parameter                  | Approximate Load (based on Max. flow) |
|----------------------------|---------------------------------------|
| TSS (kg/day)               | 607                                   |
| COD (kg/day)               | 1566                                  |
| cBOD <sub>5</sub> (kg/day) | 751                                   |
| Sulphate (kg/day)          | 117                                   |
| TN (kg/day)                | 94                                    |

### 3.4 Discharge Consent

RDC holds a Resource Consent for discharge of treated effluent from the Marton WWTP. The consent includes the following key parameters which the effluent discharged to the Tutaenui Stream must meet. These are:

The discharged Effluent shall not cause the downstream receiving water to:

- Exceed 100 E.coli/100ml
- Change in visibility of a 200mm black disc by more than 30%
- Exceed a turbidity of 20 NTU
- Exceed a daily average ammonia concentration of 2.0 g/m<sup>3</sup>, for T<15°C
- Exceed a daily average ammonia concentration of 2.8 g/m<sup>3</sup>, for T>15°C

- Exceed a daily average dissolved cBOD<sub>5</sub> concentration of 2.0 g/m<sup>3</sup>.

These conditions are somewhat unusual in a wastewater discharge consent in that that they remove the numerical quality requirements one step from the treatment plant. That is, antecedent in-stream conditions contribute significantly as to whether the treatment plant is compliant or not. The consent would be more workable if the potential in-stream effects were used to back calculate actual allowable effluent quality with appropriate percentile compliance applied.

Horizons monitoring reports<sup>2</sup> indicate consent non-compliance on one or more parameters including cBOD<sub>5</sub>, ammonia, visibility and e.coli. Ammonia non-compliance appears to be the most common failure and not all consent parameters are reported on in each monitoring report.

### 3.5 Effluent Quality

The following Table 4 summarises key effluent characteristics of the Marton WWTP. For each statistic, comparison is made between the 2014 values and the pre-2014 values. For most analytes, including UV transmissivity, the effluent has been worse in 2014 than in previous years. This may reflect increasing loading from the landfill.

**Table 4: Marton WWTP Effluent Statistics**

| Site              | Ammonia Nitrogen (mg/L) | Diss cBOD <sub>5</sub> (mg/L) | Colour (mg/L) | DRP (mg/L) | Faecal Coliforms (cfu/100mL) | Suspended Solids (mg/L) | % UV Trans 254 | Turbidity [NTU] |
|-------------------|-------------------------|-------------------------------|---------------|------------|------------------------------|-------------------------|----------------|-----------------|
| Median 2007-13    | 15.1                    | 3                             | 52            | 3.7        | 720                          | 57                      | 13             | 27              |
| Median 2014       | 34.5                    | 3                             | 89            | 4.4        | 3600                         | 40                      | 10             | 23              |
| Average 2007 - 13 | 17.9                    | 18                            | 18            | 17.9       | 18                           | 18                      | 18             | 18              |
| Average 2014      | 22.1                    | 22                            | 22            | 22.1       | 22                           | 22                      | 22             | 22              |
| 90%ile 2007 - 13  | 38.0                    | 6                             | 92            | 5.6        | 6470                         | 153                     | 25             | 51              |
| 90%ile 2014       | 39.7                    | 3                             | 124           | 5.8        | 7560                         | 79                      | 16             | 31              |
| 95%ile 2007 - 13  | 45.8                    | 8                             | 104           | 5.9        | 13200                        | 195                     | 29             | 66              |
| 95%ile 2014       | 40.8                    | 3                             | 132           | 6.0        | 8580                         | 85                      | 16             | 31              |

<sup>2</sup> Opus has been provided with August 2010, May 2013 & December 2013 reports

## 4 Landfill Leachate

### 4.1 General

Most landfill leachate is created by the percolation of rainfall through the body of the landfill, accumulating contaminants as it goes.

Landfill leachate is typically high in COD but with a comparatively low BOD:COD ratio, somewhat lower than conventional wastewater.

Leachate typically has very high levels of ammonia nitrogen but low levels (similar to domestic wastewater) of phosphorus, thus making it an unbalanced waste in terms of the constituents required for conventional biological treatment.

Depending upon what is in the landfill and the age of the landfill, the leachate can also contain high levels of metals and dissolved solids. The information we have received from the sampling undertaken on the site does not contain information on the TSS levels of the leachate from Pond 3.

### 4.2 Bonny Glen

#### 4.2.1 Characteristics

Seven sets of quarterly leachate sample results from Bonny Glen Pond 3 have been supplied from the period 07/08/2013 – 04/03/2015. The mean values of these samples are summarised in Table 5 (in all there are 28 sets of data from 24/11/2008 to present).

The Bonny Glen leachate appears fairly 'normal' in that it:

- Has high COD, low BOD:COD ratio,
- Has high ammonia,
- Has low phosphorus as shown in Table 4 below,
- Has high residual alkalinity and the pH is typically around 8.2,
- Is very highly coloured (refer 3.2 above), and
- Is contaminated with metals (in this case Arsenic, Boron, Chromium and Nickel are the metals of concern).

The leachate also contains elevated levels of chloride. The volume is small so this may not effect effluent chloride levels greatly but it is an issue that will need to be considered carefully if selecting plant and equipment materials for a dedicated pre-treatment system.

Table 5: Pond 3 leachate characteristics<sup>3</sup>

| Parameter              | Average Concentration (mg/l)<br>07/08/2013 – 04/03/2015 | Average Load Delivered to<br>WWTP <sup>4</sup> (kg/day) |
|------------------------|---|---|
| COD                    | 8864  | 734   |
| cBOD <sub>5</sub>      | 3341  | 277   |
| cBOD <sub>5</sub> :COD | 0.4   |   |
| Ammonia-N              | 1584  | 131   |
| DRP                    | 8.3   | 0.7   |
| cBOD <sub>5</sub> :N:P | 403:191:1   |   |
| Chromium               | 4.5   | 0.37  |
| Arsenic                | 1.1   | 0.09  |
| Nickel                 | 0.12  | 0.01  |
| Chloride               | 2031  | 168   |
| Boron                  | 7.4   | 0.61  |
| Alkalinity             | 7910  | 655   |

It is noted that “the Pond 3 leachate data is generally weaker than raw leachate as there are several processes going on in the ponds which are likely to affect leachate quality, including dilution by rainfall, sedimentation affecting particulate species concentrations (e.g. heavy metals) and nitrification/ denitrification reactions affecting nitrogen species concentrations”<sup>5</sup>.

Pond 3 data has been used for this assessment because it is reported by Fraser Thomas Ltd that the leachate is generally tankered off-site from Pond 3. If the leachate ponds are replaced with a tank farm at some future date then higher leachate concentrations, more characteristic of raw leachate, would be expected as a result.

The leachate characteristic concentrations and volumes (but not loads) are affected by rainfall and cover management, for example the volume of leachate tankered offsite in the 2012/2013 financial year appeared to be approximately 30% less than other years from 2010-2014, possibly due to improved cover management and lower rainfall, but also depending upon what dates the calculated year started and finished.

The leachate strength is expected to reduce with time as the landfill ages and stabilises and finally enters ‘aftercare’ stages.

<sup>3</sup> Updated to reflect monitoring to 4 Feb 2015.

<sup>4</sup> Mean load calculated using days on which leachate is tankered to the WWTP only (i.e. average does not include days on which no leachate is delivered in order to represent the real load which the WWTP must treat)

<sup>5</sup> Leachate Management Report, Fraser Thomas Ltd, December 2013



### 4.2.2 Volumes

Leachate (tankered to Marton WWTP) volumetric data from 1/10/2013 – 31/01/2015 is summarised in Table 6 below (leachate logs have been provided back to 1/12/2009).

Table 6: Leachate volume data<sup>6</sup>

|  |                        |
|--|------------------------|
| Percentage of days on which leachate was tankered to Marton WWTP                               | 47%                    |
| Mean leachate volume tankered to WWTP (all days)   | 39m <sup>3</sup> /day  |
| Mean leachate volume tankered to WWTP (mean of days on which leachate tankered only)           | 83m <sup>3</sup> /day  |
| 90 <sup>th</sup> ile leachate volume tankered to WWTP  | 166m <sup>3</sup> /day |
| Maximum leachate volume tankered to WWTP   | 209m <sup>3</sup> /day |
| Percentage of leachate (mean) flow in total WWTP (mean) flow (for leachate tankered days only) | 4.7%                   |

It is noted that these leachate volumes are greater than the mean flows estimated for this stage of the landfill operation by Fraser Thomas Ltd in its December 2013 *Leachate Management Report*. Additionally, as shown in Figure 3 below, the leachate flow is predicted to increase until approximately the year 2055.

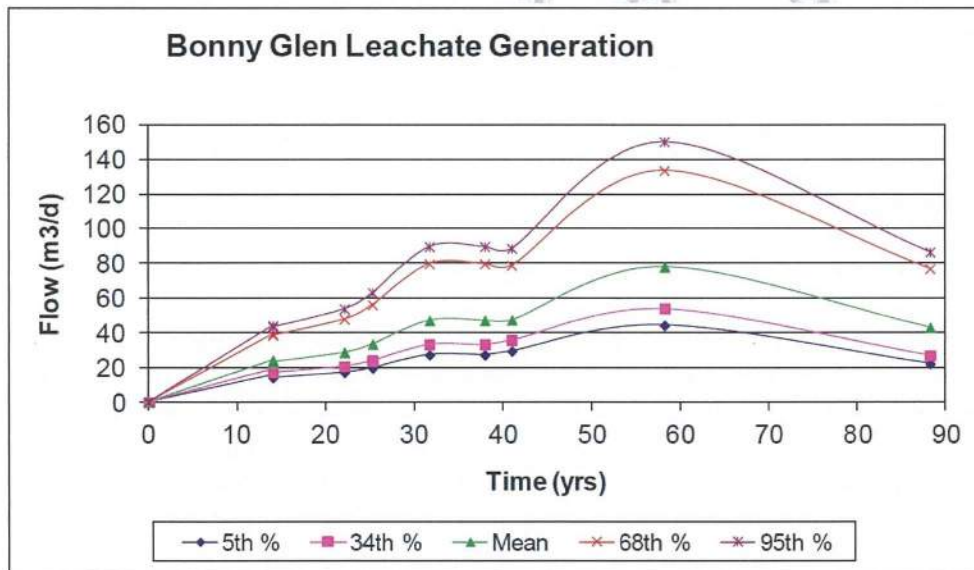


Figure 3: Predicted Bonny Glen leachate flows – normal operation (copied from Figure 2, *Leachate Management Report*, Fraser Thomas Ltd, December 2013). Year zero = 1995.

<sup>6</sup> Data updated March 2015 with additional leachate tanker logs to 31 Jan 2015

## 5 Treatment Plant Loading

### 5.1 Current Loading

Table 7, below, shows the current daily load arriving at Marton WWTP and the contribution that the Bonny Glen leachate makes to this loading.

**Table 7: Current total WWTP loading and proportion of this load attributable to Bonny Glen<sup>7</sup>**

| Parameter         | Total WWTP Loading (kg/day) | Bonny Glen Leachate Loading (kg/day)     | Percentage of WWTP Loading from Bonny Glen Leachate | Bonny Glen Leachate Loading (kg/day)  | Percentage of WWTP Loading from Bonny Glen Leachate |
|-------------------|-----------------------------|--|---|---|---|
|                   |                             | (Load calculated using mean of all days) |   | (Load calculated using days on which leachate is tankered to the WWTP only) |   |
| cBOD <sub>5</sub> | 1028                        | 130                                      | 13%   | 277   | 27%   |
| COD               | 2301                        | 345                                      | 15%   | 734   | 32%   |
| Ammonia-N         | 186                         | 62                                       | 33%   | 131   | 70%   |

The table shows that, on days on which leachate is tankered to the WWTP, the Bonny Glen leachate contributes 70% of the total ammoniacal nitrogen and approximately 30% of the BOD and COD arriving at the WWTP. Based on data from October 2013 to January 2015, leachate is tankered to the WWTP on 47% of days. This means that there are large spikes in the incoming WWTP loading, particularly the ammonia loading, which the WWTP must attempt to balance and treat.

### 5.2 Future Loading

#### 5.2.1 Changes in Bonny Glen Leachate Loading

As stated in Section 4.2.1, from Fraser Thomas Ltd’s December 2013 *Leachate Management Report*, the leachate concentration is expected to reduce with time as the landfill ages and stabilises and finally enters ‘aftercare’ stages. Offsetting this, the leachate volume is predicted to increase with time until approximately the year 2055. Little leachate characterisation data is available but based on 2010 and 2013/14 concentration data and annual leachate volume data, comparisons can be made between the predicted measured leachate loadings. This data is displayed Figure 4 below.

<sup>7</sup> Table update 27/03/2015 to reflect Leachate volumes to Jan 2015 and analysis to March 2015

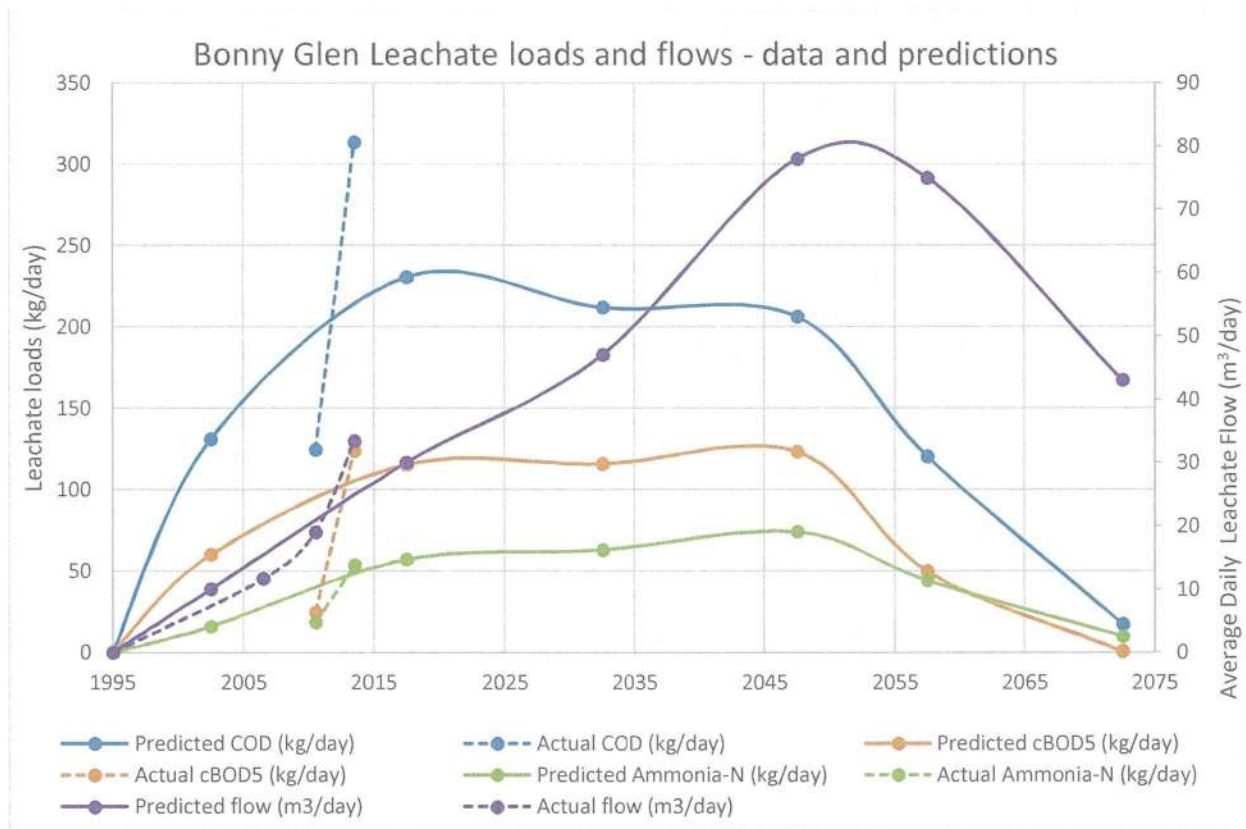


Figure 4: Comparison of predicted leachate loading with loadings to date<sup>8</sup>

Several points should be noted about this graph as follows:

- Predicted loadings were calculated using approximate concentrations and flows at quarterly intervals during the landfill’s active use and in early and late ‘aftercare’ as predicted in 2013 by Fraser Thomas Ltd. This is a simplification to show the overall trend and does not reflect the detail of the various landfilling stages. i.e early landfill stages are already maturing whilst later ones are still in their increasing phases.
- Very little data is available on the concentration of the leachate produced in the early phases (up to 2013). As can be seen in Figure 4 the median measured leachate concentrations available are lower than the predictions so the calculated loads are lower than projected.
- In contrast, the recent leachate flows tankered to Marton WWTP (2013/2014) have been higher than predicted and, while the measured concentrations are still lower than projected in the Fraser Thomas report the loads are higher. The tankered flow volume includes rainfall captured by the Bonny Glen leachate pond system. It will be critical to continue to measure this trend carefully.
- The 2013 Fraser Thomas Ltd concentration predictions indicated that the leachate concentration would be highest in the first quarter (Q1) of the landfill’s active life (1995-2010) and would then reduce significantly throughout the life of the landfill. This expectation has not been supported by the limited sampling undertaken to date and would seem unlikely given the

<sup>8</sup> Predicted loadings calculated using approximate concentration and flow predictions from *Leachate Management Report*, Fraser Thomas Ltd, December 2013. Fig.4 ‘Actuals’ are for data to Oct. 2014, not updated with Mar 2015 data.

projected growth of the landfill and increase in the amount of waste landfilled, i.e. each new cell or stage is essentially a new landfill that will progress through its own Q1 to Q4 lifetime.

- The leachate composition would vary depending on the nature of the waste landfilled, in particular the 'special waste', which is not reflected in Figure 4. For example, the 2013 *Leachate Management Report* refers to the fact that Bonny Glen had been receiving "Foots Drums", a fatty bile by product and a sodium sulphite filter cake (9T/month) high in TKN as well as a significant high pH waste comprising lime fleshings from a tannery, but that this had ceased at the time of writing (December 2013). The *Leachate Management Report* does report that special wastes received at the landfill comprise around 200 -300T of blue hide trimmings from the tannery per month, around 100T of offal waste from a pet food company, and 100T of other wastes including sewage screenings and difficult waste. These will all continue to contribute to organic, nitrogen and phosphorus loading to the leachate. Septic tank sludge is also discharged into the landfill.
- Possible changes to landfill operation, such as replacement of the leachate pond system with a tank farm or improvements in cover management, would change the leachate characteristic concentrations and volumes but not actual loads of each contaminant.

## 6 Description of Effects

### 6.1 General

The current plant generally manages the BOD loading satisfactorily at the moment. Average effluent cBOD<sub>5</sub> is 30mg/l and dissolved scBOD<sub>5</sub> is 3.7mg/l. However the compliance is already marginal and, while the theoretical BOD capacity of the treatment plant has not been reached, the nature of the applicable resource consent condition (receiving water quality) may mean that the nominal capacity of the treatment plant is almost irrelevant. The condition would be breached even if the effluent was increasing the in-stream soluble cBOD<sub>5</sub> by 0.1mg/l resulting in downstream value reaching 2.1 mg/l.

The current plant does not manage the ammonia loading adequately. Average effluent ammonia is 18mg/l. While this is quite reasonable for an oxidation pond system, it is, at times, resulting in the Tutaenui Stream ammonia level reaching 11.4mg/l<sup>9</sup>, from an upstream level of 0.01mg/l. This is both in contravention of the consent condition and acceptable ammonia levels in an inland waterway. We note, however, with reference to Figures 4 and 5 below, that, when there is a sustained period without leachate discharge to the treatment plant, the plant is able to almost completely nitrify the effluent and would be expected to be compliant with the ammonia condition during that period.

The plant does not manage effluent turbidity adequately. Average effluent turbidity is 31mg/l. Receiving water downstream turbidity is regularly exceeding the 20NTU limit, even when the upstream level is approximately 2NTU.

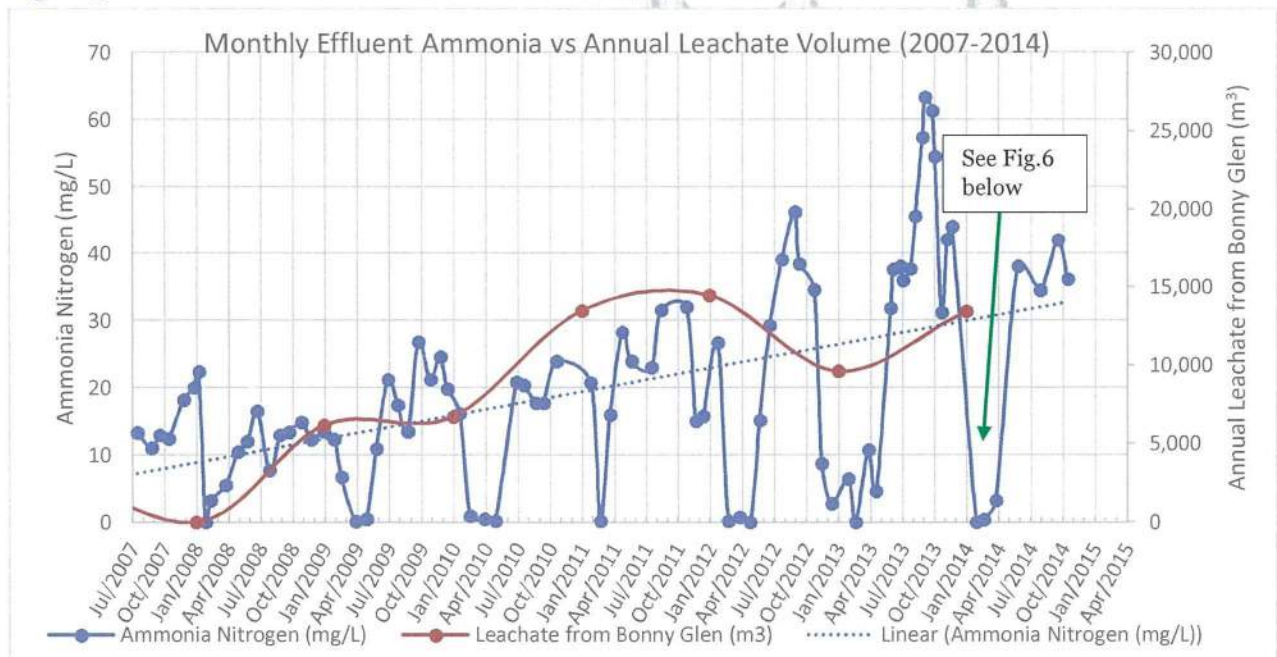
<sup>9</sup> From January 2010 sampling

## 6.2 Effluent Ammonia

The leachate discharged into the Marton sewer system appears to have a significant effect on effluent ammonia from the treatment plant. Figure 5 provides an indication of how the effluent ammonia levels are trending, over time, as the annual volume of leachate increases.

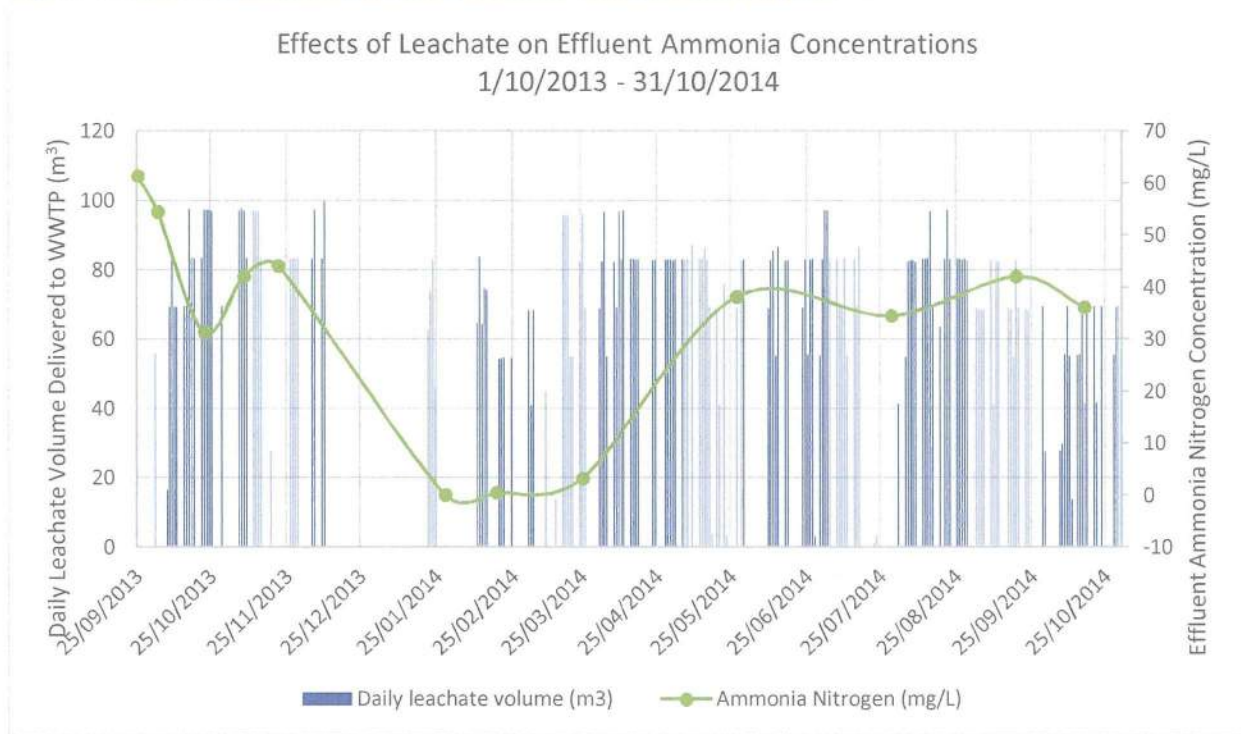
Clearly there are significant short term variations around this trend and these are likely to be associated with the temporal pattern of leachate discharge to the sewer. Figure 6 provides detail of the only period of time when we have both detailed treatment plant flow and leachate tanker logs available concurrently. The December 2013 to February 2014 data, together with the regular low points in the Figure 5 plot, is strongly suggestive that, in the absence of significant loading from leachate, Marton WWTP is able almost completely nitrify its effluent, given appropriate climatic conditions. It would be very beneficial to obtain leachate tanker logs from 2007 to 2009 to confirm (or not) this observation<sup>10</sup>. It should also be noted that, even if this observation is correct, there would almost certainly be seasonal variations in nitrification, with cooler temperatures slowing down the process.

Figure 5: Marton effluent ammonia vs annual leachate volumes



<sup>10</sup> Figures 5 and 6 in Draft 4 have not yet been updated to reflect the supply of the earlier leachate logs (from 20010 – 2013).

Figure 6: Marton Effluent Ammonia correlated with Leachate disposal



### 6.3 Colour and Disinfection

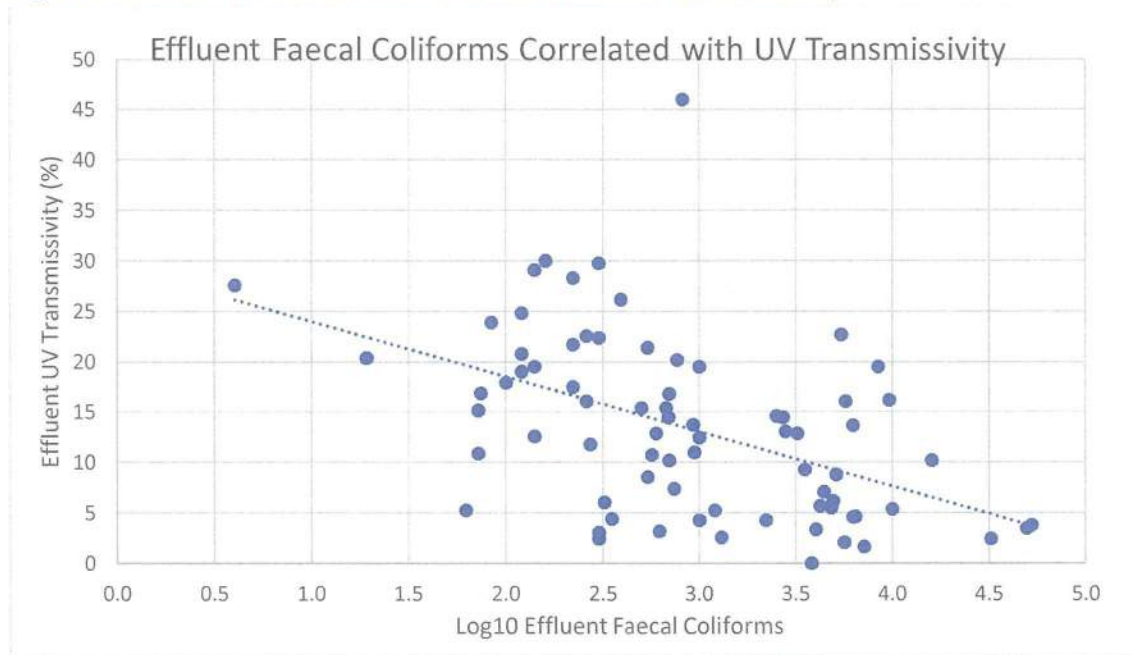
Figure 7 below presents the trends in effluent colour and turbidity. While both of these fluctuate significantly the general trend in effluent colour is strongly positive while the turbidity remains approximately flat. Dissolved colour is known to have a significant effect on UV transmissivity and hence on the effectiveness of ultra-violet disinfection systems.

Figure 8 below demonstrates the general negative correlation between decreasing UV Transmissivity and increasing effluent faecal coliforms.

Figure 7: Marton WWTP Effluent Colour & Turbidity Trends



Figure 8: Effluent Faecal Coliforms correlated with UV Transmissivity



The positive trend in effluent ‘Colour’ and the negative trend in effluent transmissivity appear to follow the increasing trend in annual leachate volume and are affecting the ability of the Marton WWTP to provide sufficient disinfection of the effluent. We note however that other issues such as the hydraulic capacity of the installed UV system should also be reviewed.

## 7 Options for Management of Leachate Load

### 7.1 General

There are various options or combinations of options available to treat the Bonny Glen landfill leachate so it is managed appropriately. If the leachate is the primary reason why the Marton WWTP is non-compliant then these options should significantly assist the Marton WWTP to revert back to compliant operation. The following sections describe four broad approaches to the future treatment of leachate generated by Bonny Glen Landfill. Within each broad approach, there will be a multitude of sub-options that can be considered at the preliminary design stage and during the selection of suppliers and calculation of whole of life cost.

### 7.2 Do-Nothing

#### 7.2.1 Description

Continue discharging the leachate to the Marton WWTP and processing it through the existing plant.

#### 7.2.2 Possible Process Options

N/A

### 7.2.3 Advantages

No cost.

### 7.2.4 Disadvantages

- Council assumes all the risk for treatment of the leachate.
- Continued consent non-compliance. This would likely eventually lead to abatement notices and other subsequent actions.
- Heavy metals of concern continue to accumulate in and contaminate the oxidation pond sludges making ultimate disposal a more difficult and costly proposition.

### 7.2.5 Key Risks

- Leachate loading continues to increase and the situation worsens, making any delay in implementation of works more undesirable.
- Significant risk of eventual legal action and loss of reputation

## 7.3 Duplicate Anaerobic Pond

### 7.3.1 Description

We understand that there is currently a proposal to install a second anaerobic pond to help deal with the leachate loading. This would be a simple and easily achieved upgrade. It would basically consist of a small, deep, plastic lined lagoon constructed adjacent the existing anaerobic lagoon. It would then discharge into the facultative pond.

### 7.3.2 Advantages

- Easy to build and comparatively cheap.
- All treatment is under the control of Council.
- Council has the ability to provide appropriate additional capacity to accept other trade wastes.
- When the leachate and domestic waste are fully mixed, the balance of constituents is likely to be more conducive to successful, stable biological treatment.

### 7.3.3 Disadvantages

- The process would be unlikely to carry out the key functions that will allow the overall plant to produce compliant effluent:



- Will not remove colour and so the plant will continue to fail to disinfect adequately and be non-compliant in terms of receiving water turbidity.
- Will not reduce ammonia. The greater anaerobic capacity will likely result in a greater amount of organic-N being released into the water column as ammonia.
- The greater anaerobic capacity will likely improve BOD<sub>5</sub> removal performance but the existing system already performs reasonably well in this respect and the improvement is unlikely to be sufficient to allow full nitrification and denitrification to be completed in the facultative and maturation ponds.
- Council assumes all the risk for treatment of the leachate.
- Continued consent non-compliance. This would likely eventually lead to abatement notices and other subsequent actions.
- Heavy metals of concern continue to contaminate to accumulate in and contaminate the oxidation pond sludges making ultimate disposal a more difficult and costly proposition.

#### 7.3.4 Key Risks

- Process being ineffective at countering the effects of the leachate loading

### 7.4 Upgrade Marton WWTP

#### 7.4.1 Description

This option would involve upgrading the Marton WWTP to manage the entire flow and load to the treatment plant and produce compliant effluent. Two key outcomes are required. That is:

1. To oxidise the ammonia load imposed by the leachate.
2. To reduce the effect of the high colouration of the landfill leachate.

The leachate would be mixed with the raw sewage and the entire flow would pass through the screens, anaerobic pond, secondary system and tertiary processes.

The existing tertiary treatment systems, comprising a pressure filter cell, 4 recirculating sand filters (RSF) and the UV disinfection system, are reported to, currently be reasonably ineffective.

The Pressure filter cell is reported to have 'not worked' and is not used.

The sand filters are said to blind very quickly when a coagulant is applied to the maturation pond effluent and passed through the filters. The effluent is thus dosed directly to the filters without chemical addition and this has some, but insufficient effect in reducing suspended solids, colour or turbidity.

Because of the residual turbidity and colouration of the effluent and, possibly, dissolved organics in the leachate, the effluent UVT is very low and so the UV disinfection performance is limited.

Process upgrades would be required to deal with the ammonia load, and colour and hence UV disinfection for the entire plant effluent flow

#### 7.4.2 Possible Process Options.

The following are potential options for upgrading of the Marton WWTP. At the time of preparing this report, they have been identified based on experience and the type of contaminant removal that each is known to provide when correctly sized, designed, built and operated.

##### **Options for oxidation of the leachate ammonia:**

- a. Install a fully aerated lagoon between the anaerobic pond and the Facultative pond. Provide sufficient aeration to oxidise the BOD remnant and all of the ammonia. This would probably take the form of a PE lined, 3-4m deep lagoon within the footprint of the existing facultative pond. Without a clarifier, the preferred hydraulic residence time would be of the order of 10 days (SRT = HRT) but we know that the work can be done in less time than this if high flows are bypassed around the aerated lagoon. This was done in the original Beachlands-Maraetai upgrade c2002 with a HRT of 3 days, albeit at a higher temperature.
- b. As for a. above but including a formal clarifier. This would reduce the lagoon size required and improve the efficiency of solids retention and hence the nitrification process.
- c. Install a fully aerated batch reactor lagoon between the anaerobic pond and the Facultative pond. Provide sufficient aeration to oxidise the BOD remnant and all of the ammonia. This would probably take the form of a PE lined, 3-4m deep lagoon within the footprint of the existing facultative pond. Power supply and aerators would be larger than for a. above due to only aerating 16 out of 24 hours. Floating decanters would be required, sized to transfer quarter of a day's flow in approximately 1 hour. Because of the limited hydraulic profile through the site, the contents of the decant sump would need to be pumped through at the same rate to the facultative pond.
- d. Processes a – c above would initially be operated as nitrifying processes only with the objective of denitrifying the effluent in the two pond system downstream. However they would be configured so that they could be easily modified with recycles to at least partially denitrify internally.

##### **Options for management of colour turbidity:**

After commissioning of the main biological upgrade, operate and monitor the treatment plant carefully and ascertain whether there is still a need for colour removal. It is possible, but unlikely, that the more intensive aeration system may consume the organic compounds contributing to the colour. The following are potential upgrade options:

- a. Install an ozonation plant upstream of the tertiary filters. This would both oxidise the compounds creating the colour and would provide disinfection, effectively replacing the UV disinfection system which, visually, appears to be hydraulically overloaded. As well

as being a strong oxidant, the ozone acts as a micro-flocculation and the filters will likely provide some consequential benefit of particulate removal.

- b. Install a lamella style clarifier between the maturation pond and tertiary filters. Capacity would need to be of the order of 160m<sup>3</sup>/hr to cater for the 95<sup>th</sup> percentile daily effluent flow from the plant. This would be dosed with some form (to be established by pilot trialling) of organic coagulant, producing a sludge that is readily disposed of without the objections to metal salts, and, in particular, alum. This option may require upsizing or renewal of the UV system if ozone is not used. An additional benefit is removal of further BOD, nitrogen and phosphorus through the coagulation and physical settlement process.
- c. Install an 'Actiflo' ballasted clarifier between the maturation pond and tertiary filters. Capacity as for 'b' above. Because of the ballasting effect of the sand, this clarifier would have a smaller overall footprint than the simple lamella clarifier. This would be dosed with some form (to be established by pilot trialling) of organic coagulant, producing a sludge that is readily disposed of without the objections to metal salts, and, in particular, alum. This option may require upsizing or renewal of the UV system if ozone is not used.

#### 7.4.3 Advantages

- All treatment is under the control of Council.
- Council has the ability to provide appropriate additional capacity to accept other trade wastes.
- When the leachate and domestic waste are fully mixed, the balance of constituents is likely to be more conducive to successful, stable biological treatment.

#### 7.4.4 Disadvantages

- Council assumes all the risk for treatment of the leachate.
- The overall cost is likely to be higher than for a stand-alone leachate pre-treatment facility because the entire hydraulic loading of the treatment plant needs to be catered for. This makes all infrastructure significantly larger than for a stand-alone, leachate only system.
- Requires additional consideration of management of the solids inventories from the fully aerated systems. These could be discharged into the facultative pond where they would stabilise (and eventually release) bound up N & P, or they could be discharged into a dedicated, deep sludge lagoon with surface aeration and effluent which is directed back to the anaerobic pond.
- An Ozonation system would have both high capital and operating costs if applied to the full Marton WWTP flow volumes.
- Heavy metals of concern continue to accumulate in and contaminate the high rate and oxidation pond sludges making ultimate disposal a more difficult and costly proposition. If Bonny Glen is a Class A landfill, they would likely be able to receive

dewatered sludge from the oxidation pond system. A Class B rating may result in restrictions. The volume of sludge to be disposed however would also include the entirety of the residual from domestic accumulation as well as the more recent trade waste sludge. Future negotiation of a Trade Waste Agreement with Bonny Glen should include provision for reciprocal receipt of sludge from the treatment plant. However, there may be other, more economical disposal methods available (e.g. on site monofilling). Careful characterisation of the make-up and volume of accumulated sludge would be required for any potential sludge disposal option.

#### 7.4.5 Key Risks

- Council will have to accept variable leachate volumes and strengths which could compromise process stability.
- The future volume and strength of the leachate is unknown and the aerobic processes described here would be very difficult to modularise on the site. This would be a very high risk.
- Council assumes all treatment risks.
- Operating costs for sufficient and appropriate chemicals and electricity
- Risks within the sewer system remain.

### 7.5 Pre-Treatment of Leachate at Marton WWTP

#### 7.5.1 Description

Provide a stand-alone pre-treatment facility for the leachate, located at Marton WWTP.

Leachate would continue to be tankered from Bonny Glen but would be delivered all the way to the WWTP instead of being discharged into the Marton WWTP reticulation.

Effluent could be discharged into either the anaerobic pond or facultative pond.

#### 7.5.2 Possible Process Options

The facility would likely comprise 4 stages, typical of other dedicated leachate treatment facilities around the world. Ideally, the plant would be built in steel or concrete tanks and arranged to facilitate a flow through arrangement. However, given the topography of the site, it is likely that flows will at least need to be pumped from the storage and contact tanks up to the first process. Flows to the head of the existing treatment plant currently flow by gravity, through to the tertiary processes from where pumping is required.

- a. Balancing or buffering storage.

An objective would be to keep this facility as small as possible and thus feed it at a near constant rate. To do this and account for holidays, weekends (i.e. more tankers immediately after a weekend or public holiday) and maintenance, storage

tanks would be provided ahead of any treatment process. Leachate would be screened and de-gritted before placing in storage, unless there is already facility for this at the landfill site. The variable rainfall and production rates at the landfill are already catered for by the existing leachate ponds. Alternative leachate management regimes could be applied at the landfill. For example, pumping directly into enclosed storage tanks. This would reduce additional volume created by rainfall but would prevent loss by evaporation. A leachate system water balance would be required to determine the most appropriate regime.

b. Physico-Chemical separation.

Physico-Chemical Separation of the leachate could take one of two basic forms as follows:

- i. Coagulation – Lamella Clarifier, or
- ii. Sand Filter – Cartridge Filter – Reverse Osmosis (RO). This would be more suited to use at the treatment plant where brine could be disposed of on site. See following section.

c. Aerobic biological stabilisation

Typically, this would take the form of a small sequenced batch reactor. The purpose of this is to oxidise both the organic constituents and the ammonia. A single tank reactor would suffice as inflow does not have to be continuous and the buffering tanks could hold back inflow during the settle and decant cycles.

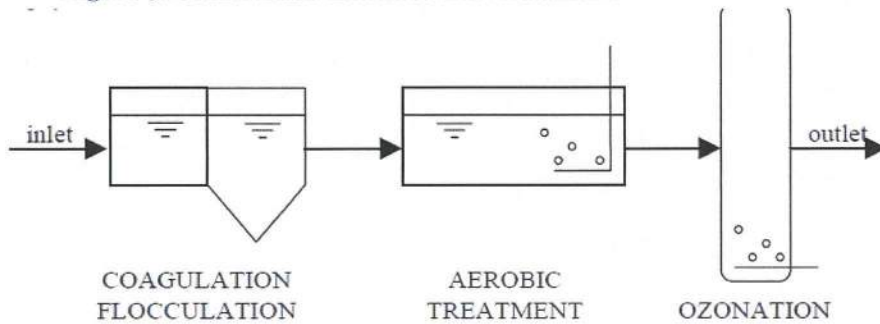
An aerobic treatment stage may require supplementary phosphorous addition to ensure an adequate nutrient balance for sufficient biological growth to be maintained.

d. Ozonation

If still required following biological treatment, post ozonation would be used as an advanced oxidation process to destroy the colouration which, downstream, affects proper operation of the UV disinfection system. Ozone is an advanced oxidation process whereby  $O_3$  decomposes in water through a number of decomposition reactions, to  $H_2O$  and  $O_2$ , with various oxidising free radicals formed and destroyed along the way. Ozone is most commonly used as a disinfection process.

Internationally, it is very common in large potable water treatment plants. In New Zealand, ozone generators are most commonly found in domestic spa pools and domestic water treatment packages.

Figure 9: Stand Alone Leachate Pre-Treatment



### 7.5.3 Advantages

- Can be configured fully modularly to cater for future, unknown, leachate quantity and strength.
- Capital cost is mitigated by having to only cater for the leachate volume rather than the entire flow to Marton WWTP. Therefore, total capital and operating costs are likely to be lower than for a wholesale upgrading of the entire plant.
- Operating costs are mitigated because power and chemical costs are directed only at the leachate contaminants and are not increased by non-differentiation of domestic contaminants.

### 7.5.4 Disadvantages

- Council assumes all the risk for treatment of the leachate.
- Introduces complex treatment processes to the treatment plant that will require some additional training and familiarisation.
- Need to thicken and transfer the residual sludge back to the landfill.

### 7.5.5 Key Risks

- Council assumes all treatment risks.
- Operating costs for sufficient and appropriate chemicals and electricity

## 7.6 Pre-Treatment of Leachate at Bonny Glen Landfill

### 7.6.1 Description

In this option the leachate will continue to be buffered in the existing ponds. A standalone leachate pre-treatment facility will be developed at the landfill site. Treated effluent will be tankered to Marton sewer system, or directly to the WWTP for ultimate discharge through the Marton WWTP consent. Treatment options and stages as per those discussed in section 7.5 above but with a few variations or possible variations.

## 7.6.2 Possible Process Options

The facility would likely comprise 4 stages, typical of other dedicated leachate treatment facilities around the world. Ideally, the plant would be built in steel or concrete tanks and arranged to facilitate a flow through arrangement. However, given the topography of the site, it is likely that flows will at least need to be pumped from the storage and contact tanks up to the first process.

a. Balancing or buffering storage.

Utilize the existing leachate ponds to provide all the necessary buffering. One only pre-treatment tank would be required to provide coagulant contact time prior to the lamella clarifier.

b. Physico-Chemical separation.

Physico-Chemical Separation of the leachate could take two basic forms as follows:

- i. Coagulation – Lamella Clarifier, or
- ii. Sand Filter – Cartridge Filter – Reverse Osmosis (RO). Would likely not require stages c & d below. However further investigation would be required as to whether this treatment train would remove sufficient ammonia. The brine from the two stage RO would be sprayed back over landfill cells – preferably those that are soon to be capped. Currently Hampton Downs landfill in north Waikato is planning to install this form of treatment on site to eliminate the tankering of their leachate to Wiri where it is currently discharged into the Watercare sewage interceptor.

c. Aerobic biological stabilisation

This could take place in a small lined pond, possibly near the existing ponds at the Bonny Glen landfill site. If ground conditions are not favourable to construct a pond (e.g. groundwater levels are too high) then a concrete structure can be constructed for this purpose instead. Typically, this would take the form of a small sequenced batch reactor. The purpose of this is to oxidise both the organic constituents and the ammonia. A single tank reactor would suffice as inflow does not have to be continuous and the buffering tanks could hold back inflow during the settle and decant cycles.

An aerobic treatment stage may require supplementary phosphorous addition to ensure an adequate nutrient balance for sufficient biological growth to be maintained.

d. Ozonation

If still required following biological treatment, post ozonation would be used as an advanced oxidation process to destroy the colouration which, downstream, affects proper operation of the UV disinfection system. Ozone is an advanced oxidation process whereby  $O_3$  decomposes in water through a number of decomposition reactions, to  $H_2O$  and  $O_2$ , with various oxidising free radicals formed and destroyed along the way. Ozone is most commonly used as a disinfection process. Internationally, it is very common in large potable water treatment plants. In New Zealand, ozone generators are most commonly found in domestic spa pools and domestic water treatment packages.

### 7.6.3 Advantages

- Landfill assumes all the risk for treatment of the leachate.
- Ability to 'turn off the valve' if pre-treatment is not to an acceptable level.
- Can be configured fully modularly to cater for future, unknown, leachate quantity and strength.
- Capital cost is mitigated by having to only cater for the leachate volume rather than the entire flow to Marton WWTP. Therefore, total capital and operating costs are likely to be lower than for a wholesale upgrading of the entire plant.
- MDL can also mitigate its CAPEX exposure by choosing the quality and form of the build. For example, the biological process could be carried out in a lined pond in the ground, and, additional influent buffer storage would not be required because the ponds already provide that functionality on site.
- Operating costs are mitigated because power and chemical costs are directed only at the leachate contaminants and are not increased by non-differentiation of domestic contaminants.
- Thickened (and probably dewatered) residual sludge can be disposed of back into the landfill in a more stable form than that in which it was extracted.

### 7.6.4 Disadvantages

- Introduces complex treatment processes to the Landfill that will require some additional training and familiarisation.

### 7.6.5 Key Risks

- Landfill assumes all treatment risks.
- Landfill not pre-treating to agreed standards but insisting effluent is received into Marton WWTP
- Operating costs for sufficient and appropriate chemicals and electricity

## 7.7 Options Summary

Figure 10 provides a provisional, qualitative summary of the potential types of upgrade strategy that could be applied to manage treatment and disposal of leachate from Bonny Glen Landfill. Simplistically, Green means 'Good', Orange means 'OK' or 'Average' and Red means 'Not Good'. Each category could be subdivided further and or a quantitative scoring system applied based on actual cost estimates and informed consideration by key affected parties. This matrix has generally been prepared considering the likely perspective of RDC. This matrix is a starting point only for the decision making and has been prepared unilaterally by the author. On that basis, the matrix should be reviewed and verified by the key interested personnel and a full multi-criteria analysis (MCA) workshop could be adopted.



Figure 10: Preliminary qualitative assessment of option attributes

|                               | Compliance | CAPEX<br>See S7 | OPEX<br>See S7 | Complexity | Small<br>Volume<br>TW<br>Flexibility | Large<br>Volume<br>TW<br>Flexibility | Risk to<br>Council | Residuals                     |
|-------------------------------|------------|-----------------|----------------|------------|--------------------------------------|--------------------------------------|--------------------|-------------------------------|
| Do Nothing                    | Red        | Green           | Green          | Green      | No capacity                          | No capacity                          | Red                | Metals in sludge              |
| Add anaerobic Pond            | Red        | Yellow          | Green          | Green      | Green                                | Green                                | Red                | Metals in sludge              |
| Whole WWTP, High Rate Aerobic | Yellow     | Red             | Red            | Yellow     | Green                                | Yellow                               | Yellow             | Much sludge. Metals in sludge |
| On Site Pre-Treatment         | Green      | Yellow          | Yellow         | Red        | Green                                | **                                   | Yellow             | Transport back to Landfill.   |
| Landfill Site Pre-Treatment   | Green      | *               | *              | Red        | Green                                | **                                   | Green              | Left at Landfill              |

\*From Council perspective.

\*\*If additional leachate storage capacity is included with the pre-treatment system than this cell can be changed to orange.

## 8 Cost Estimates

### 8.1 Approach

Cost estimates have been produced for the two proposed leachate pre-treatment options (outlined in section 7.5 and section 7.6) as these are the most likely to be considered for implementation. Both options are only in broad conceptual state and accurate costing is not possible at this time. As the combinations of waste type and volume and small unit sizes are unusual in New Zealand, it has not been possible to use broad parametric costing techniques. Therefore, for estimating purposes, we have built up the concepts with as much detail of individual components as practical to ensure a reasonable degree of coverage of the items that would be involved. Accurate sizing of components and quantification of consumables has not been possible within the time and scope of this report. Rough initial estimates have been made and these will be subject to considerable refinement at a later stage.

The following conceptual cost estimates have been made:

- Capital cost (CAPEX) assessments. The CAPEX has been developed by applying minimum, most likely and maximum values to the quantities and rates to the relevant items and running @Risk simulations to calculate the statistically likely costs for the total of the work.
- Annual operating costs.

- 20 year Net Present value (NPV) analysis that considers both CAPEX and operational costs (OPEX).
- Annualised total cost.

At this time, the level of accuracy of the cost estimating is likely to be in the range of +/- 30-50%

@Risk software is a MS Excel add-on that is frequently used for cost estimating purposes at the earlier stages of a capital works project. It provides for high degrees of uncertainty to be allowed for in the estimates. This is done by performing uncertainty analysis using Monte Carlo analysis to calculate the range and probability of possible outcomes that can occur from the range of input values, as well as calculating the likelihood of each outcome occurring. @Risk also allows correlations to be applied to items that are likely to have strong costing relationships (i.e. civil works, mechanical equipment, and electrical works) to ensure that the total cost variation is not underestimated. This technique is ideally suited to the very early phases of a project where levels of uncertainty are very high, both in terms of quantities and cost rates.

Costs estimates have been compiled using information provided by suppliers and estimates from other recent WWTP construction reports. An inflation rate of 2.5% and a 'cost of capital' rate of 6% have been assumed. The cost estimates include allowances for contract 'Preliminary and General' costs, fees investigations and contingencies.

The cost estimates have been based on very preliminary sizing and no detailed process modelling has been undertaken to confirm sizing. Costs were derived assuming a flow intake of 40m<sup>3</sup>/day. The plant unit processes would modular and allow for future duplication or longer working hours if necessary.

## 8.2 Cost Estimate for Leachate Pre-Treatment at Marton WWTP

The capital cost required for the pre-treatment system at the Marton WWTP is likely to be in the range \$2.3 to \$3.0 million (this cost is in current dollars). The capital cost analysis included the following costs:

- A balance storage tank (80m<sup>3</sup>)
- 11kV spur line and new transformer to the anaerobic pond area.
- A Lamella clarifier with coagulant and flocculant dosing
- A sequenced batch reactor equipped with blowers, diffusers and a decanter. The SBR would be configured in a 4m deep steel or concrete tank.
- A supplementary carbon dosing system (probably required for nitrogen removal)
- Ozonation unit (potentially required for residual colour removal)
- Dewatering system – as the sludge (containing heavy metals) would be required to be transported back to the Bonny Glen Landfill, compressing the sludge to 18% dry solids would reduce transportation costs and ensure the material could be handled in the landfill.

The @Risk modelling allowed for the uncertainty on whether the carbon dosing system and ozonation units would be required.

We have assumed that the Marton WWTP has sufficient land available to construct the pre-treatment system on site near the anaerobic pond.

The annual operational cost calculation included the following components:

- The additional power required for the running of the pre-treatment system (pumps, blowers, ozone generator). Power cost at 27.9c/kW.hr in line with invoices received from RDC. This also assumes that all necessary cBOD<sub>5</sub> reduction will be done in an aerobic process. In reality, the pre-clarifier would remove some of this load.
- Additional operator hours and chemical supplies required. Supply of supplementary carbon for denitrification constitutes a significant proportion of the cost.
- Only additional transport costs. Currently the leachate from the Bonny is discharged into Marton's wastewater reticulation system. In this option the leachate will need to be trucked a further distance to Marton WWTP. The additional distance is 5.5km (Approx). For our operating cost analysis we have allowed for 4 x 11 km round trips/day to transport the leachate to the WWTP. We have also allowed for the transportation of dewatered sludge from the Marton WWTP back to the landfill (approximately 14 km), 1 trip every 15 days.
- Dewatering system has been provided for if necessary – as the sludge (containing heavy metals) would be required to be deposited back into the Bonny Glen Landfill compressing the sludge to 18% dry solids would ensure the material could be easily handled in the landfill.
- A contingency of 30%

Our costing analysis only considers the operational costs incurred from the transport of the leachate to the pre-treatment system and the running of the pre-treatment system. The operational costs associated with the treatment of the leachate through the existing WWTP have not been included in this costs analysis.

The annual operating cost of \$491k equates to \$33.60/m<sup>3</sup>. However, to provide some perspective, if we consider this on the basis of a domestic strength effluent, the cost would be approximately \$2.20/m<sup>3</sup> based on cBOD<sub>5</sub> or \$1.05/m<sup>3</sup> based on ammonia.

The NPV for the first 20 years of the pre-treatment system life (assuming the upgrades were completed in 2017 and system commenced operation 2018) is \$8.3M million (based on the median CAPEX price). This value is discounted to \$2015 yr.

The present annualised cost has been estimated at \$680k (annual capital recovery factor + annual OPEX at the first year of operation, discounted back to \$2015 yr). This equates to \$47/m<sup>3</sup> leachate.

### **8.3 Cost Estimate for Leachate Pre-Treatment at Bonny Glen Landfill**

The estimated capital cost required for the pre-treatment system at the Bonny Glen landfill is likely in the range \$1.5 to \$1.9 million (this cost is in current dollars). The capital cost analysis included the following costs:

- A balance storage tank (40m<sup>3</sup>)
- A Lamella clarifier with coagulant and flocculant dosing
- A sequence batch reactor equipped with surface aerators and a decanter. This is configured in a lined, 4+ m deep earthen lagoon. The earthen lagoon approach would be cheaper than a concrete or steel tank. However, the floating surface aerators are less efficient than diffused air aeration and would be more expensive to operate.
- A supplementary carbon dosing system (probably required for nitrogen removal)
- Ozonation unit (potentially required for residual colour removal)

The @Risk model allowed for the uncertainty on whether the carbon dosing system and ozonation unit will be required.

It has been assumed that the Bonny Glen Landfill has enough land available to construct the pre-treatment system on site.

The NPV included the following costs:

- The additional power required for the running of the pre-treatment system
- Additional operator hours and chemical supplies required
- The additional power required for the running of the pre-treatment system (pumps, aerators, mixers, ozone generator). Power cost at 27.9¢/kW.hr in line with invoices received from RDC. This also assumes that all necessary cBOD<sub>5</sub> reduction will be done in an aerobic process. In reality, the pre-clarifier would remove some of this load.
- Additional operator hours and chemical supplies required. Supply of supplementary carbon for denitrification constitutes a significant proportion of the cost.
- No additional transport costs. Currently the leachate from the Bonny is discharged into Marton's wastewater reticulation system. If the pre-treatment system is constructed at the Landfill and still to be disposed of through Marton WWTP the leachate will still need to be transported directly to the Marton reticulation.
- A contingency of 30%

Our costing analysis only considers the operational costs incurred from the transport of the leachate to the pre-treatment system and the running of the pre-treatment system. The operational costs associated with the treatment of the leachate through the existing WWTP have not been included in this costs analysis.

The annual operating cost of \$355k equates to \$24.30/m<sup>3</sup>. However, to provide some perspective, if we consider this on the basis of a domestic strength effluent, the cost would be approximately \$1.60/m<sup>3</sup> based on cBOD<sub>5</sub> or \$0.76/m<sup>3</sup> based on ammonia.

The NPV for the first 20 years of the pre-treatment system's life (assuming the upgrades were completed in 2017 and system commenced operation in 2018) is \$5.6 million (based on the median CAPEX price).

The present annualised cost has been calculated as \$540k (annual capital recovery factor + annual OPEX at the first year of operation, discounted back to \$2015 yr). This equates to \$37/m<sup>3</sup> leachate.

## 9 Summary

The following summary is made of the work to date:

- Marton WWTP is configured as a domestic cum municipal wastewater treatment based upon pond technology. It is not well suited to provide high levels of treatment to significant industrial trade wastes of a complex nature.
- The discharge consent for Marton WWTP (expires 2019) is unusual in that all the numerical limits refer to in-stream water quality values that are influenced by upstream water quality. Thus, compliance with each limit is not solely dependent on the treatment plant effluent quality.
- The treatment plant is not heavily loaded from a domestic perspective. However, the leachate appears to apply high loads of ammonia and colour carrying compounds (which affect disinfection and effluent clarity and colour). There are also a number of heavy metals of concern and more work is required with regard to the accumulation of these in the treatment plant sludge.
- RDC has entered into a trade waste discharge agreement with Malteurop. There is an apparent lack of monitoring data (both flow and strength) and this should be remedied.
- Loading from the Leachate is significant (despite low volumes) compared to domestic loading on the treatment plant and from predictions provided by the owners, the loading is likely to continue increasing in the short to medium term.
- It appears that, when no leachate is added to the treatment plant for an extended period, the treatment plant can produce very good quality effluent. More detailed historical and future data is required to confirm this suspected trend.
- A 'Do Nothing' approach would not be valid.
- A WWTP upgrade using a further anaerobic pond had previously been suggested. Such an option may free up some biological capacity in the ponds but is unlikely to provide the types of improvement required to provide compliant effluent and allow for the likely future increase in leachate loading.
- Based on the initial, qualitative and unilateral assessment and without the benefit of cost estimates the most favourable option for Council was likely to be a stand-alone leachate

pre-treatment facility. This would preferably be situated at the landfill site. However, it would be premature to make a final decision based on the current level of assessment.

- Initial, concept based, cost estimates for dedicated pre-treatment facilities indicate the capital cost would be between \$1.5 and \$3.0 and that the annual operating costs of such a facility, treating 40m<sup>3</sup>/day, could range between \$355k and \$491k / year +/- 30%.
- Council and Midwest Developments need to:
  - Enter dialogue and confirm an intended method of long term management of the Bonny Glen Leachate,
  - Develop and agree an appropriate form of trade waste agreement for whatever methodology that is, if it involves Council facilities,
  - Review and amend monitoring, sampling, testing and data management programmes to ensure that sufficient and appropriate data is always available for the assessment and management of this trade waste.
- We understand that Midwest Developments are also considering their own conceptual design for a leachate pre-treatment system at the landfill site.

## 10 Conclusion

Based on the cost assessments of conceptual leachate pre-treatment schemes it appears that establishing a leachate pre-treatment facility at Bonny Glen Landfill itself will be the most cost effective option. It is also likely to present the lowest risk for Council.

RDC currently charges the Bonny Glen Landfill operator \$15/m<sup>3</sup> of leachate that is discharged to the Marton WWTP. If RDC undertake the installation and running of a pre-treatment system on the WWTP site, the trade waste charges could potentially increase to around \$60+/m<sup>3</sup> to cover the existing fees as well as the additional capital and operational expenditure. A minimum of \$45/m<sup>3</sup> would be required to cover the capital and operational costs of the pre-treatment system.

It may be possible for Bonny Glen to treat their leachate to a standard where it could be discharged from the landfill via their stormwater consent, therefore achieving considerable savings in transport and trade waste charges. However, removing that much nitrogen and phosphorus would likely be onerous. This option would most likely require another tertiary treatment unit (e.g. activated carbon filter) in addition to the pre-treatment system proposed in this report. Further investigation is required to ascertain if this is a viable solution and to calculate the additional capital and operational costs involved. Alternatively, there may be options available to Midwest to dispose of the treated leachate effluent via a local discharge consent or by irrigation back over the landfill cells as is practiced in some landfills.

## 11 References

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- Eckenfelder, W.W., 2000, Industrial Water Pollution (3<sup>rd</sup> Ed.). pp467-70. McGraw-Hill.
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# Attachment 5



**Rangitikei**  
UNDEFEATED...

# REPORT

**SUBJECT:** Tendering Streetlight Maintenance

**TO:** Assets/Infrastructure Committee  
Hamish Waugh, General Manager Infrastructure

**FROM:** Reuben Pokiha, Operations Manager Roothing

**DATE:** 2 April 2015

**FILE** 6-RT-5-12

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## 1 Background

- 1.1 Rangitikei District streetlight maintenance has been carried successfully out by contract for almost 20 years by Alf Downs Street lighting Limited. The current contract has a term of 3 years with extensions of 2 periods of 12 months (3+1+1). The Contractor has had one extension of 12 months and is eligible for the second period of 12 months based on good performance. Alf Downs has indicated its desire to take up this extension. The contract is due to expire on 28 February 2016.
- 1.2 Currently Alf Downs Street lighting also has the contract for both Manawatu and Horowhenua Councils. These two contracts are due to expire on 30 June 2015.
- 1.3 The proposed contract documentation for the three Districts is similar. There are efficiencies to be achieved by sharing the costs of compiling, tendering and evaluating the works.

## 2 Tendering Process

- 2.1 Compiling the tender documents is underway as a shared service project between the 3 Districts. The expectation is the 3 Districts will be tendered very soon and at the same time. The tender documents will recognise that work in Horowhenua and Manawatu Districts will start on 1 July 2015 and Rangitikei will start 1 March 2016. The evaluation process would use the Price Quality Method that assesses contractor the ability of the Contractor to undertake the works.

2.2 There are several options for tendering the works:

1. A combined tender;
2. Partly combined with the option of a grouped tender;
3. Individual District tenders with the option of grouped tenders.

The tendering process is also expected to identify the preferred tender that provides the best outcome for the District as either collectively or as part of a group tender.

#### Option 1

2.3 The combined tender option would group the three districts into the one contract document, with districts having their own schedules. This approach maximises the economies of scale and minimises tenderers' costs. However, it does not confirm that a larger contract has delivered lower costs due to economies of scale.

#### Option 2

2.4 A tender that combines two Districts (Manawatu and Horowhenua) into one contract and the remaining District into a second contract (Rangitikei) with the option of a grouped tender for both contracts. This model will identify whether the individual tenders or the group tender is the preferred option. This model has limited options with the result that it is relatively straightforward to evaluate and confirm the preferred tender.

#### Option 3

2.5 The final option is individual tenders for each district with the option of a grouped tender of either two or three networks. This model will identify whether the individual tenders or the group tender option of two or three networks is the preferred option. This model is the most complex to evaluate due to the three levels of options to consider for all tenderers.

### **3 Conclusion**

3.1 The preferred tendering model is Option 2 – i.e. a tender that combines Manawatu with Horowhenua Districts into one contract and Rangitikei District being the second contract with the option of a group tender. This model tests whether there are economies of scale to be obtained by grouping the Districts. The advantage of this option over Option 3 (individual tenders per District with the option of grouped tenders) is that the evaluation process is more straightforward.

3.2 Option 1 – the combined tender over three districts – is the simplest for tenderers to price and evaluate by the tender evaluation team. However, this option does not prove that the anticipated economies of scale have been achieved due to one set of schedules being priced.

#### **4 Recommendations**

- 4.1 That the report "Tendering streetlight maintenance' be received
- 4.2 That the tendering model used for Streetlight maintenance is Option 2: partly combined – Contract No.1 – Manawatu/Horowhenua and Contract No.2 – Rangitikei with the option of a grouped tender over the two contracts.

Reuben Pokiha  
Roading Operations Manager

# Attachment 6



## Office of Hon Amy Adams

Member of Parliament for Selwyn

Minister of Justice

Minister for Courts

Minister of Broadcasting

Minister for Communications

26 MAR 2015

His Worship Andy Watson and Ross McNeil  
Mayor/Chief Executive  
Rangitikei District Council  
Private Bag 1102  
**MARTON 4741**

RECEIVED

04 APR 2015

To: AW & RM  
File: 3-EP-3-8  
Doc: 15 0188

Dear Mayor Watson and Mr McNeil

I'm seeking your input on why your area should be a priority for the Government's next investment in better connectivity for New Zealanders and how you would support the rollout.

You may be aware I recently announced the Government's decision to extend the Ultra-Fast Broadband (UFB) and Rural Broadband Initiative (RBI) programmes, and establish a new Mobile Black Spot Fund (MBSF).

This presents a significant opportunity for your council to make a credible difference to the telecommunications infrastructure of your area.

Local authorities are being asked to identify how they will support new infrastructure being deployed under these programmes and the priority areas for coverage in their district.

The information received from local authorities and communities will be a core part of our deciding the amount, type and location of infrastructure to be deployed in this next phase.

This Government is committed to providing the best possible telecommunications infrastructure in order to deliver world-class connectivity that will drive innovation, create jobs and grow New Zealand's economy.

We've already committed \$1.65 billion through the first phase of the UFB and RBI programmes to deliver faster broadband to 97.8 per cent of New Zealanders by 2020. A further commitment of up to \$360 million to extend these programmes and establish a new mobile coverage initiative means an even greater percentage of New Zealanders will have access to fast broadband and mobile networks.

The additional money includes a further investment of between \$152 million and \$210 million for the UFB extension will deploy fibre-to-the-premises infrastructure to additional towns and urban areas outside of the existing UFB footprint, to achieve at least 80 per cent population coverage.

The RBI extension of an additional \$100 million will focus on enhancing connectivity for areas that fall outside the UFB footprint.

A \$50 million MBSF will expand mobile coverage into black spot areas of the main highways and popular tourist areas.

In order to prioritise areas for deployment of each programme, I have announced a multi-step selection process that will be led by the Ministry of Business, Innovation and Employment.

To register interest, local authorities need to complete a *Registration of Interest – Support (ROI – Support)* document. This seeks information and commitments on how you intend to prepare your district to take advantage of broadband or mobile investment, and demonstrate how broadband infrastructure will benefit your communities.

Local authorities can facilitate deployment by providing means of reducing the costs and risks of deployment processes. For example you could:

- facilitate consenting processes
- identify existing locally-owned infrastructure, which may make deployment more efficient
- encourage awareness and use of infrastructure in your communities
- commit to potential investment options.

Your local authority is also encouraged to submit a Digital Enablement Plan as part of your *ROI – Support* submission, outlining the initiatives you would implement in your communities to achieve the social and economic objectives of broadband and mobile investment.

The *ROI – Support* document can be found online at: <http://www.med.govt.nz/sectors-industries/technology-communication/fast-broadband/new-initiatives>.

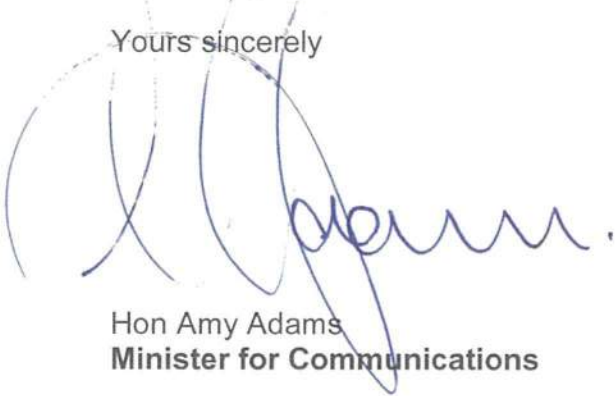
I am working with Local Government New Zealand to provide local authorities with further information on how they can attract broadband and mobile investment. You will receive an invitation to attend a virtual briefing session in due course.

*ROI – Support* submissions are called for from local authorities by 12.00pm, Friday, 3 July 2015, while Digital Enablement Plans are due by 12.00pm, Friday, 18 September 2015.

Based on the information provided from councils and infrastructure providers, the Government will select towns and areas for deployment of the UFB and RBI extension programmes and the MBSF.

I strongly encourage your local authority to take up this opportunity and register your interest in the UFB and RBI extension programmes and the MBSF in order to achieve significant benefits from world-class connectivity for your communities.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Amy Adams', with a large, stylized flourish on the left side.

Hon Amy Adams  
**Minister for Communications**



# Attachment 7



# REPORT

SUBJECT:           **Consent Compliance – Jul 2014 to Mar 2015**

TO:                 Assets/Infrastructure Committee

FROM:             Joanna Saywell – Utilities Asset Manager

DATE:             31 March 2015

FILE:             5-EX-4

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## **1 Introduction**

- 1.1 This report is a summary of Rangitikei District Council's compliance with resource consent conditions from Horizons Regional Council, for the period July 2014 to March 2015. Information on compliance has been derived from communications with Tracey Kirwan (water supply) and Robert Rose (wastewater), compliance monitoring officers at Horizons, as well as formal reports from them.
- 1.2 Council is in the process of implementing Water Outlook software that will enable live reporting of data to Horizons as well as internal staff. Work is progressing well, with some live data already coming into Water Outlook from water and wastewater treatment plants across the District.
- 1.3 All the consents with Horizons have been reviewed to ensure that continuous reporting requirements can be included in Water Outlook and that the remaining reports (annual compliance, emergency discharges, in stream monitoring etc.) are included and up-dated when required. For this Horizons require certain flow meters to be verified for accuracy. These are now on a programme for verification. This applies to both water supply and wastewater.

## **2 Water Supply**

- 2.1 The table below shows the compliance of each water supply scheme against consent conditions. Only those schemes for which Rangitikei District Council is the consent holder have been shown.

Table 1: Consent Compliance – Water Supply

| Scheme            | Compliance                         | Comments   | Actions   |
|-------------------|------------------------------------|--|---|
| Marion            | Compliant                          |  |   |
| Taihape           | Non-compliant for abstraction rate | Issue with pipeline.   | Flow meter needs to be verified. Horizons have accepted proposal to discharge excess water take back to Hautapu Stream. Construction planned before summer 2015-2016. Winter flows have been within limits. |
| Bulls             | Compliant                          |  |   |
| Mangaweka         | Non-compliant                      | High water use has caused exceedances during summer. This is being investigated within the village.  | A flow limiter has been installed on the flow to the water plant so that water extraction does not exceed consent limits. However, the limiter has failed to operate on a number of occasions.              |
| Ratana            | Not assessed                       | Abstraction rate monitoring not in place at existing bore.   | Consent to use new bore for production has been acquired; flow monitoring will be installed as part of work required on the new bore, treatment plant and reservoir.  |
| Erewhon Rural     | Compliant                          | Two more weir gaugings needed, plus further information on the eight already completed.  | Taihape Plumbing has been engaged to carry out weir gaugings. Horizons has confirmed that weir gaugings can proceed at low flows.   |
| Hunterville Rural | Compliant                          |  |   |
| Omatane Rural     | Non-compliant                      | Non-compliance for abstraction at Omatane 3-11 Dec 2014 due to leak which has now been repaired. No other non-compliances within reporting period. | No further action required.   |

### 3 Wastewater

3.1 Compliance against consents is shown per wastewater treatment plant (WWTP) in the table below.

Table 2: Consent Compliance - Wastewater

| Scheme    | Compliance      | Comments  | Actions  |
|-----------|-----------------|---|--|
| Marton    | Non-compliant   | Ammoniacal nitrogen and short-circuiting. Leachate from Bonny Glen potentially very high in ammonia. "Please explain" letter received from HRC and response sent. Meeting has been arranged with HRC for April. Complaint received for odour from anaerobic pond. | Effects report received from Opus on options for dealing with leachate. Report to be presented to RDC in April. Further monitoring required in stream to establish effects on environment from the high nitrogen in the discharges from the site. Operators installing equipment to suppress odours during warm weather. |
| Taihape   | Non-compliant   | Non-compliant for flow. Flows to WWTP are in excess of capacity. Particularly following rain events. Issues with Inflow & Infiltration (I&I), plus WWTP undersized. Potentially non-compliant for <i>E. coli</i> and suspended solids.                            | Upgrade works have been proposed and costed at \$450,000. This work is planned for 2015-2016, and is included in the 2015-2025 Long Term Plan. Meeting arranged with HRC in April to discuss problems around the emergency flows and approach to deal with I and I.  |
| Bulls     | Consent expired | Council have given direction to proceed with application for discharge to water, with investigation of land disposal during summer months.  | Consent renewal in progress.   |
| Mangaweka | Compliant       |   |  |

| Scheme       | Compliance    | Comments  | Actions  |
|--------------|---------------|---|--|
| Huntermville | Non-compliant | Compliance report received for 2013-14. Non-compliant for several items including flow gauging and frequency of emergency discharges. | Hydrologist Mary-Anne Watson in negotiations with Horizons over design of gauging site. I&I work underway to reduce flows to WWTP. Upgrade to enable treatment during high flows being investigated. Data will be provided to Horizons on frequency of emergency discharges and options to address this issue. Emergency discharge meter to be repaired. |
| Ratana       | Compliant     | Proposed Waipu Trust subdivision will impact WWTP.  | WWTP will be upgraded to improve effluent quality and cater for growth. Options currently being investigated by Opus.  |
| Koitiata     | Non-compliant | Irrigation field undersized. Inflow meter required.   | Estimate for work to address effluent disposal issues is \$250,000. Koitiata Wastewater Reference Group formed to confirm selected option and will meet in mid April. Inflow meter to be installed by May.   |

#### 4 Recommendation

- 4.1 That the report 'Consent Compliance – Jul 2014 to Mar 2015' to the Assets/Infrastructure Committee meeting on 9 April 2015 be received.

Joanna Saywell  
Utilities Asset Manager