

# STAFF REPORT

**TO:** Chairman and Members, Engineering Services Committee  
**FROM:** Jeff Cuthbertson, Utilities Manager  
**DATE:** 25 June 2010  
**SUBJECT:** **UTILITIES MANAGEMENT REPORT – RESC10-07-06**  
Report prepared for meeting of 8 July 2010

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## 1 UTILITIES GENERAL

### Contract 688

Downers have undertaken all proactive, routine and non-routine maintenance on the water/wastewater treatment plants, pump stations, reservoir sites and stormwater assets as scheduled within their May and June 2010 programme.

May and June have again proved to be challenging months in relation to balancing proactive and reactive maintenance works. The periods of rain and flooding events have in particular, caused strain on wastewater and stormwater networks.

Monthly contract meetings were held on 19 May and 16 June 2010.

### Contract 688 Performance Standard Monitoring

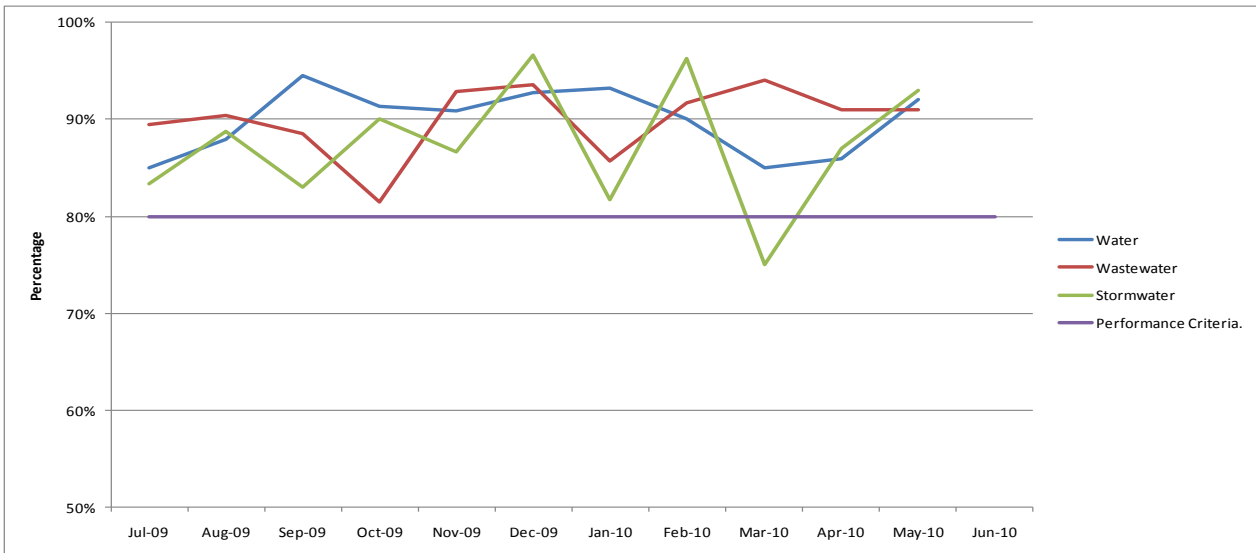
In accordance with the contract, MWH undertook a random selection of audits on various portions of the water, wastewater and stormwater networks, the results are summarised below:

Contract 688 Performance Measurement Audit scores July 2009 to June 2010

	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
Water	85%	88%	95%	91%	91%	93%	93%	90%	85%	86%	92%	
Wastewater	89%	90%	89%	81%	93%	94%	86%	92%	94%	91%	91%	
Stormwater	83%	89%	83%	90%	87%	97%	82%	96%	75%	87%	93%	
Performance Criteria.	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%

Contract performance standard measurement target requirement is to achieve a minimum score of 80% in any one discipline.

The results show a general trend upwards overall in performance audit scores for May compared to the previous month.

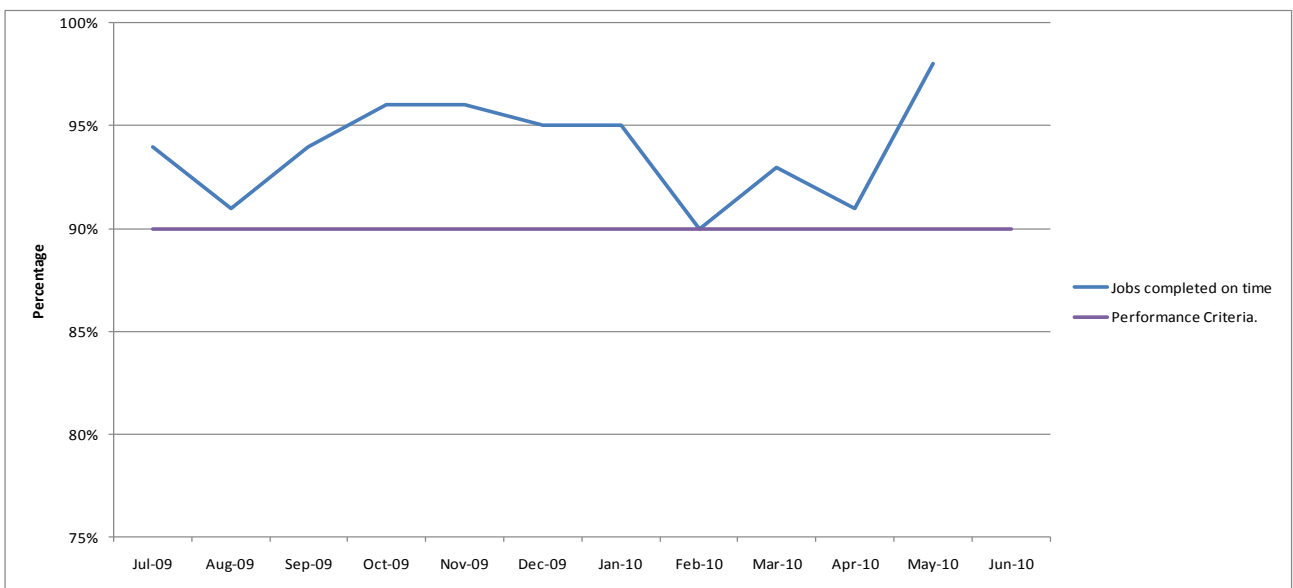


### Customer Services - Job Completion

Targets under Contract 688 are for the contractor to achieve a score of 90% or more of jobs completed on time. Downers have achieved a commendable 98% completion rate and continue to perform well in this area of contract performance. The detail below summarises their performance in this area from July 2009 to date.

Contract 688 Performance Measurement scores achieved July 2009 to June 2010 - Jobs completed on time												
	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
Jobs completed on time	94%	91%	94%	96%	96%	95%	95%	90%	93%	91%	98%	90%
Performance Criteria.	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%

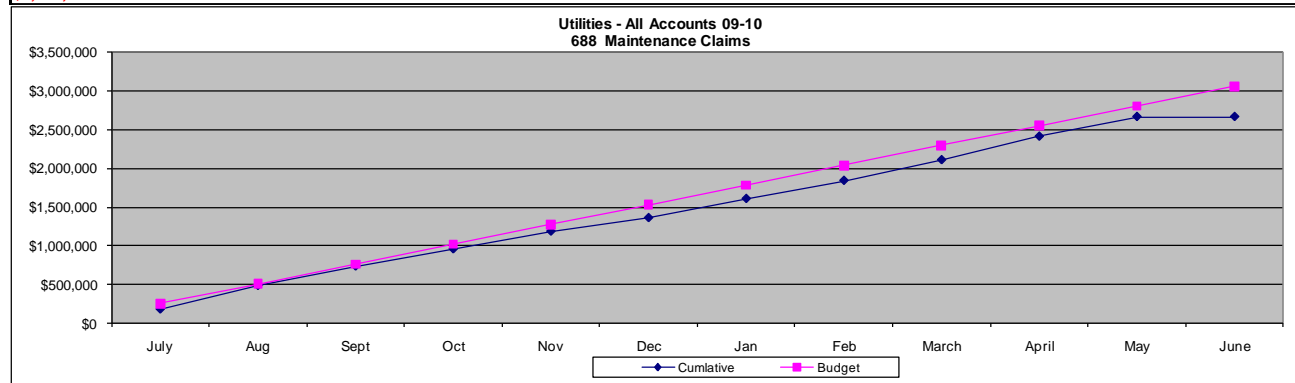
Tasman District Councils' customer service job completion on time target = minimum of 90%



## Financial Performance

The financial information for Contract 688 to the end of May 2010 is detailed below. The overall utilities budget continues to track well and currently sits at 95% of budget. No major fluctuations are expected in the remaining weeks of the financial year.

ALL UTILITIES												
Month	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June
Claim	\$180,786	\$304,867	\$250,150	\$221,534	\$228,740	\$174,361	\$246,894	\$234,044	\$266,468	\$303,449	\$253,989	\$0
Cumulative	\$180,786	\$485,653	\$735,803	\$957,337	\$1,186,077	\$1,360,438	\$1,607,332	\$1,841,376	\$2,107,845	\$2,411,294	\$2,665,283	\$2,665,283
Budget	\$255,128	\$510,255	\$765,383	\$1,020,510	\$1,275,638	\$1,530,766	\$1,785,893	\$2,041,021	\$2,296,148	\$2,551,276	\$2,806,403	\$3,061,531
	<b>\$3,061,531</b>	71%	95%	96%	94%	93%	89%	90%	90%	92%	95%	87%



## Contract 688 – Second Operational Period

Downers have been awarded the rollover of Contract 688 into the second operations period from July 2010 to June 2013. A partnering meeting between Tasman District Council, MWH and the contractor was held on 20 May 2010. This was a positive meeting with all parties agreeing that the first three years of the Contract have been successful.

## 2 WASTEWATER NETWORKS

The chemical dosing system continues to be utilised on the Pohara/Takaka sewerage scheme is having a significant effect in reducing the levels of H<sub>2</sub>S in the system. There are some ongoing odour issues at the Sunbelt Crescent pumpstation and staff are working closely with the contractor to find a resolution. There has been additional odour logging at this site and investigation continues at the adjacent contributing pumping stations to identify the main contributors to the high levels of H<sub>2</sub>S. Monitoring at the Mapua Wharf sewerage pumpstation is being investigated with the potential to install similar chemical dosing mechanisms to control the odour issues experienced at this location.

### 2.1 Wastewater Exceptions

- 09/05/10 640 Abel Tasman Drive – both the 100mm sewer rising mains developed leaks during the previous week. Repairs were made on 9 May.
- 10/05/10 Riwaka sewer line. Line monitoring completed as per specifications.
- 13/05/10 Brightwater Sewer Main Pump station - new control panel and generator installed.
- 14/05/10 Riwaka – All flow-meters on the sewer line were re-zeroed
- 20/05/10 Collingwood Wastewater Treatment Plant –controller unit was replaced due to a lightning strike. The malfunction caused intermittent communication

failures and caused the UV dose alarms to malfunction.

- 30/05/10 Motueka – A leak on the rising main air-valve unit online from Riwaka to Motueka occurred. The leak was contained.
- 06/06/10 Kaiteriteri – the Kaiteriteri Vessel overflowed due to a communications failure. A connection on the controller unit was reinstalled and communications were restored. Clean up undertaken.

### Sewer Blockages / Overflows

- 06/05/10 Clifton/Pohara - 100mm sewer rising main between Clifton and Pohara burst. Approximately 2m<sup>3</sup> of wastewater discharged and cleaned up. Rising main repaired.
- 09/05/10 Pohara - 100mm Sewer Rising Main burst on Abel Tasman Drive, approximately 200 meters from Sewer Pump Station. Approximately 2m<sup>3</sup> of wastewater discharged and cleaned up. Rising main repaired.
- 06/06/10 Kaiteriteri - wastewater overflowed from Kaiteriteri Vessel of approximately 5m<sup>3</sup>. Corroded connection in controller unit resulted in communications failure. Controller unit repaired and clean up undertaken.
- 08/06/10 Richmond, 17 Kihilla Road - blockage in manhole resulted in approximately 2m<sup>3</sup> of wastewater overflowing into resident's garden. Blockage cleared, overflow cleaned up and disinfected.
- 08/06/10 Takaka - blockage cleared in lateral serving public toilets/ sewer pump station. No overflow occurred.
- 10/06/10 Takaka - blockage cleared in lateral serving public toilets/ sewer pump station. No overflow occurred. Similar incident to that occurring on the 08/06/10.

### Wastewater Treatment Plants

Environmental and performance monitoring was routinely undertaken at all Wastewater Treatment Plants (WWTPs) during May and early June 2010. This report covers the period from 1 May to 8 June 2010.

The table below indicates whether full compliance with resource consent conditions was achieved at each WWTP. Where full compliance was not achieved, the likely factors contributing to the non-compliance are discussed below.

WWTP	Compliance	If no, why?
Collingwood	Yes	
Motueka	Yes	
Murchison	Yes	
St Arnaud	No	No discharge volumes recorded, flow-meter repaired
Takaka	Yes	
Tapawera	No	Low dissolved oxygen in oxidation pond
Upper Takaka	No	High flows to WWTP, soakage area ponding

### **Collingwood**

Low UV alarms were recorded intermittently between 18 and 24 May 2010. These were found to be the result of a hardware issue. The controller unit was found to be damaged by lightning and was replaced. Three rounds of sampling found that full UV treatment was still occurring while these alarms were going off and no adverse impact on the receiving environment occurred. Samples were taken from the final marsh cell, the UV discharge, and upstream and downstream of the discharge into Burton Ale Creek.

### **St Arnaud**

No daily discharge volume readings are available from 11 May to 2 June 2010. This was due to a faulty flow meter, which was repaired and reinstalled on 2 June. Daily discharge records are required as per the discharge consent for the St Arnaud WWTP. The Compliance Department was notified that this flow meter was out of action and being repaired. Daily incoming wastewater and rainfall volumes recorded at the WWTP indicate that the daily discharge limit would not have been exceeded during this time.

### **Tapawera**

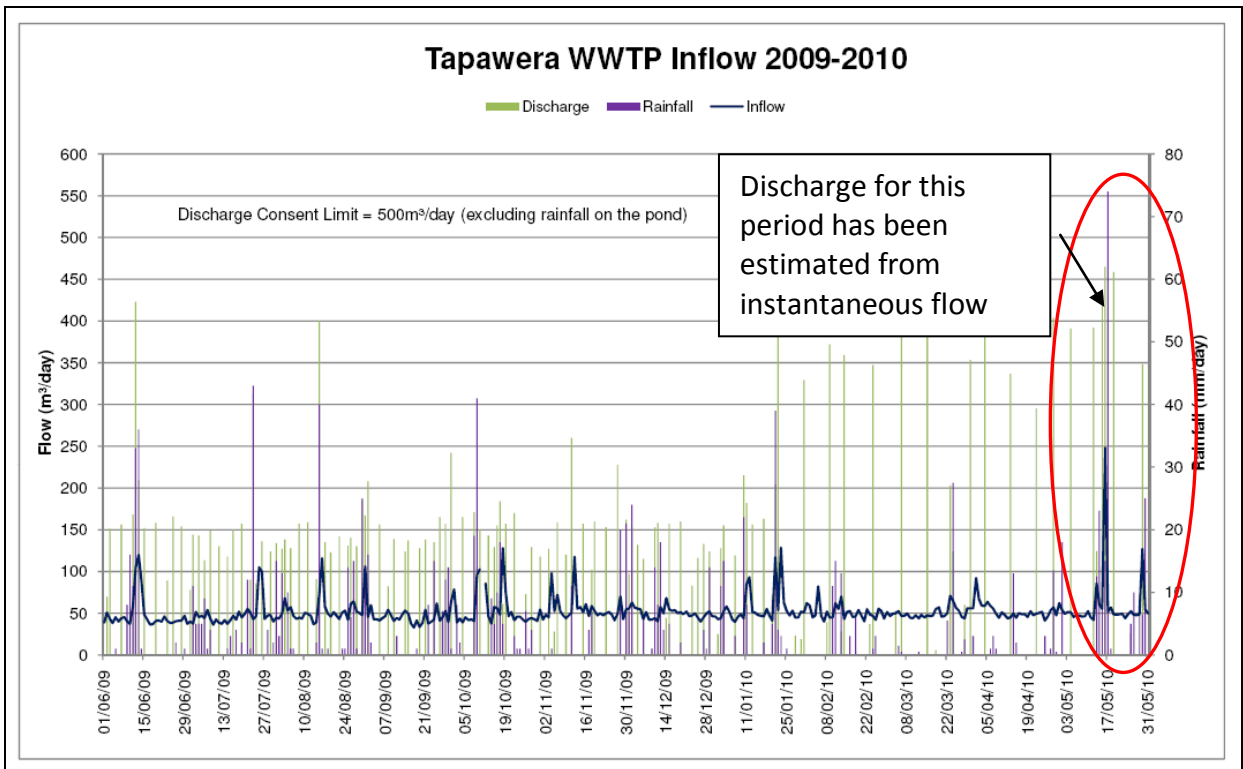
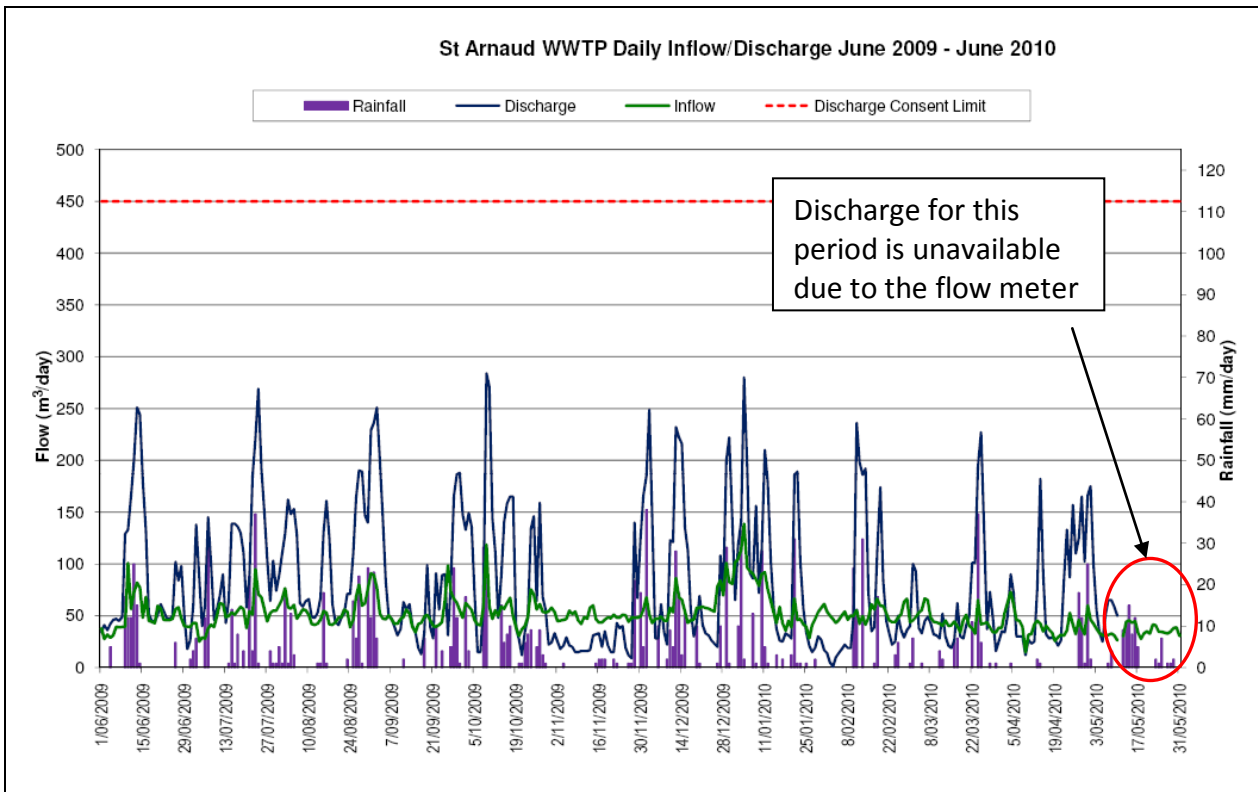
Low dissolved oxygen (DO) was recorded in the oxidation pond on the 19 May 2010. No odour from the WWTP was recorded by the contractor. A request to have the DO limit removed is being processed by the Consents Department.

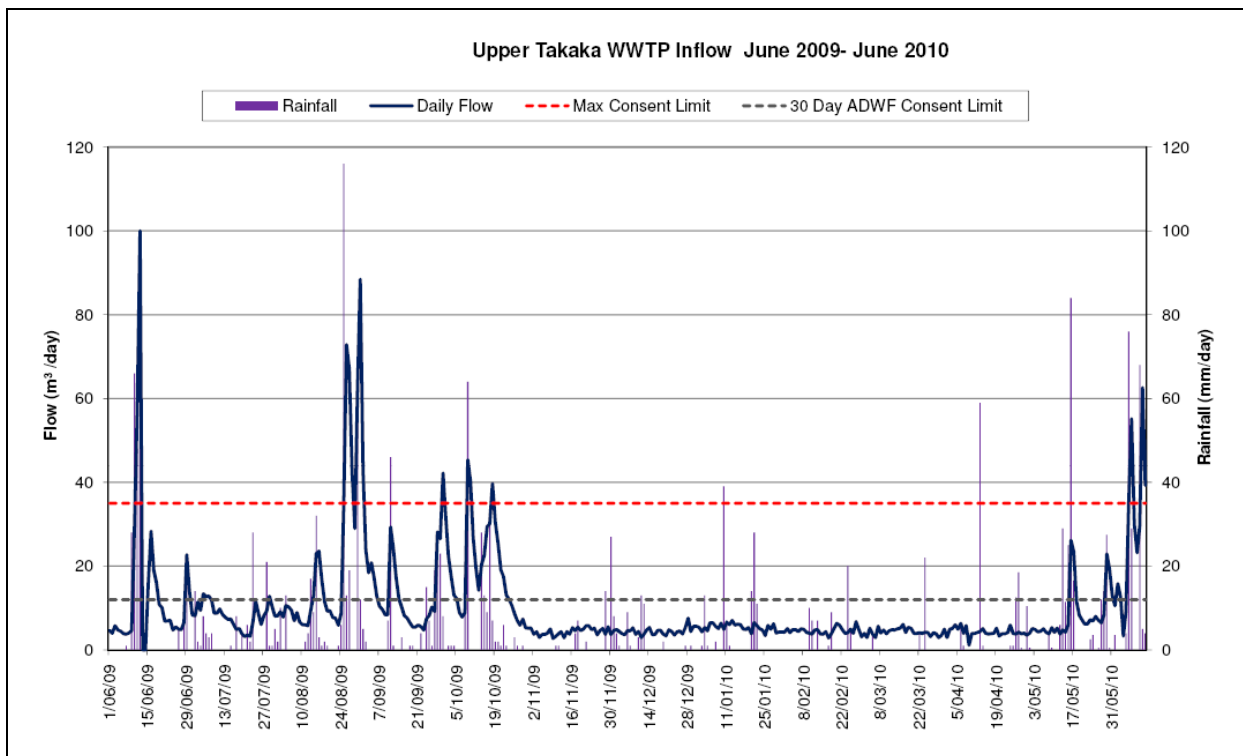
### **Upper Takaka**

Flows exceeding the consent limit of 35m<sup>3</sup>/day were recorded entering the Upper Takaka WWTP on 6 and 7 June (35.58m<sup>3</sup> and 55.17m<sup>3</sup> respectively). These high flows were attributed to 110mm of rain falling between 5-7 June, including 75mm on the 6 June.

Pooling of wastewater/water on the Upper Takaka WWTP soakage area was also recorded by the Operations and Maintenance Contractor following the rainfall event mentioned above.

\* Only flow graphs for non-compliant WWTPs have been included.





## 2.3 Wastewater Capital works

- **Delaneys Pumpstation and Rising Mains, and Collingwood Motels Pumpstation**

Ching Contracting have attained practical completion for this contract. The Collingwood Motels upgrade work is also complete. The total project was completed within budget and allocated timeframes. Landscape planting around both of the pumpstation sites is due to be carried out.

- **Motueka Sewermain Renewals**

The sewer upgrade constructed in conjunction with the proposed New Zealand Transport Agency reconstruction of High Street from Whakarewa to Tudor Streets has been substantially completed within the last month.

- **Rabbit Island Rising Main**

Ching Contracting continue to make steady progress installing the new PE rising main, the section along Rabbit Island is complete and work continues on Bell Island. Junction chambers have been installed in sequence with the pipeline and the demanding estuary crossing between Rabbit and Bell Islands was successfully completed. The expected project completion date is late August 2010.

- **Takaka WWTP Upgrade**

Detail design is being progressed. There is an option to have two contracts, one for the construction of the wetland and one for the construction of the treatment plant.

- **Headngly Lane Pump Station**

Tenders closed 26 May. The contract has been awarded to Fulton Hogan Ltd. Easement negotiations with landowners for the rising main are being finalised. Construction is planned to start mid-July 2010.

- **Motueka Wastewater Treatment Plant Rapid Infiltration Basin (RIB) trial**

The initial results of the RIB trial have been encouraging with the RIB performing well and showing little detectable impact on the groundwater environment. The testing has confirmed a complex interaction of the tide with the groundwater system beneath the site and the testing programme is to continue for 12 months.

### 3 WATER NETWORKS

**Leak detection programme:** A programme of water usage assessment and leak detection investigation on all the urban supply networks is underway. Each scheme will be assessed and investigations undertaken by the end of December 2010. The rural schemes have been omitted from this process due to the extensive nature of the pipeline networks and the difficulty in practically undertaking leak detection in a number of areas. The intention with these schemes is to continue to utilise the line bulk meters to assess the usage. This has proved successful in locating faults and leaks on the rural networks.

Work has been undertaken to remedy some of the most significant leaks found following the leak detection survey of Brightwater. This has resulted in a significant reduction in the percentage loss.

Overall the water supply networks continued to operate satisfactorily with relatively few operational issues. Heavy rain caused issues typical for surface water takes, in particular the lower intake of the Dovedale scheme.

#### 3.1 May Exception Report

06-05-2010	Wakefield Main Pump Station - leak on contact tank drain, new fittings and drain valve fitted.
07-05-2010	Motueka, High Street South – outside school, split 200 mm PVC main.
10-05-2010	Waimea Pump Station - chlorinator fault caused by power spike.
16-05-2010	Dovedale - low reservoir levels caused by storm debris blocking intake.
20-05-2010	Church Street Richmond - 100 AC main broke twice.

#### 3.2 New Water Connections/Disconnections

Connect new sections of water main	55 Angelus Avenue	Richmond
	Seaton Valley Road	Mapua
Connect Stage 3 water main	13A Talbot Street	Richmond
	Dealyn Road	Waimea

#### 3.3 Water Capital Projects

- **Richmond Water Renewals**

This contract has been awarded to Downers. The work has commenced and involves the replacement of water meters in various Richmond streets. The contract is expected to be completed by September this year.



- **Water Renewal Projects 2009/10**

Work continues on portions of the Water Renewal Programme. Water meter replacements and rider-main renewals in Murchison are almost complete. Tenders for the Richmond water renewals contract for 2009/10 and 2010/11 are currently being evaluated.

#### **4 STORMWATER NETWORKS**

Heavy rainfall was recorded throughout May with warnings received for the periods 11–16, 22–24 and 26–31 May. The 11–16<sup>th</sup> event produced the most rain with major flooding issues in the Tapawera-Baton area. Checks were carried out prior to each rainfall event and post-event cleaning was also carried out on the key stormwater network intake points.

A new portion of stormwater network on Old Wharf Road was connected into the Woodlands drain during the month. The Wharf Road gates were operated to control the tide while the connection was made.

The new cut-off drain in Bill Wilkes reserve is operating well with no reported flooding issues at 24 Rochfort Drive. There is a steady flow of intercepted groundwater discharging from the system.



*Woodlands Drain looking toward Old Wharf Road*

#### **4.1 Stormwater Capital Projects**

- **Richmond (Reservoir Creek Dam)**

The dam impounding the former reservoir for the Richmond water supply is located on private property above Richmond, on Reservoir Creek. Parts of the dam structure are over 100 years old and are not engineered to current standards.

Council has been working on a remedial works programme to lower water levels in the reservoir and has a resource consent application ready for lodging. Council is also negotiating for purchase of the land on which the dam is located.

Earlier this month increased seepage and a slump in the dam crest were observed on site and the decision was made to lower water levels in the reservoir by siphon. Further investigations indicated some erosion under the spillway structure and a new temporary spillway was constructed. This work was completed on 18 June.

Following the identification of this issue, a review of the proposed remedial works has been initiated and will be reported to the committee at a future meeting.



*Construction of temporary spillway (Reservoir Creek Dam)*

- **Ruby Bay (Tait Street and Stafford Drive)**

Detailed design has commenced and a consent application is being prepared for construction of two new stormwater outfalls to the coast at Tait Street and stormwater improvements on Stafford Drive.

Funding for this work is spread across three years, and tenders will be let and work completed over the coming financial year.

- **Mapua (Seaton Valley Stream)**

Construction of a new 1350mm diameter culvert through the Toru Street causeway, Mapua (Contract 762) is now largely complete. The works have significantly increased the discharge capacity through the causeway and improved flushing of the inner estuary above. Full reinstatement of the road surface will be completed in spring when warmer conditions will permit.

Construction of a box culvert on the Seaton Valley Stream (Contract 777) commenced in early June and is progressing well. At the date of writing concrete work was complete, with backfilling in progress. The work has been programmed to minimise environmental impact and during construction stream flows have been pumped around the work site.

Further culvert construction and stream widening works are programmed for the coming year and are discussed in further detail in a separate paper to the committee.



*Installation of box culvert and new stormwater pipework*

- **Motueka (Old Wharf Road)**

Construction of these works (Contract 780) is now complete. The new pipe provides additional stormwater capacity from the local industrial area to the Woodlands Drain.

- **Collingwood (Swiftsure Street)**

Council staff have been working with local residents and members of the Golden Bay Community Board to resolve stormwater issues in this area. A preferred option has been identified, and will be the subject of a separate paper to the committee at a later meeting.

## 5 TELEMETRY DEVELOPMENT

### ***Analogue Telemetry***

There was an increase in the volume of data traffic in May due to the periods of heavy rain

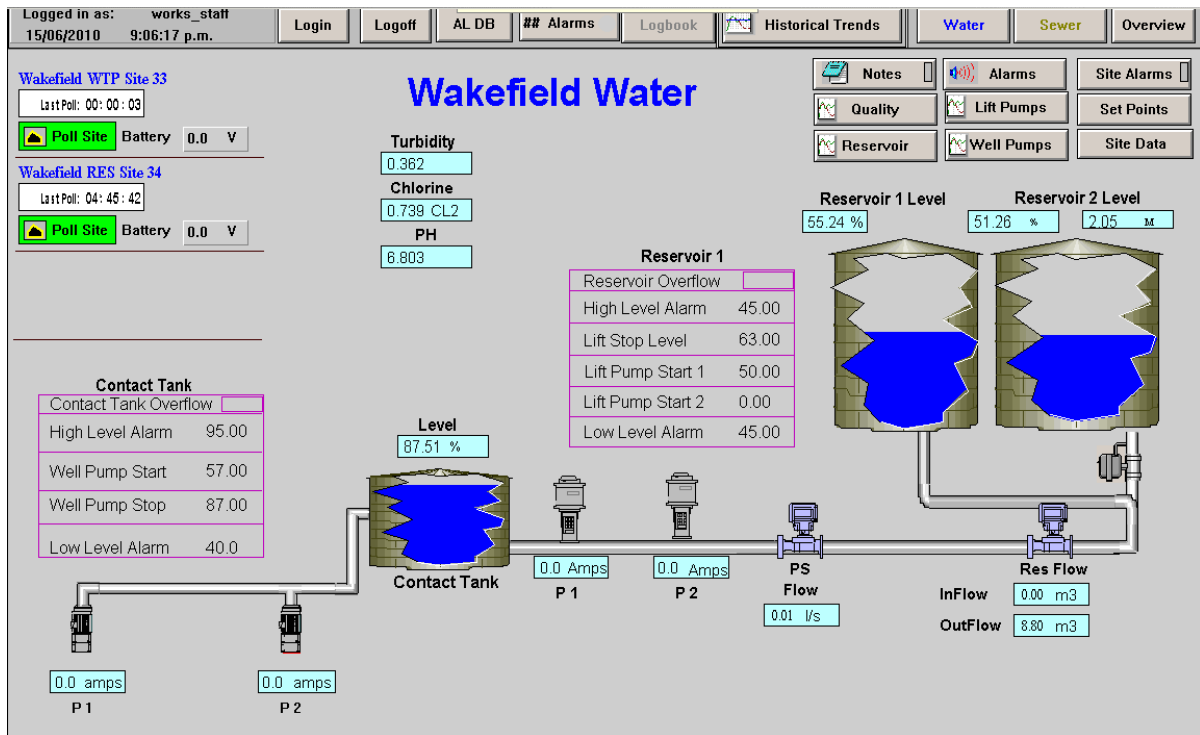
### ***Digital Telemetry Network***

Wakefield water supply is now connected via digital telemetry to Council's SCADA system.

With this site and Brightwater water supply on digital, we now have a flexible supply system that is controlled from the office through SCADA. With the electrical upgrade of the Wakefield water pump station, a new emergency feature was implemented and allows the pump station to maintain supply to the town directly. The pumps are controlled through pressure and variable speed drives.

There has been a marked improvement on the overall performance of the digital network on the D band frequency.

A screen shot is shown below of the new Wakefield Pump Station viewed via SCADA.



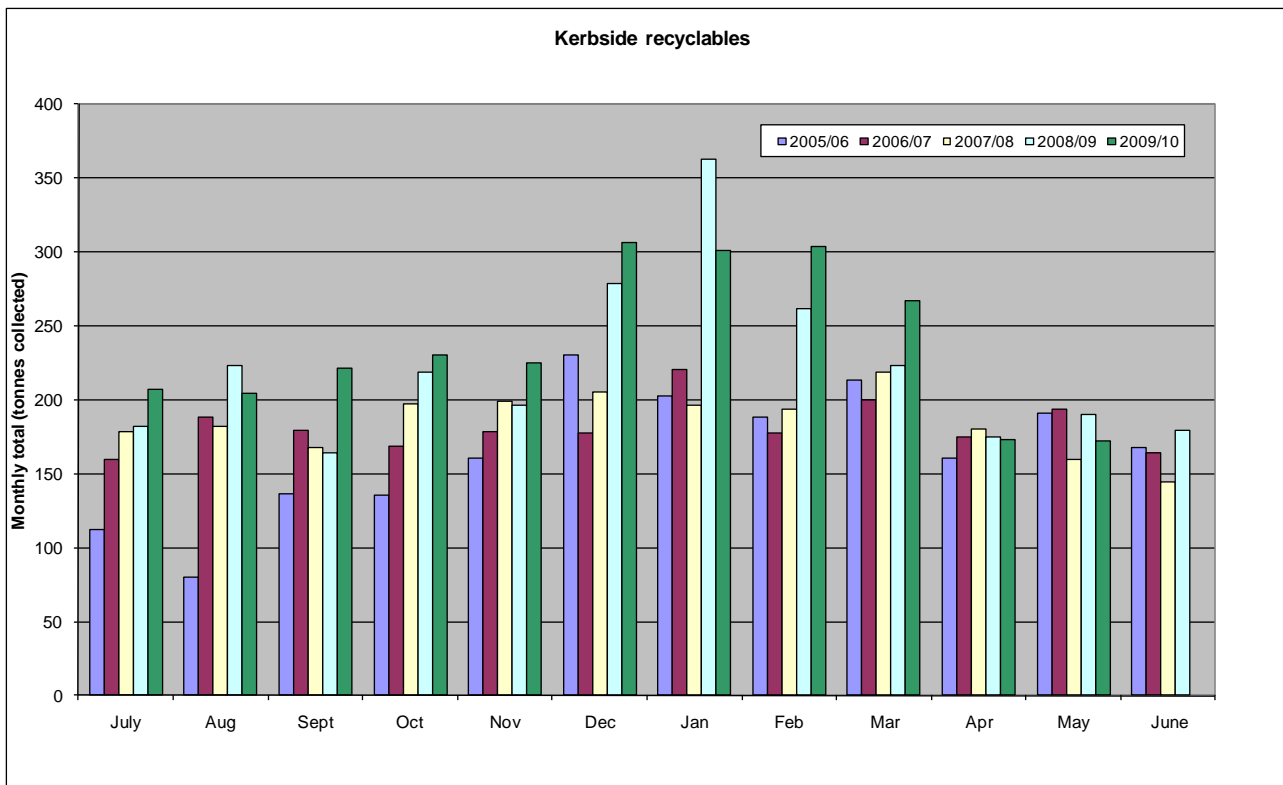
## Base Station

The base station is running well after the recent software standard upgrades. The utilisation of a development server and online server has proved beneficial and allows the implementing and testing of changes and upgrades before they are put into application on the online server.

## 6 SOLID WASTE

### 6.1 Kerbside recycling and bag collection

Kerbside recycling volumes have now returned to levels similar to previous years. Contract performance has continued to improve.



## 6.2 Resource Recovery Centres

Site activity increased slightly over the reporting period. Sales volumes and refuse quantities remain tight and below budgeted income. Staff are continuing to limit non-essential or uncommitted expenditure.

Recent capital works at Resource Recovery Centres have included site works at the new reuse shop in Fittal Street.

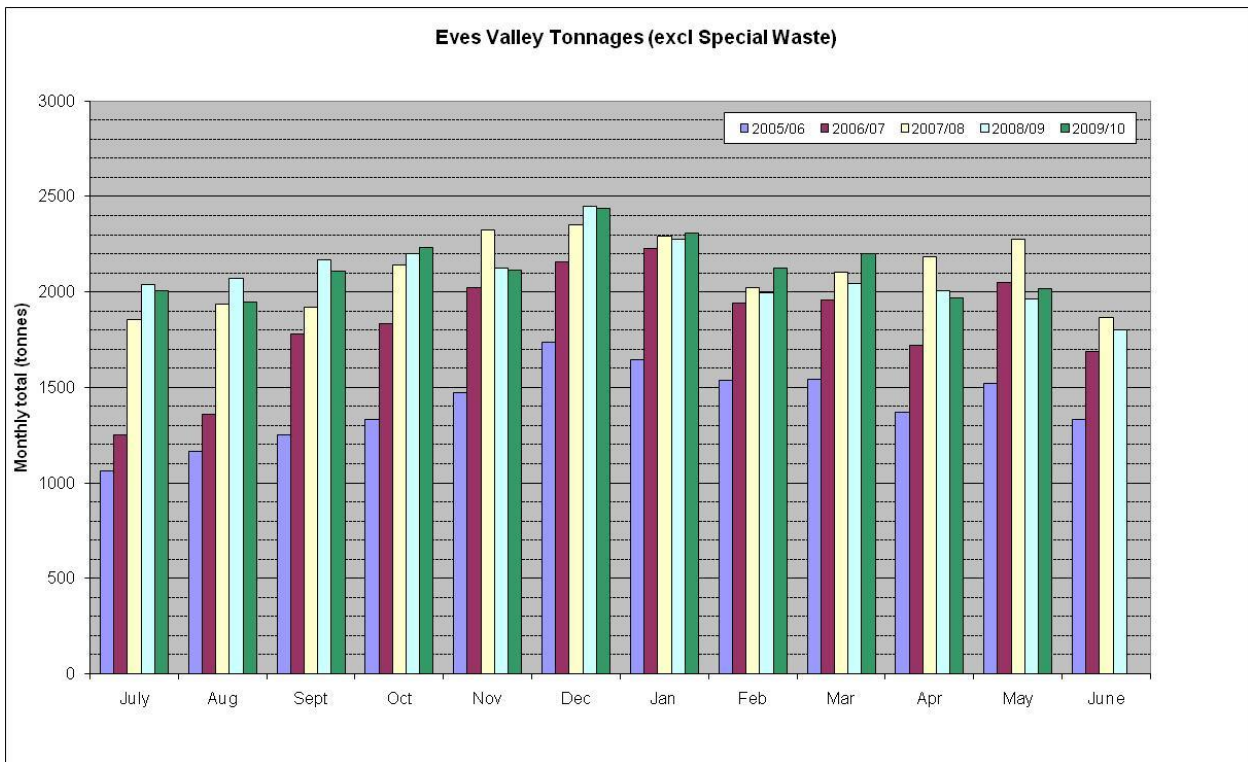
Agreement has been reached with the RRC site operator to provide waste haulage from Collingwood to Takaka as part of the operations contract (Contract 613). This arrangement will commence on 1 July and has been removed from the waste haulage and landfill operations contract (Contract 611).

## 6.3 Eves Valley Landfill and Waste Haulage

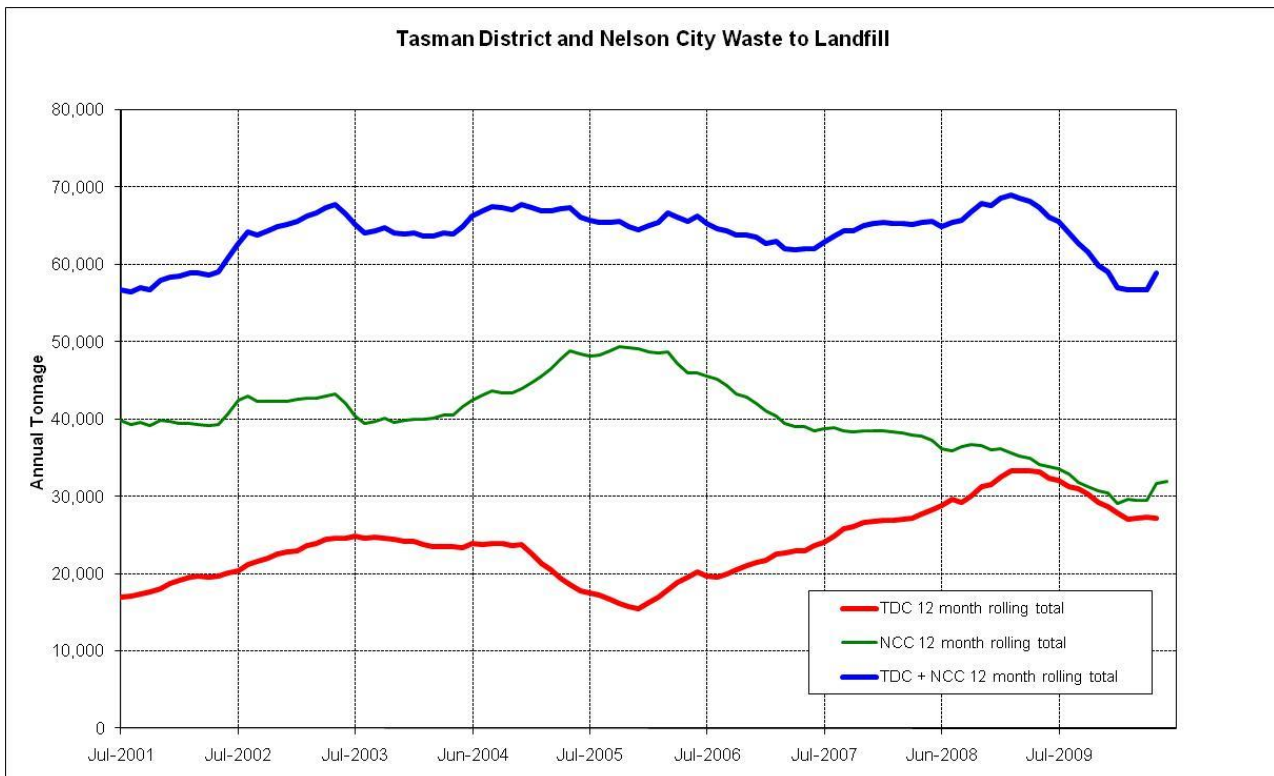
Waste tonnages to landfill (excluding special waste) have returned to previous levels, and are showing modest growth. As indicated above, this continues to place pressure on the solid waste account.

Contract 611 will conclude in September 2010 and ownership of the fixed compactors and open-top and compactor bins used for haulage of waste will transfer to Council ownership. Council staff are currently considering the maintenance and renewal options for this plant.

Contract 781, for refuse haulage and operation of the Eves Valley landfill was advertised for tender on 12 June and closes on 14 July.



Regional waste-to-landfill quantities remain flat and are indicated in the following graph. The recent lift in Nelson City tonnages are due to a one-off event.



## 6.4 Waste Minimisation Act 2008 and joint Tasman District Council/Nelson City Council Waste Management Plan

Nelson City and Tasman District Councils have initiated a business waste survey through the Waste Education contractor, Nelson Environment Centre. The survey will be available on-line (<http://tinyurl.com/wastesurvey>) and will provide information on the waste management and minimisation plan.

## 7 TENDERS

No.	Contract name	No. of tenders	Successful tenderer	Amount	Highest amount	TDC estimate	Budget for this item	Comment
791	Headingly Lane Pump Station and associated pipelines	3	Fulton Hogan	\$1,442,077	\$1,702,103	\$1,909,992	\$2,005,982	
796	Richmond water meter renewals	5	Downer	\$284,356	\$596,139	\$312,425	\$296,452	Budget amount spread over two financial years

## 8 RECOMMENDATION

**THAT the Utilities Management Report (RESC10-07-06) be received by the Engineering Services Committee.**

Jeff Cuthbertson  
**Utilities Asset Manager**