



# Rotorua Te Arawa Lakes Programme Six Monthly Report 2013 / 2014



## Proud Partners



Bay of Plenty  
REGIONAL COUNCIL



## **1. Introduction**

This report presents the six (6) month progress to 31 December 2013 against the Annual Work Programme of the Deed of Funding for the financial year ending June 2014.

The intent is to provide information to the Crown on Deed Funded Projects. Progress is reported as at 31 December 2013. This report also provides forecasted achievements for the next six months (January to June 2014).

The overarching goal of the Deed of Funding Agreement is to reach community aspirations for water quality in four (4) priority funded lakes. This is measured annually by the Trophic Level Index (TLI) and reports are available in late July each year and therefore no water quality results are available to reflect progress made to 31 December 2013. This report does contain the long-term quality trend as at June 2013.

Deed Funded Projects have contributed to these water quality trends. Various scientific techniques, including modelling and physical sampling, have been used to qualify the individual project outcomes. As scientific methods advance, the forecast, as well as outcomes within individual projects will vary. The results for the six month period to 31 December 2013 will be peer reviewed by the Technical Advisory Group in March 2014 and any changes will be updated accordingly for the Annual Report for 2013 / 2014.

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## **2. Key Achievements against Annual Work Programme**

As noted in the Annual Report 2012 / 13, the Programme has achieved some remarkable success with seven (7) of the twelve (12) lakes having met or close to meeting their Water Quality targets. For the five (5) lakes that are not achieving targets, additional scientific monitoring is in place to help inform our planning.

Lake Rotoiti has reached its water quality target with the best water quality since monitoring began in the 1990s. This has been achieved by a programme of interventions including the Ohau Diversion Wall and Sewage Reticulation. Lake Rotorua has been maintained at its long-term water quality target as a result of the stream P-Locking Programme. The success of this Programme

has been so spectacular that we have been gradually reducing the on-going P-Locking in response to much lower lake phosphorus levels.

Lake Rotoehu, initially one of our most eutrophic (degraded) lakes is now classified as moderate water quality (mesotrophic), an extraordinary change and the lake is close to reaching its water quality target. The improvements in Rotoehu have been due to a combination of interventions, but most notably exotic weed removal and more latterly P-Locking. The smallest lake in our Programme, Lake Ōkaro, is still proving to be highly challenging to keep below its long-term water quality target, but on-going research and trials are being implemented to not only improve this lake but also identify restoration techniques that could have application on the other Programme lakes.

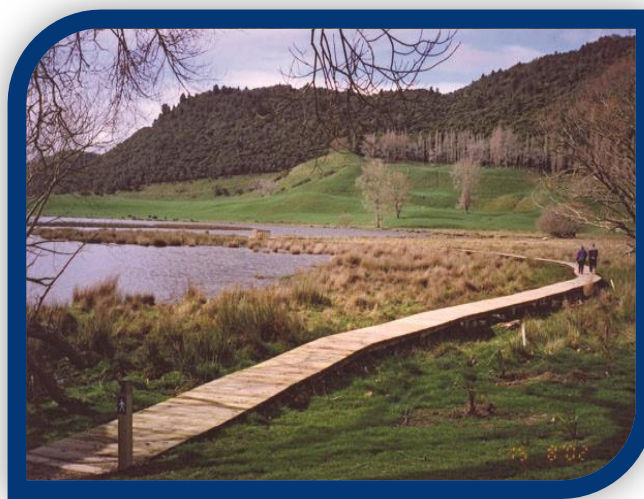
Below are some of the notable achievements made in the Programme during the period 1 July – 31 December 2013.

### **2.1 Lake Rotorua**

- 💧 Incentives and Rules Scheme: Overall framework approved. Regular sessions with Stakeholder Advisory Group to incorporate feedback / direction into the Programme
- 💧 Waste Water Treatment Plant (WWTP): Consent extension submitted; Community Project Steering Group established
- 💧 Successful Zeolite trial for Tikitere and Business Case completed and subsequent Design Trial initiated
- 💧 P-Locking successfully implemented and protocol approved by TAG
- 💧 Science Modelling updated and communicated to Community
- 💧 In February 2014, the Gorse Project was approved which will fund gorse conversion

### **2.2 Lake Rotoehu**

- 💧 Land Use Change(LUC) agreement progressing well with land owners
- 💧 Weed Harvester purchased (Change Request Approved CR002)
- 💧 Soda Springs P-Locking successfully operated



- 💧 Improvements to Aeration trial were made following 2012 / 13 report. Some damage was sustained in a storm and this is rectified. Trial still currently underway.

### **2.3 Lake Rotoiti**

- 💧 Sewerage Scheme at Gisborne point is delayed until 2017 (Change Request Approved CR001), and a Community Project Steering Group has been established with positive feedback to date.

### **2.4 Lake Ōkāreka**

- 💧 No interventions planned but monitoring on-going to determine if further action is required.
- 💧 Setting up a new Monitoring Bore to assess groundwater improvements, and working with the University of Waikato to rerun the Lake Ōkāreka Lake model to assess progress and the future expectations around the interventions already implemented.

### 3. Rotorua Te Arawa Lakes Water Quality Trend

Annual water quality results can fluctuate due to an array of reasons including climate conditions and rainfall. It is important to track the long-term trend in water quality results for each lake to track progress.

As depicted in the diagram below tracking of the long-term water quality trend shows:

- 💧 Water quality in Lakes Rotorua, Rotoiti, Rotoehu, Rerewhakaaitu, Rotomā and Tikitapu is improving
- 💧 Water quality in Lakes Ōkātina, Ōkāreka and Rotomahana is stable
- 💧 Water quality in Lakes Tarawera, and Rotokakahi is declining
- 💧 Water quality in Lake Okaro fluctuates and investigation is needed.

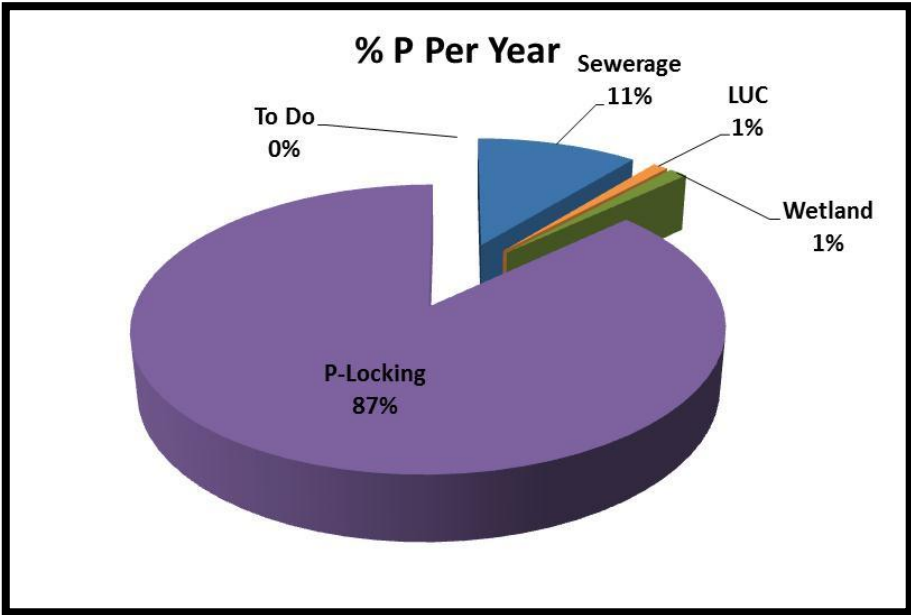
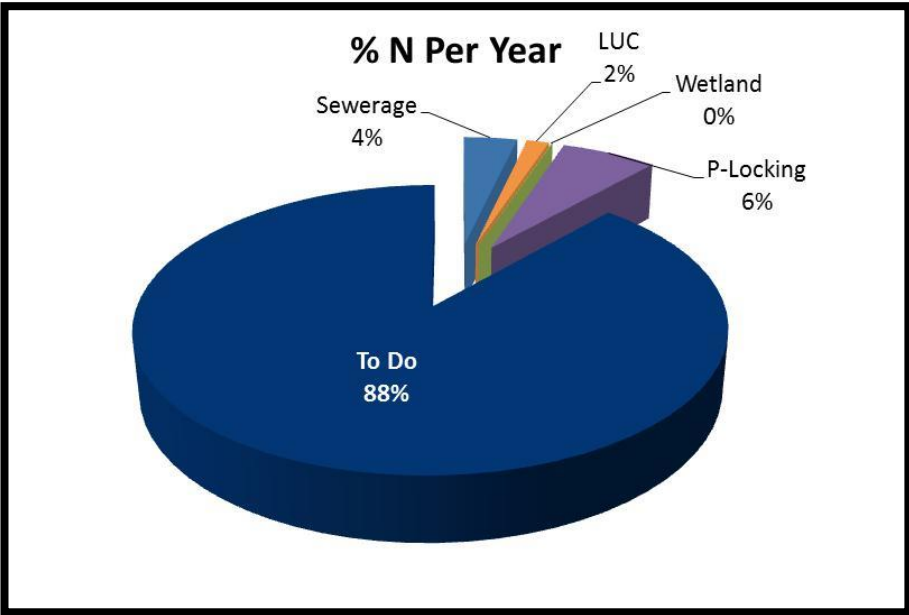
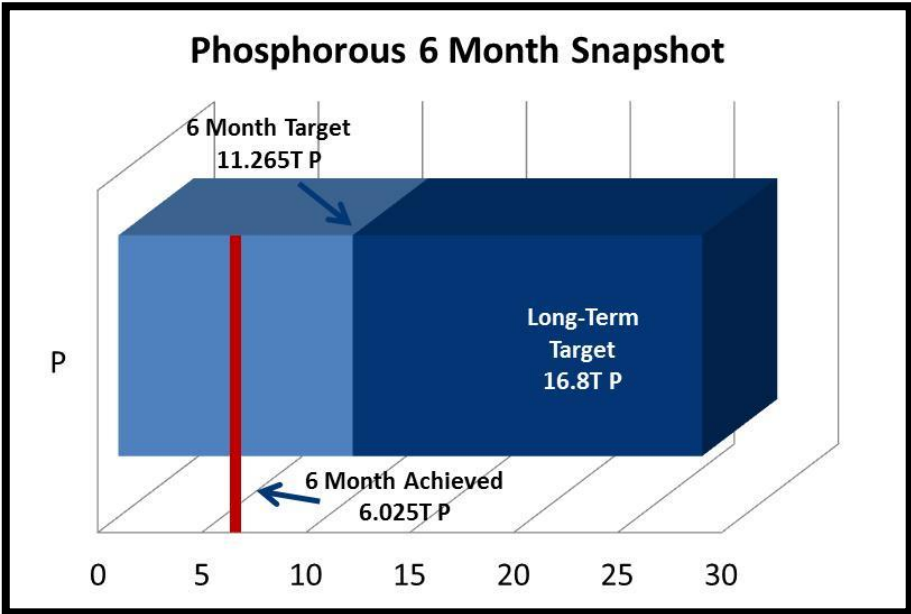
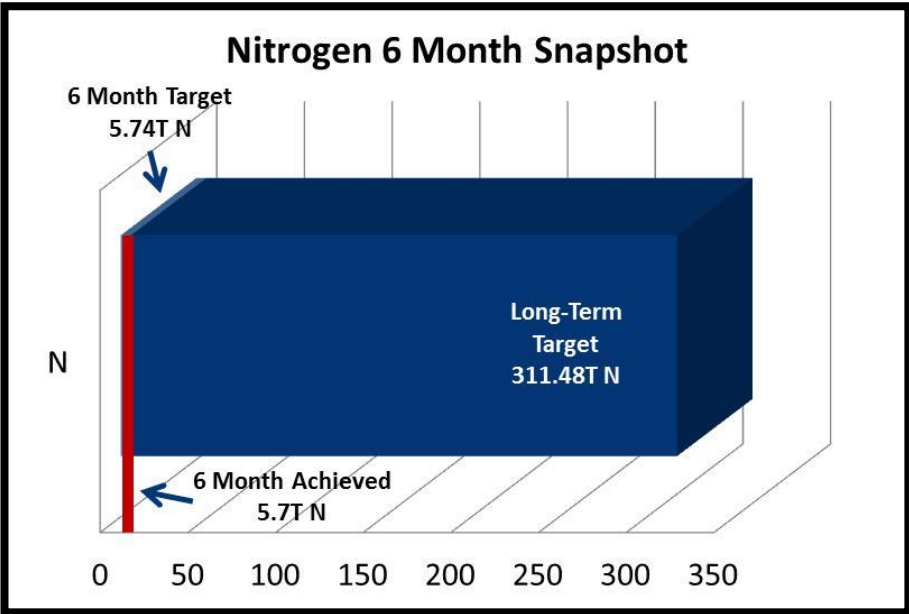
The results clearly show that of the twelve (12) lakes in the Programme, three (3) of the lakes showing improving trends are those that are being actively restored through the Deed Funding Programme of works. Rotoiti is at its target for the first time and both Rotorua and Rotoehu are very close to their targets. Lake Ōkāreka's water quality improved in 2013 and the long-term trend is stable, we expect to see further improvements as land use change and sewage reticulation works take effect.



4. Lake Rotorua







To meet community expectations for Lake Rotorua’s water quality, nitrogen inputs need to reduce by a total of 311 tonnes and phosphorus to reduce 16 tonnes per year. The impact of nutrients already in the lake also needs to be mitigated. To achieve water quality targets for Lake Rotorua, both short and long-term interventions are being undertaken. Short-term interventions have resulted in the lake reaching its water quality objectives; however, the lake will decline again if these are not carried out annually. The solution to sustainable improvements is, reducing the amount of nutrients entering the lake.

Set out below are the Total Targets for the life of each project on an annual average, as well as what was planned versus achieved for the six months to December 2013. The table also forecasts achievements for the six months to 30 June 2014.








## 4.1 Planned Activities

Project	Deed Funded	Total AWP Target	Total Achieved to Date	0-6 Month Target	0-6 Month Result*	0-12 Month Target	7-12 Month F/C	Explanation of Variance	Comments	Project Status
Land Use and Land Management Change – Rules and Incentives	Yes	270T N 10T P	4.6T N 0.24T P	OT N OT P	OT N OT P	4.6T N 0.24T P	OT N OT P	No variance – N/A	The Oturoa Agreement signed in February 2013 has extended the deadline to 2032 to meet the 435-nitrogen load for Rotorua, with 70% of the reductions catchment wide achieved by 2022.  A framework and timeframe has been agreed on how we will deliver Nitrogen reductions for Lake Rotorua, this has been supported by the Stakeholder Advisory Group  <b>Delays in Cabinet approval of funding – delayed Incentives Scheme – impacts Annual Forecast.</b>	
Waste Water Treatment Plant Options Analysis	Yes	OT N OT P	OT N OT P	OT N OT P	OT N OT P	OT N OT P	OT N OT P	No variance – N/A	WWTP is not meeting current consent conditions. <b>A change to the consent has been submitted, allowing RDC to operate the plant to 2021 (in current state) whilst options are reviewed. Options will be agreed in consultation with the community.</b>  <b>An Initial workshop held was very positive and a community advisory group has been established</b>	
Tikitere Treatment	Yes	30T N OT P	OT N OT P	OT N OT P	OT N OT P	OT N OT P	OT N OT P	No variance – N/A	<b>Zeolite trial successful. Additional design trials underway with planned work to be undertaken on full scale plant during 2014 / 15.</b>	
P-Locking	Yes	OT N 4T P	OT N 20T P	OT N 10T P	OT N 4.76T P	OT N 20T P	OT N 10T P	Active monitoring of Alum Phosphate dosing has allowed us reduce amount of Alum being dosed whilst delivering performance for the Programme (i.e. TLI improvements).	The new phosphorus dosing protocol has been implemented and monitoring of intervention outcomes will continue throughout the 2013 / 14 year. <b>Additional modelling has been undertaken by the University of Waikato to confirm the impact of Alum Phosphate dosing. This modelling also confirmed that the overall target for nitrogen and phosphorous reductions were robust.</b>	
OSET	No	OT N OT P	OT N OT P	OT N OT P	OT N OT P	OT N OT P	OT N OT P		This is not a new project but has been on-going work undertaken by BOPRC. Consultation complete and options are being presented to Council. Further updates will be included within RTALP reports.	
Mamaku Sewerage Reticulation	No	OT N OT P	OT N OT P	OT N OT P	OT N OT P	OT N OT P	OT N OT P	No variance – N/A	Initial scoping report completed. Waiting on outcome of WWTP upgrade options and funding requests.	



Project	Deed Funded	Total AWP Target	Total Achieved to Date	0-6 Month Target	0-6 Month Result*	0-12 Month Target	7-12 Month F/C	Explanation of Variance	Comments	Project Status
<b>Detainment Bunds</b>	No	OT N OT P	OT N OT P	OT N OT P	OT N OT P	OT N OT P	OT N OT P	No variance – N/A	Continued subject to NZ Transport Authority. Managed through Sustainable Land Implementation	
<b>Totals</b>		<b>300T N 14T P</b>	<b>4.6T N 20.24T P</b>	<b>OT N 10T P</b>	<b>OT N 4.76T P</b>	<b>4.6T N 20.24T P</b>	<b>OT N 10T P</b>			

## 4.2 Completed Activities

Project	Deed Funded	Total AWP Target	Total Achieved to Date	0-6 Month Target	0-6 Month Result*	0-12 Month Target	7-12 Month F/C	Explanation of Variance	Comments	Project Status
Sewerage Reticulation Hamurana Brunswick Rotokawau Hinemoa Point Tarawera Road Paradise Valley	Yes Yes Yes Yes No	11.3T N 2.5T P	11.3T N 2.5T P	5.65T N 1.25T P	5.65T N 1.25T P	11.3T N 2.5T P	5.65T N 1.25T P	Completed. Monitoring of intervention outcomes has continued through the first half of 2013 / 2014. Please also note that there will be additional properties connecting as new developments commence. Estimate approx. \$430k to come from reserves for these additional connections this year and going forward.		
Floating Wetland (Tanner et al 2010)	Yes	0.180T N 0.30T P	0.180T N 0.30T P	0.09T N 0.015T P	0.09T N 0.015T P	0.180T N 0.30T P	0.09T N 0.015T P	Completed. Monitoring of intervention outcomes has continued through the first half of 2013 / 2014.		
<b>TOTALS</b>		<b>11.48T N 2.8T P</b>	<b>11.48T N 2.8T P</b>	<b>5.74T N 1.265T P</b>	<b>5.74T N 1.265T P</b>	<b>11.48T N 2.8T P</b>	<b>5.74T N 1.265T P</b>			

## 4.3 Grand Totals for Planned and Completed

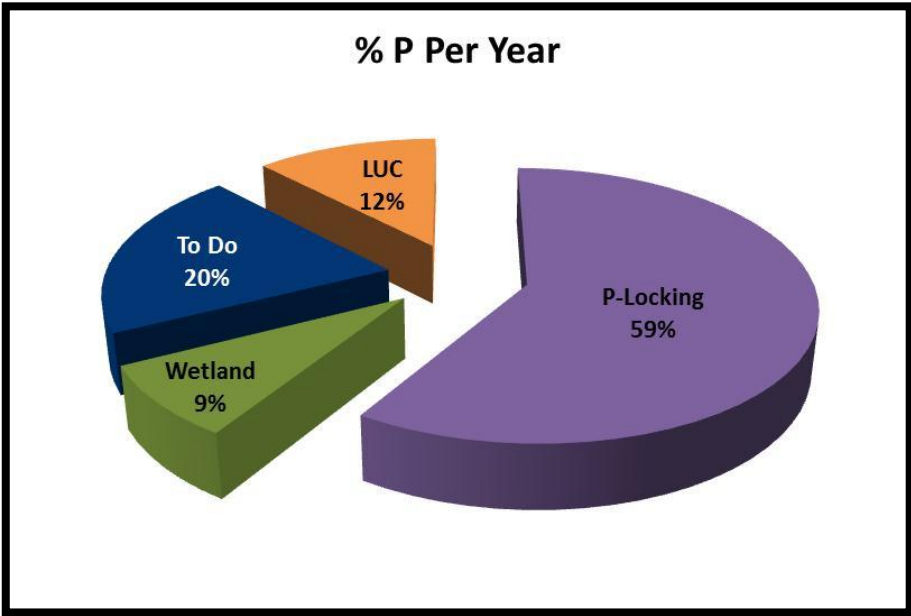
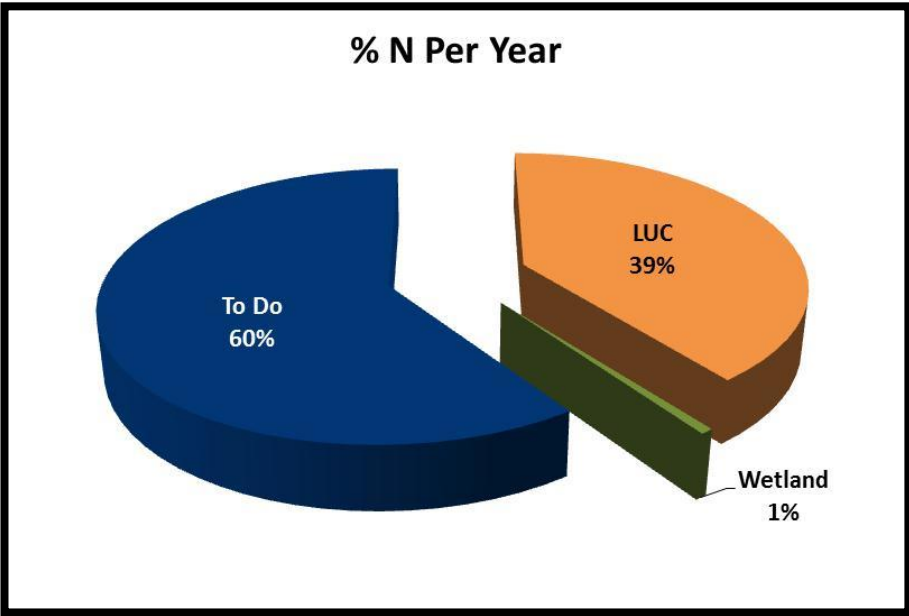
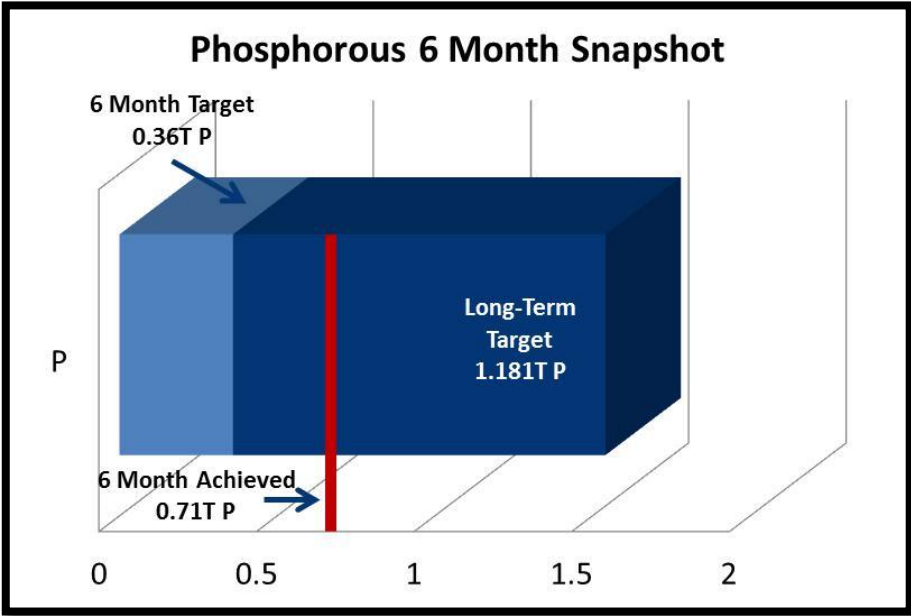
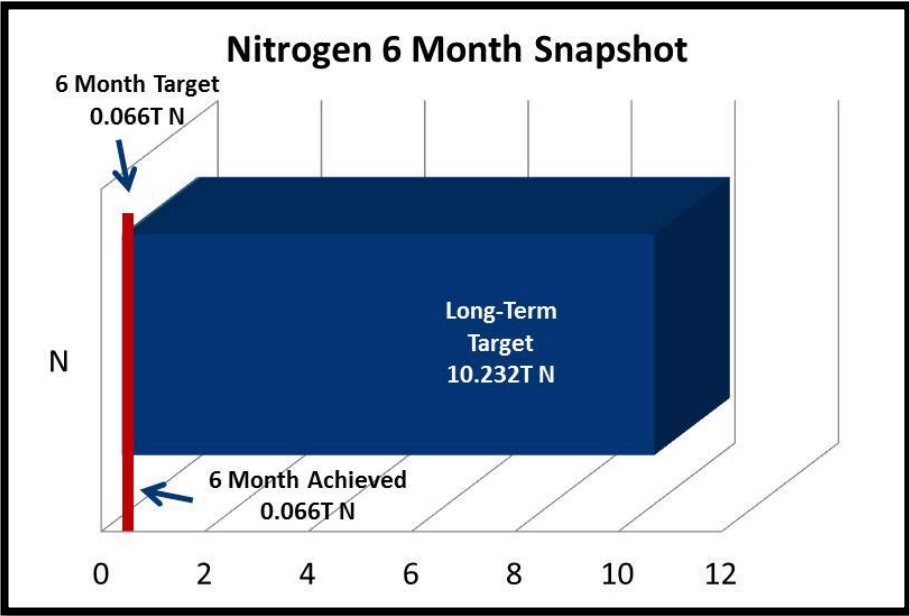
Project	Grand Total AWP Target	Grand Total Achieved to Date	Grand Total 0-6 Month Target	Grand Total 0-6 Month Result*	Grand Total 0-12 Month Target	Grand Total 7-12 Month F/C	Comments
<b>GRAND TOTALS</b>	<b>311.48T N 16.8T P</b>	<b>16.08T N 23.04T P</b>	<b>5.74T N 11.265T P</b>	<b>5.74T N 6.025T P</b>	<b>16.08T N 23.04T P</b>	<b>5.74T N 11.265T P</b>	

Project Status      Green = On Track      Amber = Some Delays      Red = Major Delays      \*Updated with new modelling results





5. Lake Rotoehu

*“To meet community expectations for water quality, Lake Rotoehu needs a reduction of 8.9 tonnes of nitrogen and 708 kg of phosphorus. The main long-term intervention in Lake Rotoehu is Land Management Change which is complemented by some short-term interventions.”*

Set out below are the Total Targets for the life of each project on an annual average, as well as what was planned versus achieved for the six months to 31 December 2013. The table also forecasts achievements for the six months to 30 June 2014.



## 5.1 Planned Activities

Project	Deed Funded	Total AWP Target	Total Achieved to Date	0-6 Month Target	0-6 Month Result*	0-12 Month Target	7-12 Month F/C	Explanation of Variance	Comments	Project Status
Land Use and Land Management Change – Rules and Incentives	Yes	6.6T N 0.460T P	4.036T N 0.768T P	0T N 0T P	0T N 0T P	1.7T N 0T P	1.7T N 0T P	No variance – N/A	On track to complete annual target – good engagement with landowners.	
Weed Harvesting	Yes	3.5T N 0T P	0T N 0T P	0T N 0T P	0T N 0T P	3.5T N 0T P	3.5T N 0T P	No variance – N/A	On track to complete annual target – with purchase of weed harvester. Harvesting will take place between March - May 2014.	
P-Locking	Yes	0T N 0.700T P	0T N 0.700T P	0T N 0.350T P	0T N 0.700T P	0T N 0.700T P	0T N 0.350T P	We are getting more than twice the expected target annually. This maybe natural variation or our estimates of P amount are higher than in reality.	On track to complete annual target with P-Locking plant	
Aeration Trial	Yes	0T N 0T P	0T N 0T P	0T N 0T P	0T N 0T P	0T N 0T P	0T N 0T P	No variance – N/A	Trial activity is on-going, with modification made to the trial equipment.	
<b>Totals</b>		<b>10.1T N 1.16T P</b>	<b>4.036T N 1.468T P</b>	<b>0T N 0.350T P</b>	<b>0T N 0.700T P</b>	<b>5.2T N 0.700T P</b>	<b>5.2T N 0.350T P</b>			

## 5.2 Completed Activities

Project	Deed Funded	Total AWP Target	Total Achieved to Date	0-6 Month Target	0-6 Month Result*	0-12 Month Target	7-12 Month F/C	Explanation of Variance	Comments	Project Status
Floating Wetland (Tanner et al 2010)	Yes	0.132T N 0.021T P	0.066T N 0.010T P	0.066T N 0.010T P	0.066T N 0.010T P	0.132T N 0.021T P	0.066T N 0.010T P	Completed. Monitoring of intervention outcomes has continued through the first half of 2013 / 2014.		
<b>Totals</b>		<b>0.132T N 0.021T P</b>	<b>0.066T N 0.010T P</b>	<b>0.066T N 0.010T P</b>	<b>0.066T N 0.010T P</b>	<b>0.132T N 0.021T P</b>	<b>0.066T N 0.010T P</b>			

## 5.3 Grand Totals for Planned and Completed

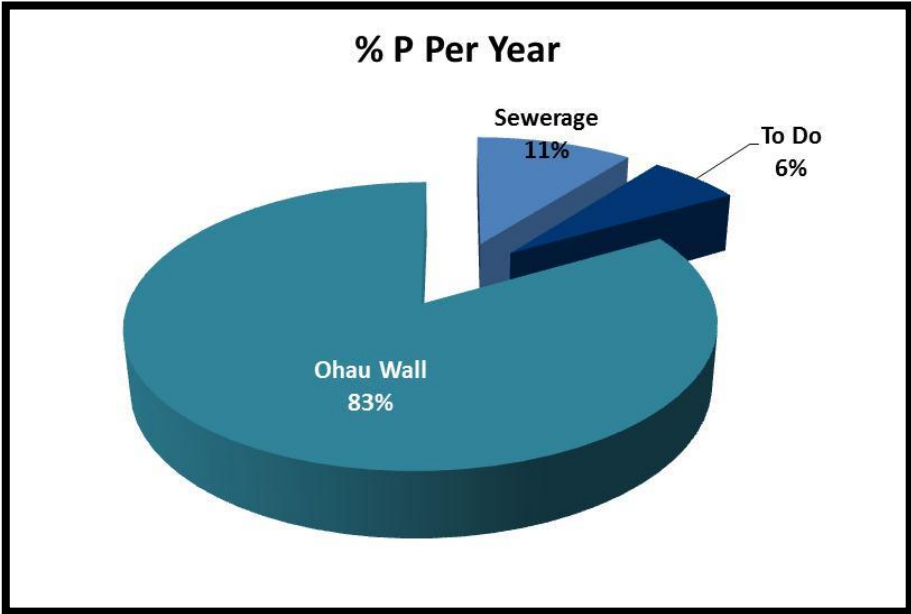
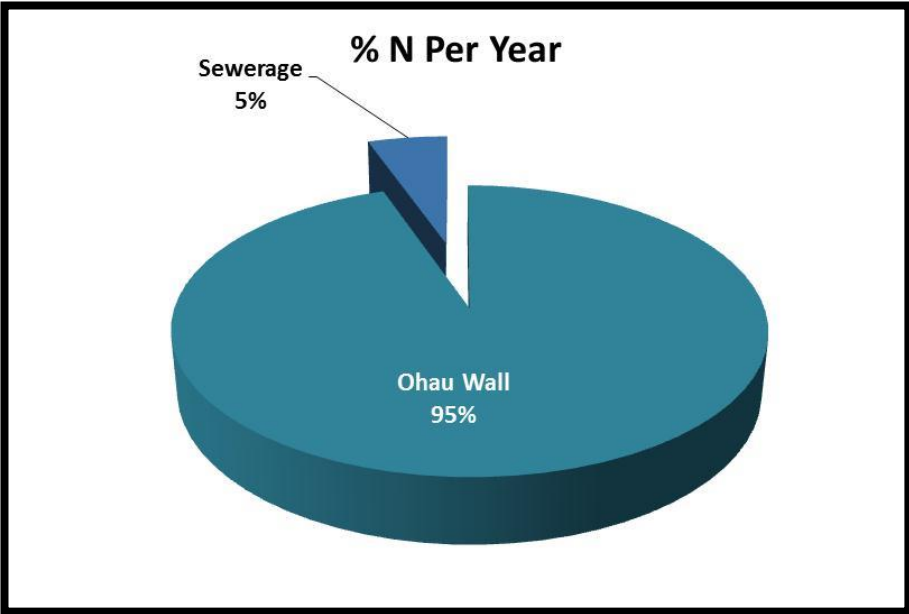
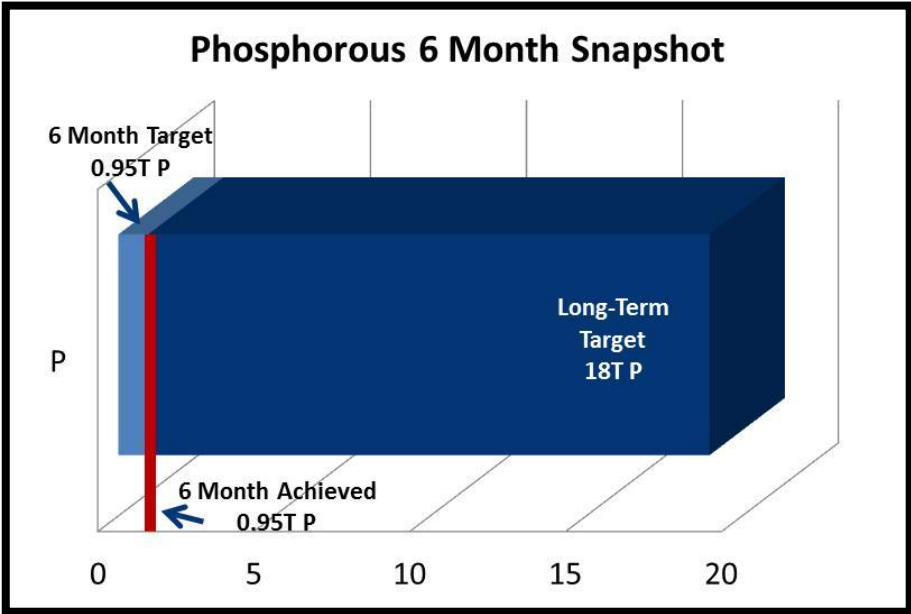
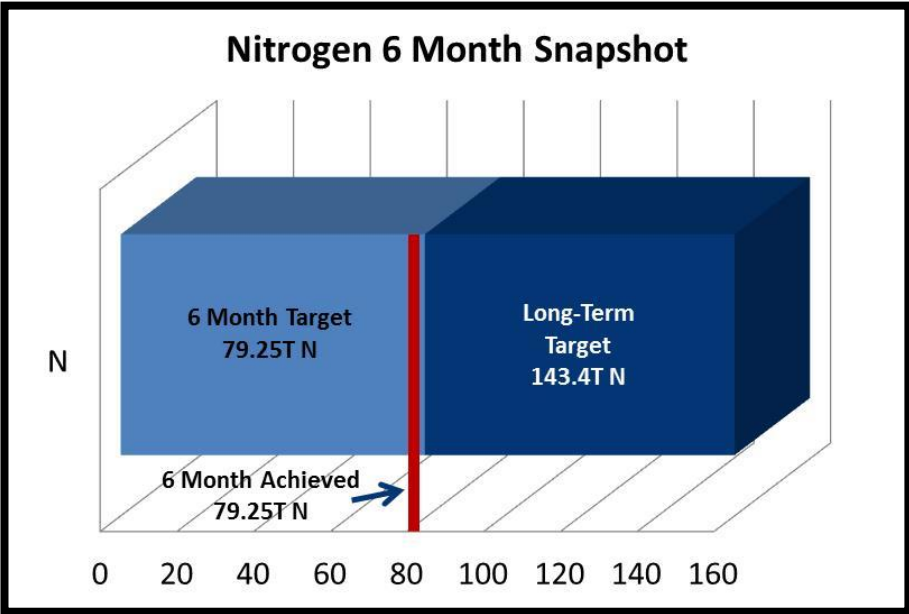
Project	Grand AWP Total Target	Grand Total Achieved to Date	Grand Total 0-6 Month Target	Grand Total 0-6 Month Result*	Grand Total 0-12 Month Target	Grand Total 7-12 Month F/C	Comments
<b>GRAND TOTALS</b>	<b>10.232T N 1.181T P</b>	<b>4.102T N 1.478T P</b>	<b>0.066T N 0.36T P</b>	<b>0.066T N 0.71T P</b>	<b>5.332T N 0.721T P</b>	<b>5.266T N 0.36T P</b>	

Project Status      Green = On Track      Amber = Some Delays      Red = Major Delays      \*Updated with new modelling results


6. Lake Rotoiti

*“To meet community expectations for water quality, Lake Rotoiti needs a reduction of 130 tonnes of nitrogen and 19 tonnes of phosphorus. The Ohau Diversion Wall is established and protecting the lakes water quality while nutrient reductions to Lake Rotorua are achieved.”*



No work was planned for 2013 / 2014. Sewerage Reticulation is the only outstanding action.



## 6.1 Planned Activities

Project	Deed Funded	Total AWP Target	Total Achieved to Date	0-6 Month Target	0-6 Month Result*	0-12 Month Target	7-12 Month F/C	Explanation of Variance	Comments	Project Status
Sewerage Scheme – Curtis Road to Hinehopu	Yes	4.9T N 1.1T P	0T N 0T P	0T N 0T P	0T N 0T P	0T N 0T P	0T N 0T P	No variance – N/A	Lake Rotoiti / Rotomā Sewerage Scheme – Project Advisory Group established.	
<b>Totals</b>		<b>4.9T N 1.1T P</b>	<b>0T N 0T P</b>	<b>0T N 0T P</b>	<b>0T N 0T P</b>	<b>0T N 0T P</b>	<b>0T N 0T P</b>			

## 6.2 Completed Activities

Project	Deed Funded	Total AWP Target	Total Achieved to Date	0-6 Month Target	0-6 Month Result*	0-12 Month Target	7-12 Month F/C	Explanation of Variance	Comments	Project Status
Oahu Diversion Wall	Yes	130T N 15T P	150T N 15T P	75T N 0T P	75T N 0T P	150TN 0T P	75T N 0T P	Completed. Monitoring of intervention outcomes has continued through the first half of 2013 / 2014.		
Sewerage Schemes Okere / Otaramarae / Whangamarino / Mourea / Okawa Bay	Yes	8.5T N 1.9T P	8.5T N 1.9T P	4.25T N 0.95T P	4.25T N 0.95T P	8.5T N 1.9T P	4.25T N 0.95T P	Completed. Monitoring of intervention outcomes has continued through the first half of 2013 / 2014.		
<b>Totals</b>		<b>138.5T N 16.9T P</b>	<b>138.5T N 16.9T P</b>	<b>79.25T N 0.95T P</b>	<b>79.25T N 0.95T P</b>	<b>138.5T N 16.9T P</b>	<b>79.25T N 0.95T P</b>			

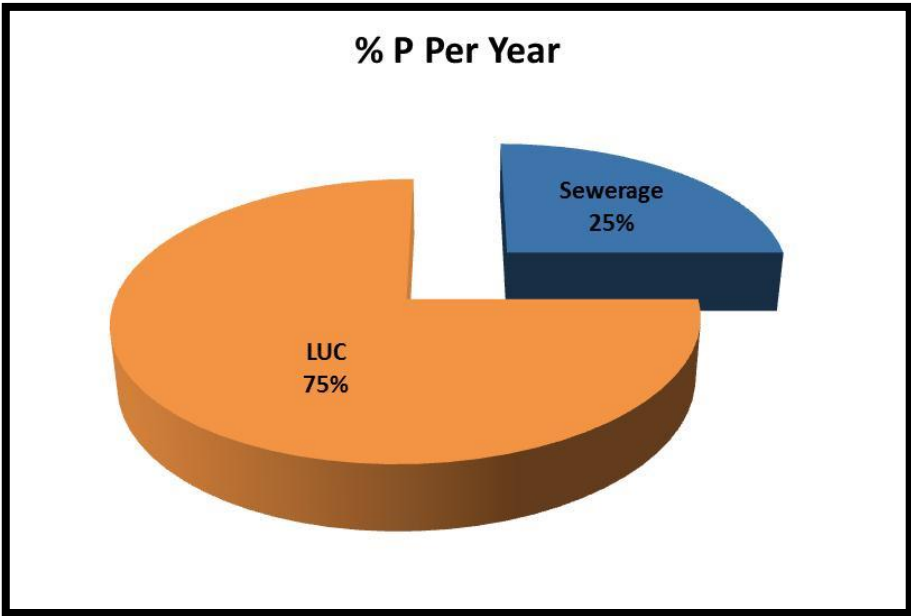
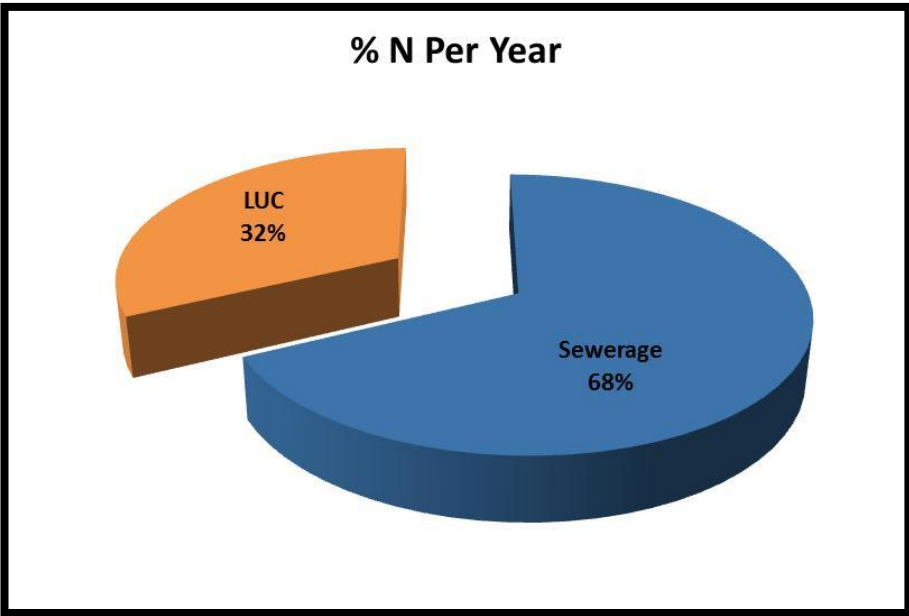
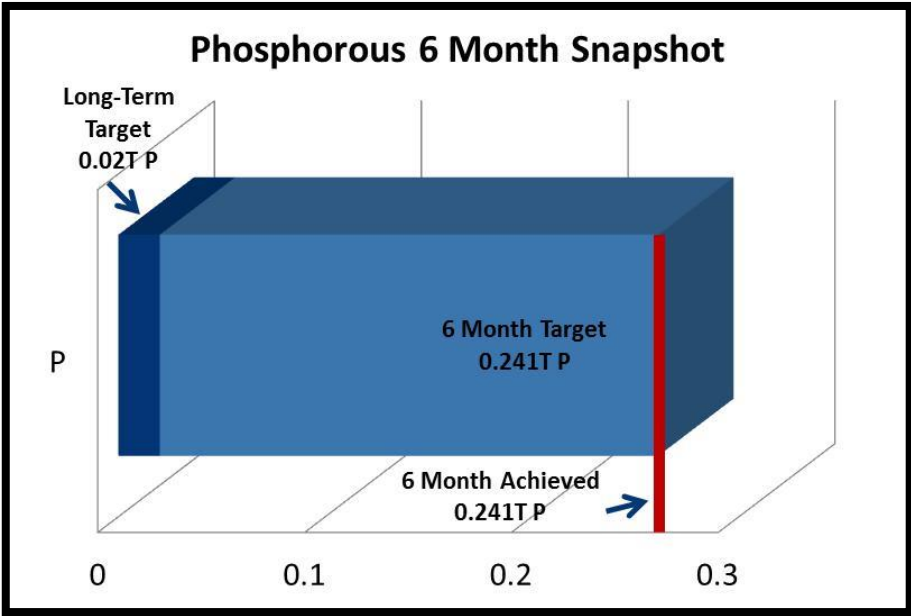
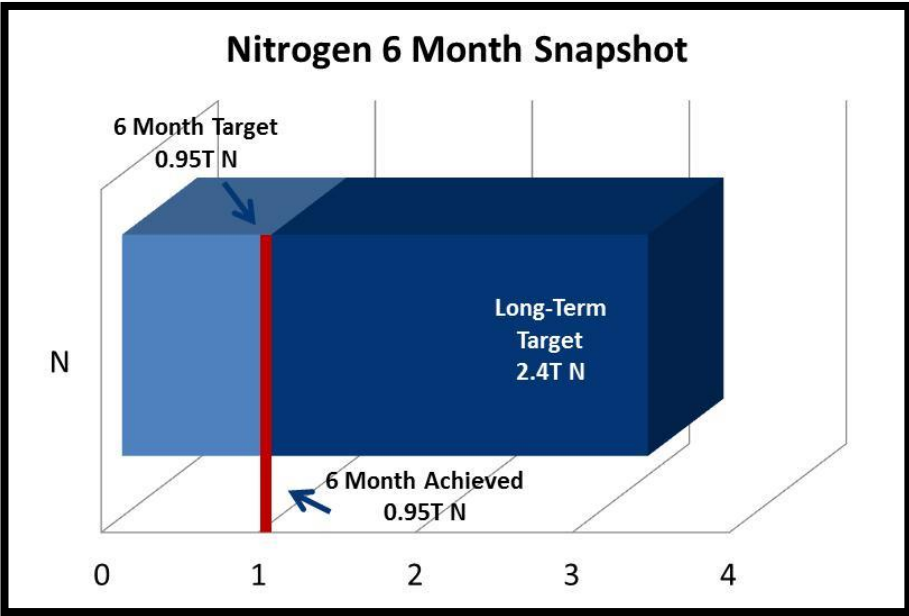
## 6.3 Grand Totals for Planned and Completed

Project	Grand AWP Total Target	Grand Total Achieved to Date	Grand Total 0-6 Month Target	Grand Total 0-6 Month Result*	Grand Total 0-12 Month Target	Grand Total 7-12 Month F/C	Comments
<b>GRAND TOTALS</b>	<b>143.4T N 18T P</b>	<b>138.5T N 16.9T P</b>	<b>79.25T N 0.95T P</b>	<b>79.25T N 0.95T P</b>	<b>138.5T N 16.9T P</b>	<b>79.25T N 0.95T P</b>	

Project Status      Green = On Track      Amber = Some Delays      Red = Major Delays      \*Updated with new modelling results

7. Lake Ōkāreka

“To meet water quality community expectations nutrient reductions required are 2.5 tonnes nitrogen and 80 kg of phosphorus annually.”





## 7.1 Planned Activities

All actions have been completed for Lake Ōkāreka. An Action Plan review and on-going monitoring of existing interventions will inform if further actions are required in later years of the Programme.

Further monitoring is being undertaken with the setup of a new Monitoring Bore to assess groundwater improvements together with new science work with the University of Waikato to rerun the Lake Ōkāreka Lake model to assess progress and the future expectations around the interventions already implemented.

## 7.2 Completed Activities

Project	Deed Funded	Total AWP Target	Total Achieved to Date	0-6 Month Target	0-6 Month Result*	0-12 Month Target	7-12 Month F/C	Explanation of Variance	Comments	Project Status
Sewerage Reticulation	Yes	2.4T N 0.02T P	1.9T N 0.02T P	0.95T N 0.01T P	0.95T N 0.01T P	1.9T N 0.02T P	0.95T N 0.01T P	Completed. Monitoring of intervention outcomes has continued through the first half of 2013 / 2014.		
Land Use Change	Yes	0.0T N 0.0T P	0.9T N 0.06T P	0T N 0.231T P	0T N 0.231T P	0.9T N 0.06T P	0T N 0.231T P	Completed. Monitoring of intervention outcomes has continued through the first half of 2013 / 2014.		
<b>Totals</b>		<b>2.4T N 0.02T P</b>	<b>2.8T N 0.08T P</b>	<b>0.95T N 0.241T P</b>	<b>0.95T N 0.241T P</b>	<b>2.8T N 0.08T P</b>	<b>0.95T N 0.241T P</b>			

## 7.3 Grand Totals for Planned and Completed

Project	Grand AWP Total Target	Grand Total Achieved to Date	Grand Total 0-6 Month Target	Grand Total 0-6 Month Result*	Grand Total 0-12 Month Target	Grand Total 7-12 Month F/C	Comments
<b>GRAND TOTALS</b>	<b>2.4T N 0.02T P</b>	<b>2.8T N 0.08T P</b>	<b>0.95T N 0.241T P</b>	<b>0.95T N 0.241T P</b>	<b>2.8T N 0.08T P</b>	<b>0.95T N 0.241T P</b>	

Project Status      Green = On Track      Amber = Some Delays      Red = Major Delays      \*Updated with new modelling results



## 8. Major Risks with the Planned Interventions

Intervention	Risk Description	Mitigation
<b>Wastewater Treatment and Disposal Options</b>	Unable to get suitable option agreed to by the community. Option chosen will not meet 30 tonnes of nitrogen limit.	Option analysis paper being prepared and will be considered by Partner Agencies.
<b>Rotorua Incentives Scheme</b>	Cabinet do not approve transfer.	Scheme will continue but with significantly less funding available therefore long-term targets will be affected.
<b>Land Use Change</b>	If Land Use Change Rules are appealed, then there may be significant delays to the land use change component of the Programme.	Engage with Stakeholder Advisory Group to get buy in to new Rules.
<b>Engineering Options</b>	Major engineering options (Tikitere / Sewerage Schemes) do not achieve 50 tonne nitrogen reduction for Lake Rotorua.	Review of scientific analysis associated with planned interventions.  Science TAG to identify further interventions to achieve targets.

## 9. Programme Financials

The Programme Financials are up to December 2013 and are outlined below.

### 9.1 Full Year Forecast – Year ending 30 June 2014

#### Rotorua Te Arawa Lakes Programme - Six Monthly Report 5.4.2 (e)

Full Year Forecast Financial Statement - for year ended 30 June 2014

Clause 5.4.2 (e)	A	B	C = (A+B)	D	(C-D)	E) Council funding forecast		F) Crown Funding forecast			G) Funding from any other sources	H = (E + F + G) Total forecast funding	(H - C) Surplus (deficit) of funding	5.4.2 (e) Funding overspend (underspend)	5.4.2 (e) Funding committed to deferred works	Clause 5.4.3: Comments and issues raised
	Actual year to date to 31 Dec 2013	Forecast expenditure to year end	Total forecast expenditure	Annual Work Programme	Variance to total forecast overspend (underspend)	Revenue excluding Crown grants	Council reserves and debt funding	Grants	Programme reserves	Reserve interest	\$000	\$000	\$000	\$000	\$000	
<b>Lake Rotoehu</b>																
Weed Harvesting	90	411	501	100	401	50	201	0	251	0	0	502	0	0	0	Feb 14 : CR002 approved. Additional \$375K for purchase of Weed harvester.
Land Management Change	0	1,298	1,298	1,298	0	0	649	0	649	0	0	1,298	0	0	0	Feb 14 : Impact of Phosphorous on TLI (Trophic Level Index) is greater than expected - key intervention for managing TLI.
Phosphorus Locking Soda Springs	47	72	118	100	18	26	34	0	59	0	0	118	0	0	0	Feb14 : Initial trial results not encouraging for use on Lake Rotorua. Reduced trial size / duration.
Aeration	61	21	82	130	(48)	65	(24)	0	41	0	0	82	0	0	0	
Sediment capping	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Wetlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Total Lake Rotoehu</b>	<b>198</b>	<b>1,802</b>	<b>2,000</b>	<b>1,628</b>	<b>372</b>	<b>141</b>	<b>860</b>	<b>0</b>	<b>1,000</b>	<b>0</b>	<b>0</b>	<b>2,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>Lake Okareka</b>																
Sewerage Reticulation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Land Management Change	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Total Lake Okareka</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

# Rotorua Te Arawa Lakes Programme Six Monthly Report 2013 / 2014

## Rotorua Te Arawa Lakes Programme - Six Monthly Report 5.4.2 (e)

Full Year Forecast Financial Statement - for year ended 30 June 2014

Clause 5.4.2 (e)	A	B	C = (A+B)	D	(C-D)	E) Council funding forecast		F) Crown Funding forecast			G) Funding from any other sources	H = (E + F + G) Total forecast funding	(H - C) Surplus (deficit) of funding	5.4.2 (e) Funding overspend (underspend)	5.4.2 (e) Funding committed to deferred works	Clause 5.4.3: Comments and issues raised
Interventions	Actual year to date to 31 Dec 2013	Forecast expenditure to year end	Total forecast expenditure	Annual Work Programme	Variance to total forecast overspend (underspend)	Revenue excluding Crown grants	Council reserves and debt funding	Grants	Programme reserves	Reserve interest	\$000	\$000	\$000	\$000	\$000	\$000
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	
<b>Lake Rotorua</b>																
Land Management Change	0	0	0	6,573	(6,572)	0	0	0	0	0	0	0	0	0	0	Feb14 : Delay in cabinet funding. Works deferred until 2014/15. Refer CR004 for \$4.8M. Note : Disconnect betw een AP13/14 submission & Annual programme as submitted to MFE - process issue being addressed.
Phosphorus Locking	304	439	742	525	217	213	159	0	371	0	0	742	0	0	0	Feb 14 : Original under-estimate for intervention. Forecast updated to reflect actuals from 12/13. Main improvements in TLI associated with P Locking.
Tikitere Diversions	198	159	356	2,687	(2,331)	126	52	0	178	0	0	356	0	0	0	Feb 14 : Zeolite solution agreed. Design trials under way - focus on reducing CAPEX/OPEX costs of full scale plant. Schedule in place to deliver full scale plant in 14/15. Works deferred until 2014/15. Refer CR003.
Wetlands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Feb14 : Driven by amount of connections, reduced number of connections requested by community to date.
Sew erage Reticulation	207	15	222	322	(100)	0	111	0	111	0	0	222	0	0	0	
<b>Total Lake Rotorua</b>	<b>709</b>	<b>613</b>	<b>1,321</b>	<b>10,107</b>	<b>(8,785)</b>	<b>338</b>	<b>322</b>	<b>0</b>	<b>661</b>	<b>0</b>	<b>0</b>	<b>1,321</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>Lake Rotoiti</b>																
Sew erage Reticulation	110	52	162	3,178	(3,016)	0	81	0	81	0	0	162	0	0	0	Feb14 : Env court hearing resulting in additional collaboration with community - delay to project until 2015/16. CR001 approved.
<b>Total Lake Rotoiti</b>	<b>110</b>	<b>52</b>	<b>162</b>	<b>3,178</b>	<b>(3,016)</b>	<b>0</b>	<b>81</b>	<b>0</b>	<b>81</b>	<b>0</b>	<b>0</b>	<b>162</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>Rotorua District</b>																
Treatment and disposal	59	191	250	0	250	0	125	0	125	0	0	250	0	0	0	Feb 14 : Unapproved expenditure. Change request required
<b>Total Rotorua District</b>	<b>59</b>	<b>191</b>	<b>250</b>	<b>0</b>	<b>250</b>	<b>0</b>	<b>125</b>	<b>0</b>	<b>125</b>	<b>0</b>	<b>0</b>	<b>250</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>Programme reserve account interest on behalf of MIE</b>																
Rotorua District Council	0	0	0	0	0	0	0	0	0	105	0	105	105	(105)	0	Available for reinvestment into the programme
Bay of Plenty Regional Council	0	0	0	0	0	0	0	0	0	38	0	38	38	(38)	0	Available for reinvestment into the programme
<b>Total Programme</b>	<b>1,076</b>	<b>2,657</b>	<b>3,733</b>	<b>14,913</b>	<b>(11,179)</b>	<b>479</b>	<b>1,388</b>	<b>0</b>	<b>1,867</b>	<b>143</b>	<b>0</b>	<b>3,877</b>	<b>143</b>	<b>(143)</b>	<b>0</b>	Average Money market deposit rate forecast of 2.59%
<b>Funding by Authority</b>																
MIE	538	1,329	1,867	7,456	(5,590)	0	0	0	1,867	143	0	2,010	143	(143)	0	Programme reserve interest accrued on behalf of MIE available for future interventions
Rotorua District Council	188	129	317	1,750	(1,433)	0	317	0	0	0	0	317	0	0	0	Debt Funding
Bay of Plenty Regional Council	350	1,200	1,550	5,707	(4,157)	479	1,071	0	0	0	0	1,550	0	0	0	Funding surplus to Council reserves. Funding made up of 50% general funding (general rates and investment income) and 50% targeted rates.
<b>Total Funding by Authority</b>	<b>1,076</b>	<b>2,657</b>	<b>3,733</b>	<b>14,913</b>	<b>(11,179)</b>	<b>479</b>	<b>1,388</b>	<b>0</b>	<b>1,867</b>	<b>143</b>	<b>0</b>	<b>3,877</b>	<b>143</b>	<b>(143)</b>	<b>0</b>	

## 9.2 Programme 6 Month Report – Actuals Year to Date

### Rotorua Te Arawa Lakes Programme - Six Monthly Report: Actual Year to Date

Financial Statement for the period between 1 July 2013 and 31 December 2013

Financial Statement for the period between 1 July 2013 and 31 December 2013														
Funding deed clause 5.4.1							5.4.2 (a) Note 1	5.4.2 (b)				5.4.2 (c)	5.4.2 (d) Note 2	Additional information
Interventions	A ) Annual Work Programme	B) Actual year to date expenditure	( B - A ) Variance (under) over	(B / A) Progress to date	Financial progress indicator (\$)	Intervention progress indicator	D) Council Funding excluding Crown grants	E) Crown funding received	F) Crown funding applied	G) = (E - F) Crown funding not spent surplus (deficit)	H) Reserve interest accrued to date	I) Other funding sources to date	(D + E + H + I) Total funding received to date	
	\$000	\$000	\$000	%			\$000	\$000	\$000	\$000	\$000	\$000	\$000	
Lake Rotoehu														
Weed Harvesting	100	90	(10)	90%	🟡	🟢	45	0	45	(45)	0	0	45	Feb14 : Change Request (CR)002 approved for purchase of weed harvester. Original 100k - OPEX only. Costs to date cover OPEX & CAPEX costs. Feb 14 : Plan in place to confirm agreement with Landowners in 13/14.
Land Management Change	1,298	0	(1,298)	0%	🟡	🟢	0	0	0	0	0	0	0	
Phosphorus Locking Soda Springs	100	47	(53)	47%	🟢	🟢	23	0	23	(23)	0	0	23	
Aeration	130	61	(69)	47%	🟢	🟢	30	0	30	(30)	0	0	30	
Sediment capping	0	0	0	0%	🟢	🟢	0	0	0	0	0	0	0	
Wetlands	0	0	0	0%	🟢	🟢	0	0	0	(0)	0	0	0	
Total Lake Rotoehu	1,628	198	(1,430)				99	0	99	(99)	0	0	99	
Lake Okareka														
Sewerage Reticulation	0	0	0	0%	🟢	🟢	0	0	0	0	0	0	0	N/A : Project complete
Land Management Change	0	0	0	0%	🟢	🟢	0	0	0	0	0	0	0	N/A : Scheduled in the draft budget 2014/15
Total Lake Okareka	0	0	0				0	0	0	0	0	0	0	
Lake Rotorua														
Land Management Change	6,573	0	(6,572)	0%	🔴	🔴	0	0	0	(0)	0	0	0	Feb14 : Delay in cabinet funding. Works deferred until 2014/15. Refer CR004.
Phosphorus Locking	525	304	(221)	58%	🟢	🟢	152	0	152	(152)	0	0	152	
Tikitere Diversions	2,687	198	(2,490)	7%	🔴	🔴	99	0	99	(99)	0	0	99	Feb 14 : Zeolite solution agreed. Design trials underway - focus on reducing CAPEX/OPEX costs of full scale plant. Schedule in place to deliver full scale plant in 14/15. Works deferred until 2014/15. Refer CR003.
Wetlands	0	0	0	0%	🟢	🟢	0	0	0	(0)	0	0	0	
Sewerage Reticulation	322	207	(115)	64%	🟢	🟢	104	0	104	(104)	0	0	104	
Total Lake Rotorua	10,107	709	(9,398)				354	0	354	(354)	0	0	354	

**Rotorua Te Arawa Lakes Programme - Six Monthly Report: Actual Year to Date**

Financial Statement for the period between 1 July 2013 and 31 December 2013

Financial Statement for the period between 1 July 2015 and 31 December 2015																
Funding deed clause 5.4.1							5.4.2 (a) Note 1	5.4.2 (b)				5.4.2 (c)	5.4.2 (d) Note 2			
Interventions	A ) Annual Work Programme \$000	B) Actual year to date expenditure \$000	( B - A ) Variance (under) over \$000	(B / A ) Progress to date %	Financial progress indicator (\$)	Intervention progress indicator	D) Council Funding excluding Crown grants \$000	E) Crown funding received \$000	F) Crown funding applied \$000	G) = (E - F) Crown funding not spent surplus (deficit) \$000	H) Reserve interest accrued to date \$000	I) Other funding sources to date \$000	(D + E + H + I) Total funding received to date \$000	Additional information		
Lake Rotoiti																
Sew erage Reticulation	3,178	110	(3,068)	3%	⊕	⊕	55	0	55	(55)	0	0	55	Feb14 : Env court hearing resulting in additional collaboration w ith community - delay to project until 2015/16. CR001 approved.		
	3,178	110	(3,068)				55	0	55	(55)	0	0	55			
Total Lake Rotoiti	3,178	110	(3,068)				55	0	55	(55)	0	0	55			
Rotorua District																
Treatment and Disposal	0	59	59	0%	⊕	⊕	30	0	30	(30)	0	0	30	Feb 14 : Unapproved expenditure. Change request required		
	0	59	59				30	0	30	(30)	0	0	30			
Total Lake Rotoiti	0	59	59				30	0	30	(30)	0	0	30			
Programme reserve account interest accrued																
Rotorua District Council	0	0	0		⊕		0	0	0	0	52	0	52	Money market deposit rate 2.5%		
Bay of Plenty Regional Council	0	0	0		⊕		0	0	0	0	21	0	21			
	0	0	0				0	0	0	0	72	0	72			
Total Programme	14,913	1,076	(13,836)				538	0	538	(538)	72	0	611			
5.4.2 (a) Note 1: Funding detail - Council																
RDC capital funding including Council debt funding and development contributions?							188									
BoPRC reserves							100									
Targeted rates							125									
General funding							125									
Total funding detail - Council							538									
5.4.2 (b) Note 2: Funding detail - any other source																
Miscellaneous income														0	No funding to date	
Total funding from any other source														0		
Key to progress indicators																
Progress to date on track							⊕									
Progress to date moderate risk							⊕									
Progress to date at risk							⊕									

### 9.3 Programme Reserve Funding

#### Rotorua Te Arawa Lakes Programme - 6 Monthly Forecast of Programme Reserve Funding

Forecast as at 31 December 2013

	2012/13						2013/14	2014/15 Onwards				5.4.2/5.4.3
	5.22 (b)	5.22 (e)	5.22 (f) (ii)		5.22 (i) (ii)	9.3.2		6 Monthly Report Forecast of Programme Funding				
	A) Project to Date Expenditure to 30 June 2013	B) Project to Date Crown Funding to 30 June 2013	C) Project to Date Application of MfE Funding	D) Programme Reserve Interest (not required)	E) MfE Funding contributions - Other Sources	(B + D + E - C) Project to Date Closing Balance Surplus (Deficit)		G) Commitment to Deferred Works	H) Commitment to Future Interventions	I) Amount available for Reinvestment	(F + G + H + I) Total Forecast	
	\$000	\$000	\$000	\$000	\$000	\$000		\$000	\$000	\$000	\$000	
Lake Rotoehu												
Weed Harvesting	596	200	298	0	0	(98)	251	0	0	0	251	Reset deficit to zero. Programme reserve funding for 2013/14 in lieu of grants
Land Management Change	1,061	250	531	0	0	(281)	649	0	0	0	649	Reset deficit to zero. Programme reserve funding for 2013/14 in lieu of grants
Phosphorus Locking Soda Springs	873	425	436	0	0	(11)	59	0	0	0	59	Reset deficit to zero. Programme reserve funding for 2013/14 in lieu of grants
Aeration	526	0	263	0	0	(263)	41	0	0	0	41	Reset deficit to zero. Programme reserve funding for 2013/14 in lieu of grants
Sediment capping	10	0	5	0	0	(5)	0	0	0	0	0	Reset deficit to zero. The annual report 12/13 excluded this as not in work programme budgets. Part of outcome based interventions so included in project to date
Wetlands	720	300	360	0	0	(60)	0	0	0	0	0	Reset deficit to zero.
Total Lake Rotoehu	3,786	1,175	1,893	0	0	(718)	1,000	0	0	0	1,000	
Lake Okareka												
Sew erage Reticulation	7,889	4,850	3,944	0	0	906	0	0	0	0	0	Reset to zero. Request to transfer to Rotorua Treatment and Disposal. RDC needs to confirm
Land Management Change	449	500	224	0	0	276	0	216	0	0	216	All project to date expenditure included; not capped to annual work programmes. Rebudgeted in 2014/15. Funding available reduced as programme reserves applied to other interventions in lieu of grants. This needs to be actioned in final annual plan as excluded in draft
Total Lake Okareka	8,338	5,350	4,169	0	0	1,181	0	216	0	0	216	

**Rotorua Te Arawa Lakes Programme - 6 Monthly Forecast of Programme Reserve Funding**  
Forecast as at 31 December 2013

	2012/13						2013/14	2014/15 Onwards				5.4.2/5.43
	5.22 (b)	5.22 (e)	5.22 (f) (ii)		5.22 (i) (ii)	9.3.2		6 Monthly Report Forecast of Programme Funding				
	A) Project to Date Expenditure to 30 June 2013	B) Project to Date Crown Funding to 30 June 2013	C) Project to Date Application of MfE Funding	D) Programme Reserve Interest (not required)	E) MfE Funding contributions - Other Sources	(B + D + E - C) Project to Date Closing Balance Surplus (Deficit)		G) Commitment to Deferred Works	H) Commitment to Future Interventions	I) Amount available for Reinvestment	(F + G + H + I) Total Forecast	
	✓ \$000	✓ \$000	✓ \$000	✓ \$000	✓ \$000	✓ \$000		✓ \$000	✓ \$000	✓ \$000	✓ \$000	
Lake Rotorua												
Land Management Change	1,230	1,000	615	0	111	496	0	0	0	0	0	Rebudgeted in 2014/15. Funding available reduced as programme reserves applied to other interventions in lieu of grants
Phosphorus Locking	3,564	2,475	1,782	0	0	693	371	0	0	0	371	Funding for 2013/14 in lieu of grants
Tikitere Diversions	1,059	1,775	529	0	0	1,246	178	0	0	0	178	Funding for 2013/14 in lieu of grants. Funding for deferred works reduced by reallocating funding to other interventions in lie of grants for 2013/14, and 2012/13.
Wetlands	455	0	227	0	0	(227)	0	0	0	0	0	
Sew erage Reticulation	22,641	9,675	11,320	0	0	(1,645)	111	0	81	0	192	Overspend -no grants received 2012/13. Off-set deficit to grants received for Rotoiti
Total Lake Rotorua	28,947	14,925	14,474	0	111	562	660	0	81	0	742	
Lake Rotoiti												
Sew erage Reticulation	12,068	11,075	6,034	0	0	5,041	81	3,122	0	0	3,203	Project delayed because of resource consents. Balance reduced by Rotorua scheme deficits.
	12,068	11,075	6,034	0	0	5,041	81	3,122	0	0	3,203	
Total Lake Rotoiti	12,068	11,075	6,034	0	0	5,041	81	3,122	0	0	3,203	
Rotorua District												
Treatment and Disposal	203	0	102	0	0	(102)	125	0	680	0	805	RDC to confirm. Approval sought for transfer of funds of \$906k from Lake Okaraka sew erage reticulation as project complete.
	203	0	102	0	0	(102)	125	0	680	0	805	
Total Rotorua District	203	0	102	0	0	(102)	125	0	680	0	805	
Total Programme	53,341	32,525	26,671	0	111	5,965	1,866	3,338	761	0	5,965	
MfE Programme Reserves held by:												
Rotorua District Council	42,800	25,600	21,400	0	0	4,200	317	3,122	761	0	4,200	
Bay of Plenty Regional Council	10,541	6,925	5,271	0	111	1,765	1,549	216	0	0	1,765	
Total Programme Funding Reserves	53,341	32,525	26,671	0	111	5,965	1,866	3,338	761	0	5,965	



**Rotorua Te Arawa Lakes Programme - 6 Monthly Forecast of Programme Reserve Funding**  
Forecast as at 31 December 2013

2012/13							2013/14	2014/15 Onwards				5.4.2/5.43  Additional Information
5.22 (b)	5.22 (e)	5.22 (f) (ii)		5.22 (i) (ii)	9.3.2		6 Monthly Report Forecast of Programme Funding					
A) Project to Date Expenditure to 30 June 2013	B) Project to Date Crown Funding to 30 June 2013	C) Project to Date Application of MfE Funding	D) Programme Reserve Interest (not required)	E) MfE Funding contributions - Other Sources	(B + D + E - C) Project to Date Closing Balance Surplus (Deficit)		F) Forecast Application of Programme Funding	G) Commitment to Deferred Works	H) Commitment to Future Interventions	I) Amount available for Reinvestment	(F + G + H + I) Total Forecast	
✔ \$000	✔ \$000	✔ \$000	✔ \$000	✔ \$000	✔ \$000	✔ \$000	✔ \$000	✔ \$000	✔ \$000	✔ \$000	✔ \$000	
MfE Programme Reserves held by:												
Rotorua District Council	42,800	25,600	21,400	0	0	4,200	317	3,122	761	0	4,200	
Bay of Plenty Regional Council	10,541	6,925	5,271	0	111	1,765	1,549	216	0	0	1,765	
Total Programme Funding Reserves	53,341	32,525	26,671	0	111	5,965	1,866	3,338	761	0	5,965	
Forecast Opening Balance by Year												
	Opening Balance 13/14	Movement 13/14	Opening Balance 14/15	Movement 14/15	Opening Balance 15/16	Movement 15/16	Opening Balance 16/17					
Rotorua District Council	4,200	317	3,883	✔ 2,777	1,106	1,106	0					
Bay of Plenty Regional Council	1,765	1,549	216	216	0	0	0					
Total Programme Funding Reserves	5,965	1,866	4,099	2,993	1,106	1,106	0					

Based on current forecast RDC will hold programme reserves until 2015/16  
Based on current forecast BopRC will hold programme reserves until 2014/15 for one intervention only

Based on current forecast RDC will hold programme reserves until 2015/16

Based on current forecast BopRC will hold programme reserves until 2014/15 for one intervention only