STATEMENT OF COST OF ACTIVITIES

environmental monitoring

For the year ended 30 June 2011

Actual 30-Jun-10 Cost of Services $		Note	Actual 30-Jun-11 Cost of Services $	Annual Plan 30-Jun-11 Cost of Services $	Variance $
	REVENUE				
1,494,776	User Charges		1,537,702	1,506,359	31,343
1,494,776	TOTAL OPERATING REVENUE		1,537,702	1,506,359	31,343
	EXPENDITURE				
2,048,434	Personnel Costs	1	2,088,949	2,269,342	180,393
163,124	Depreciation		164,904	136,901	(28,003)
1,206,121	Other Operating Expenses	1	1,509,849	1,284,589	(225,260)
1,498,703	Support Costs internally allocated to Activity	2	1,713,493	1,585,212	(128,281)
4,916,382	TOTAL OPERATING EXPENDITURE		5,477,196	5,276,044	(201,152)
163,122	Less Non-Cash Items		164,904	136,901	(28,003)
3,258,484	NET CASH COST/(SURPLUS) OF ACTIVITY		3,774,590	3,632,784	(141,806)
	Funded by:				
1,296,624	Targeted Council Service Rate		1,703,647	1,711,015	7,368
451,843	Investment Income		1,264,815	1,086,281	(178,534)
1,510,017	Transfer from/(to) Cash Reserves		806,128	835,487	29,359
3,258,484	TOTAL OPERATING FUNDING		3,774,590	3,632,783	(141,807)
155,242	CAPITAL EXPENDITURE		192,166	231,822	39,656
	Funded by:				
155,242	Targeted Council Service Rate		38,125	56,946	18,821
–	Transfer from Cash Reserves		154,042	174,876	20,834
155,242	TOTAL CAPITAL FUNDING		192,166	231,822	39,656
	TOTAL OPERATING EXPENDITURE BY ACTIVITY				
1,800,752	State of the Environment Monitoring		2,122,918	2,132,471	9,553
1,942,716	Resource Consent Compliance	1	2,094,645	1,902,120	(192,525)
798,936	Environmental Incidents Response	1	877,262	789,740	(87,522)
373,977	Hazardous Substances and Contaminated Sites	1	382,371	451,712	69,341
4,916,382	TOTAL ENVIRONMENTAL MONITORING		5,477,196	5,276,043	(201,153)

Variance compared to 2010-2011 Annual Plan:

Expenditure

1. Resource Consent Compliance expenditure was over budget due to higher than budget salaries and wages costs, which is somewhat offset by the under spend in salaries and wages costs in other Monitoring activities. In addition consultancy costs were over budget, with the revenue generated from consultants providing greater revenue than originally budgeted.

   Environmental Incidents Response expenditure is over budget due to increased legal fees, consultants and pollution clean up costs associated with infringements and enforcement actions. These costs are in the main recovered from the prosecuted parties.

   Hazardous Substances and Contaminated Sites expenditure is less than budgeted due to lower than budgeted wages and salaries costs as described above, and lower than budgeted chemical collection/store costs and commercial testing costs.
2. Support costs internally allocated are higher than budget due to expenditure being greater than budget on these support costs. Increases in support costs relate to rate write-offs and an increase in the provision for doubtful debts of $493,000. The increase in doubtful debts provision primarily relates to increased rating arrears from the Far North District Council. Other expenditure increases include increased staff recruitment costs, building repairs and maintenance, cost of printing the Annual Plan and legal fees.

LEVELS OF SERVICE

environmental monitoring

The Environmental Monitoring Group of Activities includes:

- State of the Environment Monitoring
- Compliance Monitoring
- Environmental Incidents Response
- Hazardous Substances and Contaminated Sites

Why we do these activities

The council's monitoring regime promotes sustainable resource management by identifying significant environmental issues and trends in the region; by providing scientifically sound information to facilitate informed decision-making; to monitor the effectiveness of council's policy documents; and to minimise the adverse effects of people's use of the environment by ensuring compliance with resource consents, regional plans and statutory environmental standards.

The data collected from the council's telemetered rainfall and river level sites throughout Northland provided vital information to farmers during the significant drought which occurred over the 2009-2010 summer.

Water quality is monitored at popular bathing sites over the summer months and at food collection spots year round for the personal safety of Northlanders. Where contamination is shown to be as a result of human sources such as pastoral farming, council staff are working with land owners to improve riparian management in an effort to improve water quality.

The main purpose of air quality monitoring is to find out where air pollution might affect human health.

Contribution to community outcomes:

Northland residents are safe and healthy by:

- Removing hazardous substances from the environment;
- Providing an indication of water quality for swimming and collection of shellfish; and
- Minimising the discharge of potentially harmful contaminants.

Northland's infrastructure is developed in a sustainable way by:

- Ensuring that infrastructure such as stormwater systems, sewage and roading comply with relevant resource consent conditions and regional plans.

Northland's natural environment is sustainably managed by:

- Ensuring that activities are complying with the relevant rules and regulations to ensure the use of natural resources in a sustainable manner;
- Monitoring the state of the environment to ensure desired environmental outcomes are being achieved; and
- Identifying significant trends/issues requiring actions.

Northland is prosperous by:

- Sustainably managing Northland's natural resources to support industry growth in areas such as tourism, aquaculture and pastoral farming.

Northland has cohesive communities by:

- Involving the community, including Māori, in environmental monitoring activities resulting in a sense of partnership and ensuring that the place of Māori is recognised and respected.

Northland residents have access to recreational and leisure opportunities by:

- Minimising the impact that contaminated discharges can have on the natural environment so that it can be enjoyed for recreation and leisure activities.

What we did

Annual Monitoring Report

The Annual Monitoring Report (AMR) for 2009-2010 was completed in August 2010, presented to the September 2010 Environmental Management Committee and was made available on the council's website. The bathing report for the 2009-2010 summer was also completed.

The next State of the Environment Report, compiled every five years, will be completed in 2012-2013.

Compliance monitoring results for 2010-2011

A very high standard is set in this area due to the importance of compliance monitoring. While we have not achieved all of our targets a high level of performance continues to be attained.

- 100 percent of consent having documented monitoring programmes (2010: 98%).
- 100 percent or better of monitoring results being loaded against council's databases and reported to appropriate parties (2010: 95.5%).
- 100 percent reporting of monitoring results reported to the council on a monthly basis (2010: 100%).
- 69 percent of significant non compliances have had enforcement action taken. A resourcing gap contributed to the lower than usual result (87% last year) with some follow up action being delayed. Recruitment has since been successful and next year's results should be better.
- 100 percent of all significant water abstractions were monitored (2010:100%).

There is a heavy demand on resources so these levels of achievement are considered to be good. Efforts will continue to maintain this high level of service with the resources available.

LEVELS OF SERVICE

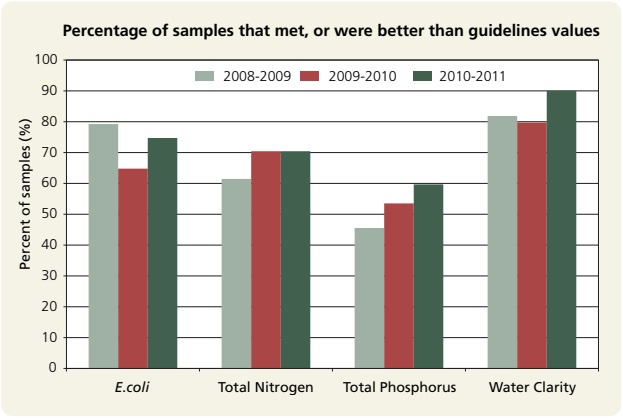
environmental monitoring

Water quality

Key points for 2010-2011:

- Water clarity improved at 17 sites and decreased at 11 sites which compared favourably with the 2009-2010 results of improvement at 13 sites and deterioration at 18 sites.
- *E.coli* concentrations also had better results than the previous year with improvement at 18 sites (compared to six sites) and deterioration at five sites (compared to 27 sites).
- Total Nitrogen concentrations improved at 12 sites (compared with 22 sites) and declined at nine sites (compared with 11 sites).
- Total Phosphorus concentrations improved at 17 sites (compared to 21 sites) and declined at five sites (compared to eight sites).

Water quality monitoring of rivers and streams is undertaken at 35 sites throughout Northland as part of the state of the environment monitoring network. Four of these sites are monitored by the National Institute of Water and Atmospheric Research (NIWA). The monitoring network covers a large geographic range and is representative of stream types in Northland to give us a good understanding of the state of the environment for the region as a whole.



Water quality is monitored monthly for a range of properties such as bacteria and nutrients. Results are compared to environmental guidelines for bathing safety – *'Microbial Water Quality Guidelines for Marine and Freshwater Recreational areas'* (Ministry for the Environment, Ministry of Health, 2002), and aquatic ecosystem protection – *The Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC 2000). Poorer water clarity can be seen in highly erodible catchments, e.g. Utakura, Ruakaka and Paparoa Rivers, and generally in response to heavy rainfall. Long-term trends show that there are improving trends for water clarity at 29 percent of sites with more than five years worth of data.

During 2010-2011 faecal source tracking investigations were undertaken at five sites where there were consistently high bacteria levels in order to try and isolate the source(s) of contamination. Initial results indicate that the main source of contamination is from herbivores. Where faecal contamination is found to be from natural sources (i.e. from birds), little can be done to solve the problem. Where the source of contamination is non-avian, council staff liaise with landowners to discuss and implement land management options and ultimately reduce contamination. Further monitoring will continue in 2011-2012.

When compared to the previous year's data notable improvements in total nitrogen water quality were observed at 12 sites. Long-term trends show that there are improving trends for total nitrogen at 18 percent of sites with more than five years worth of data.

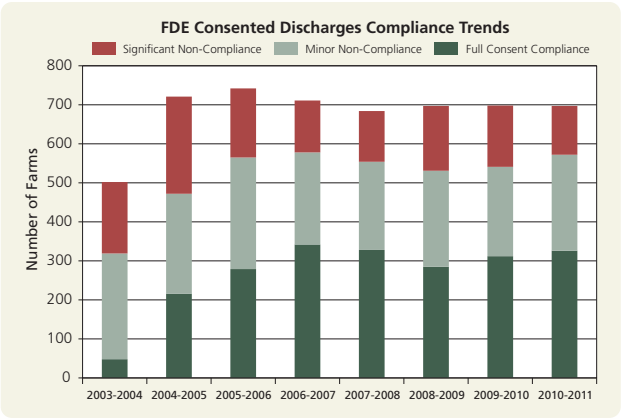
Most sites showed moderate performance in comparison to the total phosphorus guidelines for protection of aquatic ecosystems. This is partly due to Northland's phosphorus-rich sandstone and mudstone catchment geology, which provides a naturally high background level of phosphorus to streams. Long-term trends show improving trends for total phosphorus at 65 percent of sites with more than five years worth of data.

Farm Dairy Effluent monitoring

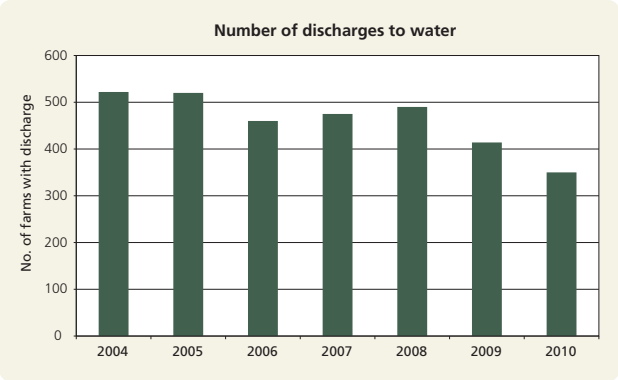
The Farm Dairy Effluent (FDE) monitoring programme is council's single largest compliance monitoring programme, accounting for almost 25 percent of the total number of activities monitored. All farms are inspected at least once per season. In addition, follow-up inspections are made to all farms found to have significantly non-compliant discharges. The aim of the programme is to monitor the effects of the approximately 13,000 cubic metres of farm dairy effluent produced daily during the milking season, and to protect water quality by promoting and enforcing compliance with standards set in resource consents and regional plan rules.

The current FDE monitoring programme encompassing compliance monitoring, enforcement and the promotion of best practice is proving effective in gaining substantial improvements in farm dairy effluent management in the region. There are now very few farms across Northland that have not upgraded or improved their farm dairy effluent treatment/disposal systems over the last five years.

It is acknowledged that the current rate of non-compliance is higher than acceptable. However, this is due in part to the lifting of standards which are aimed at achieving improved water quality. With the initiatives being implemented it can be expected that published compliance rates will improve from the 2011-2012 season.



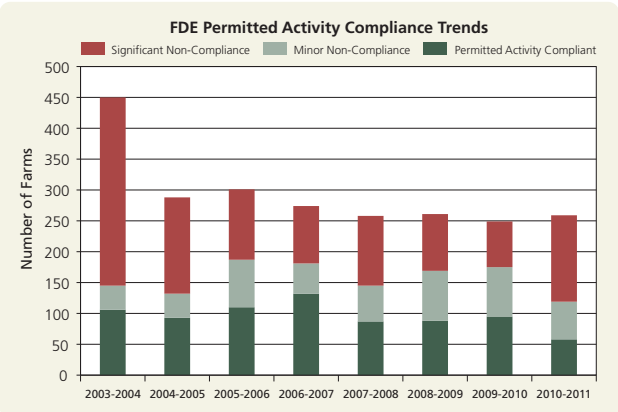
The positive trend of increasing full compliance and decreasing significant non-compliance has continued again this last season. There has been an approximately six percent decrease in the number of significant non-compliant farms over the last two years. Another very positive trend for the consented farms is the increasing number of farms which now have hybrid systems – that is, treatment ponds plus land application. This means less effluent discharged to water. The graph below shows this trend. There are now about 250 consented farms with hybrid systems (just over one-third). In the 2010-2011 season, only 50 percent of consented farms were discharging to water at the time of their effluent inspection.



The number of farms with hybrid systems will continue to increase. All farm dairy effluent consents will be renewed between 2008 and 2011 (there were approximately 30 outstanding as at 30 June 2011 from a total of 716). Monitoring and consents staff have developed a procedure to ensure that every farm will have an effluent treatment and disposal system that is the best practicable option (BPO) for that farm. Special conditions are written into the consents for specific issues, such as upgrades to the system or use of a land application system. The benefits from these new consents have not yet been fully realised. It is expected that this will have a very positive effect on future compliance rates for consented farms and for improved water quality.

Non-consented Farms

Unfortunately, the same positive trend has not been seen with the non-consented farms. However, it must be noted that the grading system for the 2010-2011 monitoring season was changed. Previously, farms with no, or inadequate, contingency storage were graded minor non-compliant. In 2010-2011 farms that still had insufficient storage were graded as significantly non-compliant, affecting approximately 40 farms. At least a quarter of these farms have already made contact with regional council staff to get the dimensions required for pond storage and a number of storage ponds have already been constructed.



This monitoring season saw the issue of 138 abatement notices and 144 infringement notices. The infringement notices carry a $750 fine. Three prosecutions have also been initiated. In two of these cases charges have been laid against the farm owners. In the third case, charges have been laid against both the farm owner and farm manager. Charges are laid on the basis of responsibility and culpability.

Promoting good practice – working with industry

The Northland Effluent Improvement Project Group has continued to meet at least twice annually and includes representatives from Fonterra, DairyNZ, Farmers of New Zealand, Federated Farmers, Northland Regional Council and farmers. The group met in March to review the season and discuss improvements or new initiatives for next season. The key action points were a joint communication strategy and the promotion of AgITO effluent training courses.

Specific actions undertaken to promote best practice during the 2010-2011 season included:

- Jointly running four feedpad field days with DairyNZ. Average attendance at each field day was approximately 50.
- Participated in effluent meetings/training days with key stakeholders.
- Council purchased a quantity of roll-flat hose and low-application irrigation pods for trial by farmers. These have proved very popular.
- A3 laminated copies of permitted activity rules provided to all farms with land application systems.
- Dairy Farmer Newsletters – three were distributed during the 2010-2011 season.
- Release of the new booklet "A guide to managing farm dairy effluent in Northland" (jointly with DairyNZ).
- Currently planning "targeted field days" for small groups with specific requirements.

Recreational bathing water quality programme

Twenty-four freshwater and 61 coastal popular swimming sites were monitored through the programme from November 2010 to March 2011.

Coastal sites

- 22 coastal sites met the safe criteria 100 percent of the time (2010: 45).
- 21 met the safe criteria on all but one occasion 2010: 13).
- 16 met the safe criteria on all but two occasions (2010: three).
- Two sites did not meet the safe criteria on more than two occasions.

LEVELS OF SERVICE

environmental monitoring

Freshwater sites

- Four freshwater sites met the safe criteria 100 percent of the time (2010: six).
- Two met the safe criteria on all but one occasion (2010: two).
- Nine sites met the safe criteria on all but two occasions (2010: four).
- 17 freshwater sites were investigated to find the source of faecal contamination.

Overall, fewer freshwater sites met the safe criteria for swimming 100 percent of the time in 2010-2011 compared to 2009-2010. This was also largely due to three major rainfall events which accounted for 35 percent of the non-compliance results due to increased rainfall-runoff entering freshwater systems.

The council takes action to investigate poor water quality at problem sites within the region. This action includes identifying the source(s) of contamination, sanitary surveys at sites where there is human contamination, follow-up sampling at coastal sites with non-compliant results, and additional monitoring after rainfall to determine when sites are 'safe' for swimming again.

Where these actions show the permanent source of contamination is natural (i.e. from birds), the sites will be removed from the programme and permanent signs erected. Also, if sites are always 'safe' for swimming, they too may be removed so other sites can be monitored.

A total of 17 sites have now been investigated. Source tracking to isolate the sources of contamination at these sites has shown that 14 are intermittently contaminated by wildfowl (ducks and/or gulls). Ten sites are contaminated by ruminant (herbivore) faecal material; five sites with dog faecal material and two sites by a human source of pollution.

Where the source of faecal contamination is natural (i.e. from birds), little can be done to correct the problem and permanent signage is developed. In areas where the source of contamination is non-avian, regional council staff work with landowners to implement land management options and ultimately reduce contamination. Further monitoring including sanitary surveys will continue in 2011-2012.

For more information, or a breakdown of the past bathing water quality results go to *www.nrc.govt.co.nz/swimming*

Environmental incidents response

Response to environmental incidents was maintained at a high level with all significant incidents being responded to and 111 of those resulting in significant environmental adverse effects having formal enforcement action taken against them. Where a public health risk is considered to exist, 100 percent of these incidents were notified to Northland Health for appropriate advisory warnings.

Hazardous substances and contaminated sites

A collection service for waste hazardous substances was provided to Northland ratepayers throughout 2010-2011. A total of 5.38 tonnes of waste was collected and sent to Auckland or exported for safe disposal.

The council's potentially contaminated land (HAIL) database continues to be maintained and updated. This information has been provided to all district councils for use in their statutory processes.

Activity 7.1 State of the Environment Monitoring

Objective: Promote sustainable resource management by identifying significant environmental issues and trends in the region, provide scientifically sound information to facilitate informed decision-making and monitor effectiveness of the council's policy documents.

2010-2012 Performance Measures and Targets

7.1.1 Monitor and identify significant environmental issues and trends in the region.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
a. Operate a region-wide quality network for the measurement, recording and reporting of groundwater, river and lake water quality trends and soil quality trends. • Annual percent compliance of rivers with relevant guidelines for five key parameters.	**Achieved** (2010: Achieved). All river monitoring undertaken as planned. This updates our data on the health of our rivers and enables us to provide feedback to policy developers, consent processors and the community on the state of Northland's rivers. Further detail is available in the annual monitoring report at *www.nrc.govt.nz/amr*
Rivers Baseline 2007-2008 — Compliance %	2011 Compliance %
Bacteria — 81%	84% (2010:84%)
Water Clarity — 85%	100% (2010: 87%)
Dissolved oxygen — 100%	100% (2010:100%)
Total nitrogen — 61%	77% (2010:81%)
Total phosphorus — 45%	58% (2010:61%)
	All parameters were greater than 2007 baseline. This is supported by trends published in the Northland River Water Quality Monitoring Network: State and Trends 2010 report. Trends are calculated for sites with more than five years worth of data (currently 17 sites). There are improving trends for: total phosphorus at 65% of sites; total nitrogen at 18% of sites; and water clarity at 29% of sites. There were no significant trends (either improving or declining) for bacteria at 16 sites, and only one declining trend.
b. Report on summer coastal and freshwater bathing water quality and water quality for the collection of shellfish at various sites. • Annual median percentage compliance of 20 representative bathing sites to the Ministry of Environment Guidelines.	**Achieved** (2010: Achieved, 86 sites monitored). 85 sites monitored weekly across Northland. Results reported weekly and published on website at *www.nrc.govt.nz/swimming* Final report completed in July 2011. *Continued on following page.*

LEVELS OF SERVICE

environmental monitoring

Activity 7.1 State of the Environment Monitoring continued

7.1.1 Monitor and identify significant environmental issues and trends in the region.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
b. Continued. • 2007-2008 baseline percentage – 95%	**Not achieved** (2010: Achieved, 100% annual median compliance). 92% annual median compliance across the 20 bathing sites was achieved. In 2010-2011, six of the permanent monitoring sites recorded a higher rate of compliance than in 2007-2008, 11 recorded a lower level of compliance and three recorded the same level of compliance. Non-compliances were associated with several high-intensity rainfall events during the 2010-2011 sampling season that affected results at some sites. In 2009-2010 the annual median compliance was 100%. This shows the impact weather conditions have on the results from the bathing programme from year to year, given that Northland experienced widespread drought during the 2009-2010 summer. *See the Recreational Swimming Water Quality in Northland: Summer 2010-2011 report for more information.* Microbial source tracking undertaken on 14 sites in Northland during the 2010-2011 summer showed the source of bacterial contamination to be from wildfowl (birds) at 10 sites, ruminant (herbivore) at 10 sites and human at one site (some sites have more than one source of contamination). Action is being taken to eliminate the human source and reduce the ruminant sources of contamination. Nothing can be done about wildfowl – it is a result of the natural environment.
c. Monitor ambient air quality in line with the priorities of the National Environmental Standard for Air and the Regional Air Quality Plan. • Annual percent of compliance with the national environmental standards (NES).	**Achieved** (2010: Not achieved, 20% compliance as only one of the five airsheds was monitored). Full compliance achieved. Carbon monoxide (CO) and sulphur dioxide (SO_2) levels were well below national environmental standards for 2010-2011. The national environmental standard states for ambient air quality that particulate matter (PM_{10}) shall not exceed the limit of 50 microns per cubic metre more than once in a 12 month period. PM_{10} is a collective term used to describe very small solid or liquid particles in the air, such as dust, fumes, smoke and fog. PM_{10} comes from both natural – wind blown dust, forest fires or pollen – and manmade sources including automobile exhausts, solid fuel burning and industrial emissions. Wood burning fires used for home heating are the main source of PM_{10} in Whāngārei. The Whāngārei airshed did not exceed 35 microns and the Kaitāia airshed did not exceed 30 microns. National environmental standard for SO_2 concentrations is 350 micrograms per cubic metre ($\mu g/m^3$) over a one hour average and for CO concentrations it is 10 mg/m^3 eight hour running averages.

Activity 7.1 State of the Environment Monitoring continued

7.1.1 Monitor and identify significant environmental issues and trends in the region.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
d. Operate a region-wide hydrometric network for the measurement, recording and reporting of rainfall, river flows, lake, groundwater and tide levels.	
• No more than a seven day missing record per site annually for all automatic measuring stations.	**Not achieved** (2010: Not achieved). Five out of 111 automatic recording sensors experienced seven days or more of missing records, mainly a result of instrument failures and storm damage. Faulty instrumentation has been replaced.
Baseline 2007-2008 compliance – 90%	95.5% compliance (2010: 92.3%)
• Relevant information will be available on the Hydrology Group archive within three months of production.	**Not achieved** (2010: Not achieved). Due to continuing drought conditions at the end of 2010 and various storm events early 2011. Compliance monitoring of the water takes were given higher priority during the drought period. Number of automatic sensors with data not on the archive within three months is 65 out of 111 sensors (58%). Data from manual rainfall stations (44) up to date. Data from manual groundwater stations up to date. Data from Aupōuri, Poutō and Kaikohe lakes up to date. An interim target from March 2011 was to complete 50% to 60% of the outstanding processing by end of June; which was achieved.
Baseline 2007-2008 compliance – 20%	42% compliance for total year (2010: 2.2% from 91 sensors).
e. Establish water management zones on a prioritised basis for allocation of freshwater resources.	
• Report progress via the relevant environmental monitoring report to council.	**Not achieved** (2010: Achieved). Management zones have been identified and mapped. Initial assessment for water allocation in zones (i.e. over/under allocation) identified based on proposed National Environmental Standard and ecological flows. Progress report was provided to the April council meeting via the CEO report. Further data gathering will be undertaken on specific catchments to more accurately determine the current allocation. Full reporting is scheduled for early 2012.

LEVELS OF SERVICE

environmental monitoring

Activity 7.1 State of the Environment Monitoring continued

7.1.1 Monitor and identify significant environmental issues and trends in the region.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
f. Identify 'at risk' aquifers and carry out investigations to better understand this resource. • Report results each year in the Annual Monitoring Report and every five years in the State of the Environment Report.	**100% achieved** (2010: Achieved). Aquifer systems and results reported for the 2009-2010 Annual Monitoring Report. Further results reported in the 2010-2011 Annual Monitoring Report available at *www.nrc.govt.nz/amr* In 2009-2010 five aquifers were identified with potential issues for further investigation: Ruāwai (salt water intrusion and iron), Taipā (salt water intrusion and nitrate), Maungakaramea (nitrate), Russell (salt water intrusion and bacterial) and Whatitiri (nitrate). Investigations during 2010-2011 show that the nitrate levels have not exceeded the New Zealand standards in the past 12 months and the excessive bacterial level at Russell has not re-occurred. The high iron at Ruāwai is a result of natural processes. The saline levels from salt water intrusion are well below New Zealand standards.
g. Monitor water and sediment quality in Northland harbours on a prioritised basis. • Annual percent compliance for priority harbour waters with appropriate guideline values.	Water samples are analysed for physical properties such as temperature, salinity and turbidity – how clear the water looks – and for chemical parameters such as nutrients (ammonia, phosphorus and nitrogen). Bacteria present in the water are measured using *Enterococci*, faecal coliforms and *E. coli*, which are indicators of faecal contamination. *Enterococci* is the indicator most closely correlated with health effects in New Zealand marine waters. Faecal coliforms are not as closely related to human health effects however they are useful in environmental circumstances, such as brackish or estuarine environments, where levels of *Enterococci* may occur naturally in mangrove forests. The 2007-2008 baseline compliance year was picked arbitrarily to fit with the production of the 2009-2019 LTCCP. (A baseline was necessary to illustrate trends in future LTCCP and annual reporting.) The council has chosen to use the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC guidelines) instead of that arbitrary baseline year for annual reporting this year. We have used the ANZECC guideline as it is regarded as best practice in New Zealand. (The guidelines have been derived to provide some confidence that there will be no significant impact on environmental values if they are achieved. The guidelines provide trigger values, i.e. values that should trigger action or further assessment and also help us establish water quality objectives that will maintain the environmental values of water resources. They are not standards. Please note that specific water body objectives can be set that are more or less stringent than the guideline value and that this is usually done in consultation with others, such as the local industries, businesses, hapū and iwi and the public, to ensure the costs and benefits of that objective are known and accepted.) Using the low value is prudent to manage risk. *Continued on following page.*

Activity 7.1 State of the Environment Monitoring continued

7.1.1 Monitor and identify significant environmental issues and trends in the region.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
g. Continued.	Water quality results were reported in the 2010-2011 Annual Monitoring Report *www.nrc.govt.nz/amr*
Harbour waters – Whāngārei ANZECC and MfE guidelines	
Enterococci – <140 MPN/100mL	87% of *Enterococci* (2007-2008: 100%).
Water clarity – <10 NTU	85% turbidity levels (2007-2008: 100%).
Dissolved oxygen – >80 and <110 % saturation	91% dissolved oxygen (2007-2008: 50%).
Nitrite-nitrate nitrogen – 0.015 Mg/L	31% of nitrite-nitrate nitrogen (2007-2008: no measurement).
Total phosphorus – 0.03 Mg/L	44% of total phosphorus (2007-2008: no measurement for any phosphorus readings). 25% of dissolved reactive phosphorus. 45% of ammonium.
Harbour waters – Bay of Islands ANZECC and MfE guidelines	**100% sampling achieved**. There was no 2007-2008 compliance baseline recorded for the Bay of Islands.
Enterococci – <140 MPN/100mL	90% of *Enterococci*.
Water clarity – <10 NTU	90% turbidity levels.
Dissolved oxygen – >80 and <110 % saturation	83% dissolved oxygen.
Nitrite-nitrate nitrogen – 0.015 Mg/L	33 % of nitrite-nitrate nitrogen (total nitrogen was not measured).
Total phosphorus – 0.03 Mg/L	52 % of dissolved reactive phosphorus. 67 % of ammonium. 85 % of total phosphorus.
• Two-yearly percent compliance for priority harbour sediment with appropriate action levels.	The council has chosen to use the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC guidelines) as they are regarded as best practice in New Zealand. We use the ANZECC-low guideline. Sediment quality results reported for the 2010-2011 Annual Monitoring Report. A summary of the comparisons to previous years is within the previous activity commentary.
Harbour Sediments – Bay of Islands ANZECC guidelines	**100% sampling achieved** (16 sites).
Zinc – 200 mg/kg	100% achieved.
Copper – 65 mg/kg	100% achieved.
Lead – 50 mg/kg	100% achieved.
Cadmium – 1.5 mg/kg	100% achieved.
Chromium – 80 mg/kg	100% achieved.
Harbour Sediments – Whāngārei ANZECC guidelines	**100% sampling achieved** (16 sites).
Zinc – 200 mg/kg	Not achieved. 94% achieved due to high zinc levels at one site.
Copper – 65 mg/kg	100% achieved.
Lead – 50 mg/kg	100% achieved.
Cadmium – 1.5 mg/kg	100% achieved.
Chromium – 80 mg/kg	100% achieved.

LEVELS OF SERVICE

environmental monitoring

Activity 7.1 State of the Environment Monitoring continued

7.1.1 Monitor and identify significant environmental issues and trends in the region.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
h. Undertake a prioritised estuary health monitoring programme. • Annual percentage of compliance with suitable estuary health indices for three estuaries up to 2009 and five estuaries from 2010.	**100% achieved** (sampling 10 sites). Final results reported in the 2010-2011 Annual Monitoring Report and at the September Northland Regional Council Environment Management Committee meeting. We have assessed the sediment metal concentrations against ANZECC-low guideline values. Currently there are no guidelines available for sediment nutrient concentrations. (To establish a guideline value you need a long-term data set – at least three years. We are currently collecting the data to establish the information set. In the interim we have compared our current results for water with other North Islands regions. For all harbours except the upper Whāngārei Harbour our results are in step with other regions for nutrients. We are carrying out further investigations with Whāngārei District Council to see how we can improve the picture for the Whāngārei Harbour. The ANZECC guidelines state that we can develop our own regional indicators/guidelines when we have a longer dataset. To complicate matters there are no biological (animal indicator species) data guidelines available. So we can't use the presence of a particular animal as a proxy for a healthy harbour. We are in the process of developing our own baseline but as discussed above this takes a minimum of three years of data to get a baseline (Robinson et al., 2002). Zinc 100% Copper 100% Lead 100% Cadmium 100% Nickel 89% Chromium 100%
i. Monitor the effectiveness of council policy documents. • Report on actual monitoring results compared to policy objectives every five years in the State of the Environment Report.	**Not applicable to this reporting period or last year**. The next State of the Environment Report is due in 2012.

Activity 7.1 State of the Environment Monitoring continued

7.1.2 Provide scientific environmental information to the public and the council to facilitate informed decision-making.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
a. Produce and publish an annual monitoring report. • Post on the council's website by 31 October each year for the previous period 1 July to 30 June.	**Not achieved** (2010: Not achieved). The 2009-2010 report was loaded to the website four weeks late. The process has been further streamlined to facilitate meeting this deadline for the 2010-2011 report. Visit *www.nrc.govt.nz/amr*
b. Provide hydrometric information and advice in an accurate and timely way. • All advice provided in accordance with ISO accredited council policies and procedures and no justifiable complaints received each year.	**Achieved** (2010: Achieved). 100% complete. A total of 165 major information requests and enquires were registered from 1 July 2010 to the end of June 2011. There were no complaints during this period.

7.1.3 Promote improved environmental practices within the Northland region.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
a. Undertake site visits to selected industries to promote cleaner production practices. • Complete at least 25 site visits per year and report to council in the environmental monitoring report.	**Not achieved**. (2010: Not achieved). Eight visits recorded for the reporting period. An additional four site visits were made to the Re:Sort Transfer Station where the Waste Management Team is working on a number of cleaner production projects in conjunction with Whāngārei District Council and Paper Reclaim. The low visit numbers occurred because of low resourcing with the contracted hazardous substances monitoring service taking priority. For contracted hazardous substances monitoring service was not renewed for 2011-2012 which will allow sufficient resourcing for these site visits. We also intend to review the procedure manual and implement more rigorous guidelines, as well as update our quality programme manual for cleaner production.

LEVELS OF SERVICE

environmental monitoring

Activity 7.1 State of the Environment Monitoring continued

7.1.3 Promote improved environmental practices within the Northland region.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
b. Promote and support community-based estuarine restoration projects on a prioritised basis. • Commence during 2010 and complete implementation during 2011. Report results each year in the Annual Monitoring Report and every five years in the State of the Environment Report.	**Not achieved** (2010: Not achieved). Assistance with support and promotion of estuarine restoration projects has been undertaken with a priority focus on Aurere Estuary (Te Runanga-a-Iwi O Ngati Kahu), the Bay of Islands (Living Waters), Ngunguru Estuary (Ngunguru School) and Hokianga Harbour (Waiora Hokianga). Community-led projects are also progressing with Northland Regional Council advice and assistance in the Kaipara Harbour (Integrated Kaipara Harbour Management Group) and Whangaroa Harbours (Whangaroa Community Development Working Party). Community mangrove management initiatives are also well advanced at Mangōnui, Rangaunu, Whananaki, Ruakaka, Whangaroa, Tauranga Bay, Chucks Cove, Mangawhai, and Tinopai. Initiatives and outcomes from this work are reported in the 2011 Annual Monitoring Report available at *www.nrc.govt.nz/amr* These projects will continue to be implemented in 2011-2012 and in some cases beyond.

Significant positive and negative effects on wellbeing

The State of the Environment Monitoring activity may have the following impacts on wellbeing:

Wellbeing	Positive effects	Negative effects
Social	Monitoring activities provide information to the public about health risks for swimming and shellfish gathering.	
Economic	Good management of water quality is beneficial to industries which require security of water supply and high water quality, such as marine farming and tourism.	Some people may consider the cost of monitoring has a negative economic impact on them personally, but overall it is considered that the advantages for the wider community outweigh the costs.
Environmental	Information gathered through SOE monitoring provides information to allow for informed decision-making in relation to sustainable environmental management.	
Cultural	Maintaining good air and water quality is a taonga to iwi and good management is parte of providing for their cultural beliefs and aspirations and maintains the mana of local iwi.	

Activity 7.2 Compliance Monitoring

Objective: Promote the sustainable management of resources and minimise the adverse effects of people's use of the environment by ensuring compliance with resource consents, regional plans and statutory environmental standards.

2010-2012 Performance Measures and Targets

7.2.1 Monitor and enforce compliance with resource consent conditions, regional rules and relevant statutory requirements.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
a. Documentation and implementation of monitoring programmes for water, land and air consents. This includes monitoring of: – Emission testing and/or appropriate off-site monitoring of major industrial discharges to air; – Effluent and receiving water quality testing of sewage, industrial and landfill discharges; – Land clearance, earthworks, and river works that are the subject of resource consents; – Bore construction; and – Farm dairy effluent treatment and disposal systems.	
• 100% of monitoring programmes meet the standards of the council's independently audited and accredited ISO quality management systems.	**Achieved** (2010: Not achieved). 100% achieved (2010:98%). All 2123 records are complete.
• 100% of compliance assessments are recorded on the council's monitoring database and results reported to appropriate parties monthly.	**Achieved** (2010: Not achieved, 95.5%). A total of 2258 events were recorded and reported to council. There was one event which was recorded but not reported to council (which when rounded off equals 100% complete).
• 100% of all significant non-compliances are followed up and enforcement action taken where necessary.	**Not achieved** (2010: Not achieved, 87%). There were 332 significant non-compliances for the year. 105 farm dairy effluent (FDE) significant non-compliances were not followed up resulting in 69% follow-up. This was due to a resignation and subsequent gap in resources while recruitment was completed. Priority was given to six prosecutions and achieving the "Best Practicable Option" farm visits for consent renewals. There is now full FDE staffing and all follow-ups for the coming year will be achieved.
• Monitoring activity reported monthly in the council environmental monitoring report and annually in the council Annual Report.	**Achieved** (2010: Achieved). All compliance monitoring activities reported.

LEVELS OF SERVICE

environmental monitoring

Activity 7.2 Compliance Monitoring continued

7.2.1 Monitor and enforce compliance with resource consent conditions, regional rules and relevant statutory requirements.

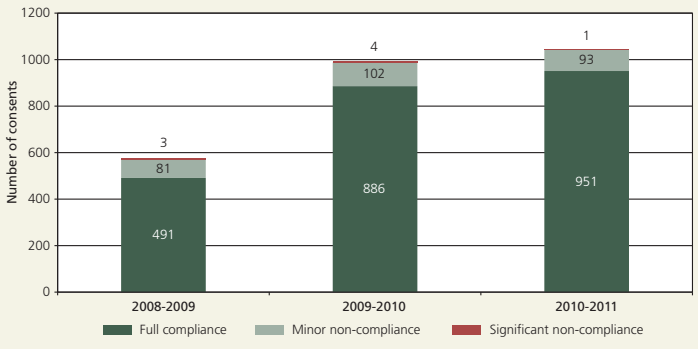
Performance Measures and Targets	Actual Service Performance to 30 June 2011
b. Inspection of significant coastal structures and works, marine farms and the carrying out of coastal surveys where there is sand mining activity.	
• 100% of monitoring programmes meet the standards of the council's independently audited and accredited ISO quality management systems.	**Not achieved** (2010: Not achieved, 98%). There was a total of 1160 coastal consents with one record not completed (99.9% complete).
• 100% of compliance assessments conducted at least once every five years and results reported monthly in the council's environmental monitoring report.	**Not achieved** (2010: Not achieved, 97.8%) There was a total of 1160 coastal consents, but only 793 were required to be monitored in this reporting period. There were 81 not monitored, resulting in 89.8% compliance. The lower result was due to staff shortages in the Bay of Islands area; recruitment has since been successful.
• 100% of all significant non-compliances are followed up and enforcement action taken where necessary.	**Achieved** (2010: Not achieved, 98%) There were 75 significant non-compliances. These were all followed-up and/or had enforcement action (100%).
c. Inspection of boat moorings to ensure they are properly authorised in accordance with the requirements of the Regional Coastal Plan and the Navigation Safety Bylaw 2007 and that their positions are accurately recorded.	
• 100% of moorings inspected once every three years. Results reported monthly in the council's environmental monitoring report and annually in the council annual report.	**Not achieved** (2010: Not achieved, 78%). 79% of moorings have up to date mooring inspection certificates issued for them. There are approximately 3000 moorings, and they are inspected on a rolling basis, i.e. roughly 1000 a year. The inspections are contracted and council officers are working with the contractor to improve the rate of inspections in the future which includes subsidising transport to Kaipara as there is no contractor on the West Coast.
d. Collection of water use records to determine compliance with resource consents including the consistent and accurate metering of consented takes.	
• 100% of monitoring programmes meet the standards of the council's independently audited and accredited ISO quality management systems.	**100% achieved** (2010: achieved, 100%). All 434 records met standards.
• Compliance assessments conducted at least once per annum. All significant non compliances are followed up with enforcement action taken where necessary. Results reported monthly in the council's environmental monitoring report and annually in the council annual report.	**Not achieved** (2010: Not achieved). 13 of 535 consents were not monitored in the year (97.6%). 100% of compliance assessments were reported to council and reported in the council's Annual Report. Only one significant non-compliance resulted in enforcement action being taken.

Activity 7.2 Compliance Monitoring continued

7.2.1 Monitor and enforce compliance with resource consent conditions, regional rules and relevant statutory requirements.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
e. Measurement of stream flows, groundwater and lake levels associated with significant water abstractions to ensure compliance with resource consent, including during prolonged dry periods.	
• 100% of monitoring programmes meet the standards of the council's independently audited and accredited ISO quality management systems.	**Achieved** (2010: Achieved). A total of 101 records have completed monitoring programmes.
• Conduct at least one flow measurement during the dry period for significant consents and report on compliance in the council's monthly environmental monitoring report.	**Not achieved** (2010: Not achieved). The majority of water takes for significant consents have been monitored. Flow measurements were either carried out on site or monitoring was completed using the council's telemetry system. Results for the year and the previous two years are in the graph below. The region experienced a significant drought in 2009-2010 and only 92% of the consents had a flow measurement conducted as resources were prioritised to allow other high priority drought monitoring. Results show an improvement for 2010-2011, as would be expected from the different weather conditions. The significant non-compliance was reported in the April Environmental Monitoring Report at the May Environmental Monitoring Committee meeting; some of the consents were not reported.
• 100% of all significant non-compliances are followed up and enforcement action taken where necessary.	**Achieved** (2010: Achieved). One significant non-compliance required follow-up and enforcement action, which was completed.

Compliance with significant water abstraction consents



LEVELS OF SERVICE

environmental monitoring

Activity 7.2 Compliance Monitoring continued

Significant positive and negative effects on wellbeing

The Compliance Monitoring activity may have the following impacts on wellbeing:

Wellbeing	Positive effects	Negative effects
Social	Ensuring compliance with consent conditions and regional rules helps to protect the environment which has positive effects on health, safety and social wellbeing.	
Economic	i. Helps protect the environment on which tourism, aquaculture and agriculture relies; ii. Helps ensure there are no adverse effects on the environment which will have impacts on people's health; and iii. Ensures that water is allocated, taken and used in an efficient manner which is of significant value for the Northland economy.	Compliance monitoring may be perceived to have a possible negative economic effect on consent holders and those who infringe.
Environmental	Helps to reduce the impact of people's activities on the environment by ensuring they meet the necessary resource consent conditions and/or regional rules.	
Cultural	Control of discharges and the sustainable management of water resources are important to all communities, including when providing for the cultural values of tāngata whenua.	

Activity 7.3 Environmental Incidents Response

Objective: Minimise adverse effects on the environment by responding to environmental incidents and non-compliance with the Resource Management Act.

2010-2012 Performance Measures and Targets

7.3.1 Provide a 24-hour, seven day environmental incident reporting system

Performance Measures and Targets	Actual Service Performance to 30 June 2011
a. **Respond to calls received on the environmental hotline.** • 100% of significant incidents responded to by Northland Regional Council and assessed annually for compliance with regional rules or consent.	**100% achieved** (2010: 100%, 979 incidents). 992 incidents responded to in the period and assessed for compliance; 21 incidents were categorised as significant.
b. **Take appropriate enforcement action in cases of significant non-compliance with statutory requirements.** • 100% of non-complying incidents resulting in significant adverse environmental effects have formal enforcement action taken in relation to the incident (when offender is known).	**100% achieved** (2010: 89%). 111 significantly non-complying incidents resulting in significant adverse environmental effects were recorded and had enforcement action taken through 71 abatement notices and 40 infringement notices.
c. **Communicate incidents that negatively impact on public health as appropriate.** • 100% of incidents responded to by Northland Regional Council resulting in public health risks, are notified within 24 hours to Northland District Health Board.	**100% achieved** (2010: 100%). Seven incidents required notification to Northland District Health Board.

Significant positive and negative effects on wellbeing

The Environmental Incidents Response activity may have the following impacts on wellbeing:

Wellbeing	Positive effects	Negative effects
Social	Ensuring compliance with consent conditions and regional rules helps to protect the environment which has positive effects on health, safety and social wellbeing.	
Economic	Helps protect the environment on which tourism, aquaculture and agriculture relies and helps ensure there are no adverse effects on the environment which will have impacts on people's health.	Environmental incident response and enforcement may be perceived to have a possible negative economic effect on consent holders and those who infringe.
Environmental	Helps to reduce the impact of people's activities on the environment by ensuring they meet the necessary resource consent conditions and/or regional rules.	
Cultural	Control of discharges and the sustainable management of water resources are important for providing for tāngata whenua cultural values.	

LEVELS OF SERVICE

environmental monitoring

Activity 7.4 Hazardous Substances and Contaminated Sites

Objective: Reduce the quantities of hazardous substances entering Northland's environment and minimise any adverse effects.

2010-2012 Performance Measures and Targets

7.4.1 Facilitate the safe handling and lawful storage of hazardous substances and management of waste hazardous substances.

Performance Measures and Targets	Actual Service Performance to 30 June 2011
a. **Operate facilities throughout Northland for the short-term storage of waste hazardous substances awaiting transport.** • Facilities open for 100% of working hours.	**100% achieved** (2010:100%).
b. **Provide a transport and disposal service for appropriate hazardous substances.** • 100% of hazardous substances are collected, transported and disposed of within 18 months of collection.	**100% achieved** (2010:100%, more than 4 tonnes). A total of 5.38 tonnes of waste were collected and sent to Auckland or exported for safe disposal.
c. **Provide a hazardous substances monitoring service to the Department of Labour, as required.** • At least 80 hours a month spent undertaking workplace inspections.	**Not achieved** (2010: achieved, average 100 hours per month). Department of Labour is satisfied with progress. On average 80 hours per month were completed.
d. **Provide an on-call 24 hour, seven day a week service for responding to incidents involving hazardous substances.** • 100% response rate to all calls involving hazardous substances. Baseline 2007-2008 Response Rate percentage – 100	**100% achieved** (2010: 100% achieved) 21 hazardous substance incidents were reported and follow-up over the year.
e. **Maintain a database of potentially contaminated sites, related site assessments and remediation.** • Relevant data provided to the relevant district councils for inclusion in the LIM and PIM systems by 31 December each year.	**Achieved** (2010: Achieved). All three district councils have their data. The database is available on the Northland Regional Council website *www.nrc.govt.nz/hail*

Activity 7.4 Hazardous Substances and Contaminated Sites continued

Significant positive and negative effects on wellbeing

The Hazardous Substances and Contaminated Sites activity may have the following impacts on wellbeing:

Wellbeing	Positive effects	Negative effects
Social	The removal of hazardous substances from the environment ensures wellbeing of the community.	
Economic	The Potentially Contaminated Sites database flags which sites are either potentially contaminated or are confirmed sites. This warns prospective purchasers of the economic consequences of purchasing a particular parcel of land.	Identifying the true cost of waste disposal has a negative financial impact on some of the community in terms of waste disposal charges. However, this is outweighed by the positive impact on the wellbeing of the wider regional community from the appropriate management of waste.
Environmental	The recovery of hazardous substances that may otherwise find their way into Northland's eco-system is of significant benefit to the Northland environment.	
Cultural	Both activities contribute towards cultural wellbeing of Northland's communities.