



Annual Report 2001

for all dimensions of our performance



Manaaki Whenua
Landcare Research



Manaaki Whenua
Landcare Research

care for the land
care for the people
go forward

manaaki whenua
manaaki tangata
haere whakamua

Our vision

Science making a difference for a truly clean, green New Zealand

Sustainable Manaaki Whenua

We will continually strive:

- to create wealth (for New Zealand, our Government owners and Manaaki Whenua);
- to make our customers successful;
- to care for people (our staff and the communities we work in and with);
- to care for the environment (in our activities and through our influence);
- to demonstrate leadership (by ourselves and in partnership with others) in all we do.

About us

Manaaki Whenua is New Zealand's foremost environmental research organisation specialising in sustainable management of resources for production, conservation, business and community. Our research, consultancy and development of technology are focussed on New Zealand's most important environmental issues: biodiversity; biosecurity; pest management; reducing greenhouse gas emission to meet New Zealand's obligations to the Kyoto Protocol; impacts of rural land use; urban environmental management; and sustainable business.

Manaaki Whenua is one of nine independent Crown Research Institutes (CRIs) established in 1992 from a re-organisation of Government-funded research. We are a government-owned, tax-paying company with about 400 staff at nine locations throughout New Zealand. Manaaki Whenua has an ISO 14001 certified environmental management system. We are a Natural Step pathfinder company and a founding member of the New Zealand Business Council for Sustainable Development.



Highlights

This Annual Report on our sustainable development is our first full triple bottom line report, covering all dimensions of our financial performance, as well as our environmental and social performance. Sustainable management of resources is our business so we have a responsibility to improve our own performance as well as that of others.

Innovation

- We initiated EBEX21™ (Emissions/Biodiversity EXchange 21) to help organisations offset their greenhouse gas emissions by restoring native forest biodiversity. *(page 24)*
- Sirtrack, our subsidiary, grew global sales of specialised wildlife tracking equipment to more than \$2.2 million. *(page 29)*
- Shareholding ministers supported our plan to invest nearly \$12 million in basic and applied research, and human capital development from 2001 to 2004. *(page 8)*
- Environmental domains were adopted as part of a national framework for monitoring environmental performance and implementing New Zealand's biodiversity strategy. *(page 16)*

Financial

- We achieved record revenue of \$42.75 million (7.5% growth), a record operating surplus of \$3.55 million, and paid a maiden dividend of \$3.5 million. The dividend will contribute to the Government's Venture Investment Fund. *(page 64)*

Sustainable development

- We reduced domestic air travel by 10% and electricity consumption by 4.6% compared to 1999/2000. *(page 40–41)*
- We increased our participation in international aid projects focused on sustainable development and poverty alleviation (in China, SE Asia and the Pacific). *(page 33)*

Excellence

- The Royal Society of New Zealand awarded silver medals to Charles Eason for research on pesticide toxicology and to Phil Cowan for research on possum ecology and management.
- Manaaki Whenua's first report on our sustainable development was awarded a first prize by the Institute of Chartered Accountants of New Zealand in their 2001 Annual Report Awards for the category 'Other Entities Environment Report'.

Guiding philosophy

We strive to ensure that everything done by Manaaki Whenua– Landcare Research is consistent with our guiding philosophy which we will continue to refine in the light of experience and new knowledge.

- We will care for the land and its ability to sustain future generations. Land is a source of healthy produce, clean water, recreation, and of spiritual strength. Land provides for the abundant diversity of life, birth, death, decay and regeneration. We are pledged to enhance this, the environmental inheritance of our country.
- We will honour the principles and spirit of the Treaty of Waitangi. We believe that the spirit of the Treaty provides a model for our dealings with people from all cultures and societies.
- We are committed to acting in an ethical manner in all aspects of our business. We have developed a code of ethics to guide directors, executives and staff in their decisions and actions.
- The broad focus of our work is to use science to understand and encourage sustainable use of the resources of Aotearoa - New Zealand. Science must combine the ecological, social and economic components of land use if management systems are to remain viable in the long term.
- We aim to use both strategic and applied research to support the development of sound policies and management systems. We will also undertake basic research to provide high quality information on the current state of our resources and on environmental processes.
- We will encourage community participation in setting our research directions and strategies. We will aim for transparency as to the distribution of the costs and benefits of any policy recommendations, and we will communicate our results to all those involved.
- Our recommendations will be based on consistently trying to ensure that adverse environmental effects are avoided, remedied or mitigated. Responsibility for implementing appropriate action should lie with the persons or businesses affecting the environment.
- We have important roles as information providers and knowledge brokers. Expression of our work will reflect the professional opinion of individuals and teams, and be the subject of on-going peer review. As an organisation, we will only adopt an advocacy role in unusual circumstances: when great uncertainty, risk or irreversibility strongly necessitates precautionary action, or when important ethics call for public advocacy.
- We will publicise our achievements to make our staff, our stakeholders and our clients aware that we are making a difference. We will strive together to become internationally recognised for the quality and effectiveness of our research.

The Guiding Philosophy was developed by Manaaki Whenua's Board of Directors in 1993. It was reviewed (but not changed) during company-wide 'strategic thinking' workshops in 1998/99.

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Landcare Research New Zealand Limited
(Manaaki Whenua)
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Chairman's report

This report represents a significant milestone for us. For the first time we have combined our traditional Annual Report with our Sustainability Report into a single Triple Bottom Line Report. This reviews all areas of our performance including the financial, environmental, social and economic impacts of our activities.

Our vision is 'science making a difference for a truly clean, green New Zealand' and our business is to work profitably in partnership with our clients helping to improve the environment in ecologically, economically and socially sustainable ways. While our annual accounts record our profitability in a strictly financial sense we also have a duty to measure and publicise our own social and environmental performance—hence this combined report.

Sustainable development is not a new concept. Much of the Māori view of the natural world is captured in the term kaitiakitanga or guardianship. It is a notion of mankind being in this world simply to look after what Papatūānuku (mother nature) has provided for us to care for in our life times. We do not own any of it, although we might individually and collectively assume rights of possession over parts of it. Each generation must ensure that these treasures are well cared for and passed on intact and healthy. This is particularly so in New Zealand where so much of our economic well-being is tied to our natural assets which underpin the values of our tourism industry, the imagery associated with much of our international marketing and our national identity and way of life.

Our performance, as measured by scientific output, turnover, profit and return to shareholders, environmental impact and social benefit has again been excellent. These results are a reflection of the competence and commitment of the Manaaki Whenua team. Our success comes from their professionalism, expertise, commitment and innovation. We are delighted that they participate in our success through our profit-sharing arrangement and through the acknowledgement of others that their science has helped make a difference.

We welcome the Government's continued emphasis on the role of science in growing our economy and on the need to increase the commercialisation of innovations

On behalf of the Board, it is my pleasure to be able to report another excellent result for the financial year ended 30 June 2001.

made in the crown research institutes and universities. The Government's Venture Investment Fund is an exciting initiative and we are pleased that our special dividend of \$3.5m will contribute to it. Because of the nature of our business however, returns from many of our investments are frequently only measurable in environmental and intellectual gains which are of little attraction to third party venture capital investors despite their economic benefits for 'New Zealand Inc.' For example if we are successful in our ambition to significantly reduce possum fertility the benefits to New Zealand will be enormous although little, if any, of this benefit would appear in our accounts or those of any venture capital partner.

This raises some serious concerns for us in our ability to compete for the government's new venture capital fund. We are therefore delighted shareholding ministers approved our investment over the years 2000–2003 of nearly \$12 million of our existing retained earnings and future operating surpluses in additional science. This investment will be aimed at producing substantial returns to New Zealand through the strong partnerships we are developing with agencies, businesses and communities who deliver conservation and environmental management on the ground. In this regard I particularly wish to acknowledge the support we have from the Department of Conservation, Animal Health Board, Ministry for the Environment, Ministry for Agriculture & Forestry and various regional authorities.

This year we farewell John Orr from the Board and thank him for his contribution over the past six years. New appointments to the Board commencing in the new financial year will be Denise Church of Wellington and Anne Urlwin of Christchurch.



Ian Donald
Chairman of Directors



Chief Executive's review

Our business continues to be strongly focused on research that will:

- help to halt the decline of New Zealand's biodiversity
- address our worst environmental-pest problems
- maintain the quality of our soils and land resources
- improve the sustainability of our cities and of businesses
- mitigate greenhouse gas emissions.

Through the fruits of our research and development, and by how we do things ourselves, we seek to be a leader in sustainable development thinking and practice.

In-depth coverage of our research is provided in our latest biennial Research Report, published in July this year, and examples are presented in this report.

Celebrating our successes in 2001

Once again, it is very satisfying to report an excellent performance for the year. This performance is recognised in our strong financial position at year end, in the results from and the use of our research, in our alliances with research users and other partners, and in the awards to staff and to the company.

The company has paid a special dividend of \$3.5 million which will be used in the Government's Venture Investment Fund, and will still be able to fund the \$11.8 million reinvestment programme approved by shareholding ministers for 2000/01 and the next two years.

Benchmarking our performance

In this report we benchmark our performance this year, and in the last nine years, against crown research institutes (CRIs) and other science organisations. Over many dimensions of our performance, we are consistently one of the best performing CRIs (based on benchmarking data from Crown Company Monitoring and Advisory Unit).

We have achieved the highest percentage growth in shareholder funds, excluding acquisitions, from 1992 to 2000. Shareholder funds have more than trebled from the initial \$8.0 million to \$25.2 million in the nine-year period. After paying a special



Robert Lamberts

dividend of \$3.5 million (45 cents per share), our net tangible asset backing is \$2.71 per share. In addition, we have increased our overall turnover by 50% over the period 1992–2000, and achieved the highest percentage growth (1995–2000) of all the CRIs in revenue from clients other than the Foundation for Research, Science and Technology. Our financial performance compares very favourably with that of New Zealand companies.

Our published work is highly regarded and influential. We consistently have the highest refereed publication rate per science staff among CRIs, and the citation rate of our publications is similar to that for other CRIs (page 53). Our publication and citation rates are considerably better than those reported for CSIRO in Australia.

I am proud of these achievements by our company. Everyone who is part of Manaaki Whenua—shareholders, board, management, staff and all who work with us—should feel pleased with the great year we have had this year and with our consistently strong performance for the whole of the last nine years. I thank you all.

Strategic leadership—investing in the future of New Zealand

Our aim is to be at the forefront of future thinking about the New Zealand science system and innovation in the environmental sector. In September 2000, our shareholding Ministers approved the investment of \$11.8 million of retained earnings and operating surpluses during 2001 to 2003 in a portfolio of investments that is radically different from that of any other CRI.

Possum fertility control investment

In 1999, we began investing in proof of performance tests of a fertility control for possums. This year we showed that proteins can be delivered orally to possums in genetically modified (GM) plant material and in killed GM bacteria. A successful fertility control product offers New Zealand the chance to reduce widespread use of poisons like 1080. The returns from a new possum control will not accrue to Manaaki Whenua's balance sheet but to New Zealand through reduced possum control costs for the Department of Conservation, Animal Health Board, regional councils and property owners.

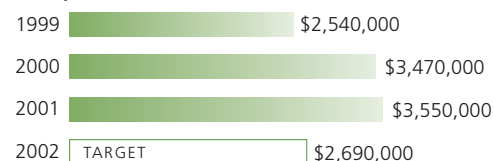
HEADLINE INDICATORS

Our performance in relation to the Operating Principles of the Crown Research Institute (CRI) Act (1992) and our commitment to leadership in our own environmental performance, are summarised in the following 'headline' indicators.

FINANCIAL VIABILITY: OPERATING SURPLUS

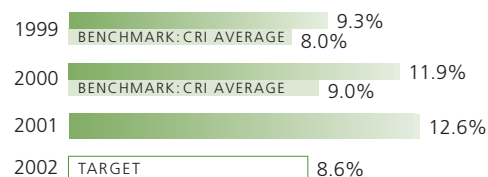
For consolidated company—before interest, investments and tax.

For the year ended 30 June



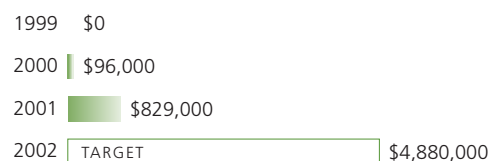
FINANCIAL VIABILITY: RETURN ON EQUITY

Net profit after tax/average shareholders' funds.

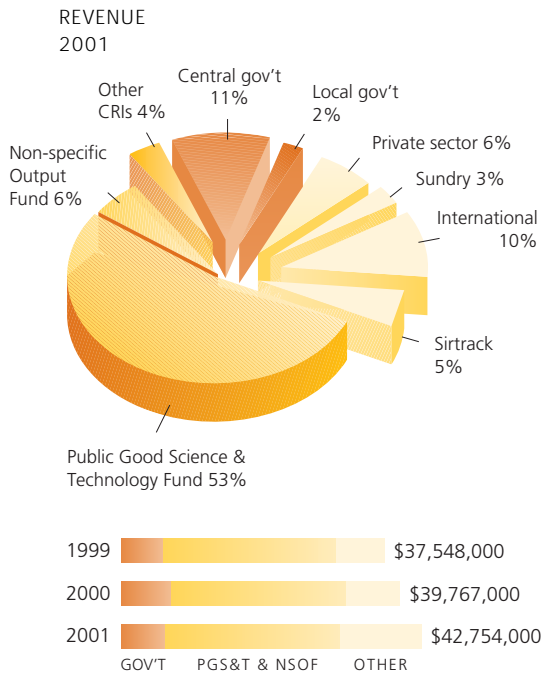


FINANCIAL VIABILITY: INVESTMENTS

Investment of retained earnings and operating surpluses in basic research, outcome science and human capital development.

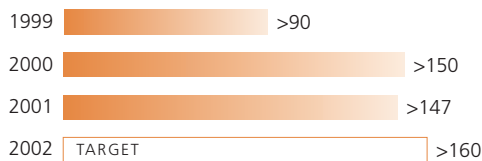


BENEFIT TO NEW ZEALAND & FACILITATION OF THE APPLICATION OF RESEARCH: REVENUE



These and all other figures exclude GST.

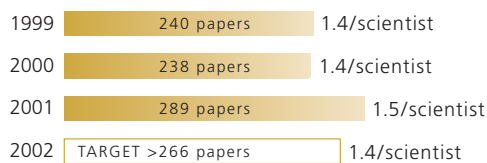
BENEFIT TO NEW ZEALAND & FACILITATION OF THE APPLICATION OF RESEARCH: TRAINING, SEMINARS & WORKSHOPS FOR USERS



Excludes conferences and publications.

EXCELLENCE: SCIENTIFIC PAPERS

Number of papers in international, externally refereed scientific journals, series or books.



Investments in 2001

During this year shareholding ministers approved specific investments that should yield substantial returns to New Zealand.

These investments are directed towards:

- evaluating the amount of carbon loss (and CO₂ emissions) resulting from soil erosion (currently estimated at 3–11 million tonnes of carbon per year—potentially larger than our emissions from fossil fuel use and at least equal to the carbon sequestered by all our planted forests)
- a totally new way of thinking about possum surveillance to ensure eradication of bovine Tb
- EBEX21™ —another innovative project, which helps reduce greenhouse gas emissions while enhancing biodiversity, that will complement plantation-based carbon sinks. We are working with businesses to assess and reduce their carbon emissions and offset emissions by restoring native forest
- a new rat control product with a completely different mode of action from existing products
- ten two-year postdoctoral fellowships.

We have invested about \$0.8 million on these projects and on possum biocontrol during the year. This was significantly less than our target of \$3 million. Approval for our business plan and for specific investment projects and some key recruitments for these new projects all took longer than anticipated, limiting the expenditure on projects during this year. Unspent funds have been carried forward into investment projects for 2001/02.

Investment from 2002

Our business plan for 2001/02 sets out the projects that will complete the \$11.8 million reinvestment programme. Another 10 postdoctoral fellowships will be offered. Five sabbatical fellowships will be provided for our staff to work or visit the top teams in the world in their field, and a further five will be provided in 2002/03. And we will continue investments in science. These will be directed towards:

- a decision tool for border control and managing biosecurity risks from insects
- continuing proof-of-performance and non-target tests for possum fertility control
- substantial investment to bring our existing possum fertility control antigens and delivery systems to an 'early field

trial' stage (subject to satisfactory proof-of-performance and non-target testing results, and to gaining Environmental Risk Management Authority (ERMA) and other regulatory approvals)

- predicting how, and why, forest ecosystems respond to multiple pests
- DNA-based tools for identifying pests
- developing 'smart clays' that can clean up environmental contaminants
- using our biological collections to search for compounds that may have commercial uses
- information tools to enhance our systematics databases and collections
- refining environmental domains (page 16) as a management tool for a wide range of biodiversity and resource management applications.

In each of 2001/02 and 2002/03, we will invest about \$5 million in these projects. It will be a stimulating challenge to manage so many investments simultaneously. The opportunity to invest so strongly in this work is very exciting, and provides a huge stimulus to staff. Our staff appreciate the support of shareholders in enabling us to invest in science that promises to make a real difference to New Zealand.

Our journey to triple-bottom-line (TBL) reporting

We have taken a very strong leadership position in TBL (sustainable development) reporting. This year, we have combined our statutory Annual Report and voluntary Report on Sustainable Development in a single document covering all aspects of our performance. We believe we need to lead by example.

Our reporting is strongly grounded in the CRI Act

The Crown Research Institute (CRI) Act 1992, which established Manaaki Whenua and nine other CRIs, sets out principles of operation for CRIs covering benefit to New Zealand, pursuing excellence in all activities, complying with ethical standards, being a good employer, exhibiting a sense of social responsibility by having regard to the interests of the community, and maintaining financial viability.

GOOD EMPLOYER: EQUAL EMPLOYMENT OPPORTUNITIES

Proportion of women in our staff with post-graduate science qualifications.



Number of staff recruited with post-graduate science qualifications.



GOOD EMPLOYER: STAFF SATISFACTION

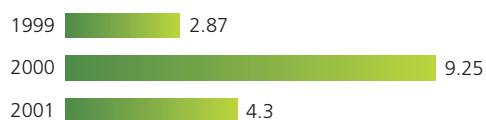
Percent of staff positive about working for Manaaki Whenua.



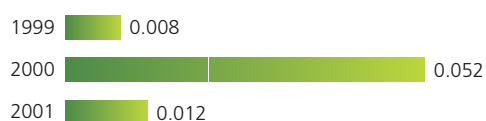
(Benchmark is the average score across 17 questions in an independent survey of staff in the science sector, mainly CRIs.)

GOOD EMPLOYER: SAFETY

Number of lost-time injuries per million hours worked.



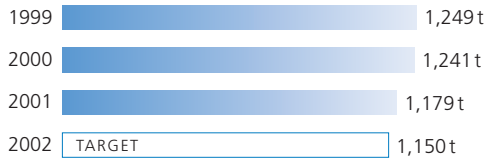
Number of days lost per thousand hours worked.



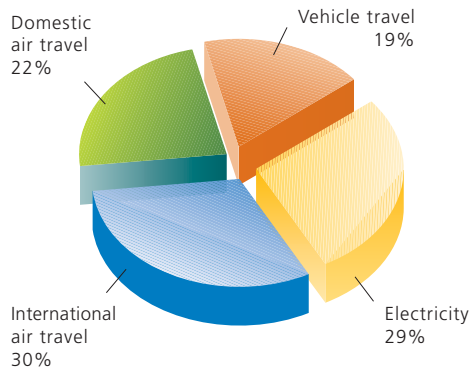


ENVIRONMENTAL PERFORMANCE: CO₂ EMISSIONS

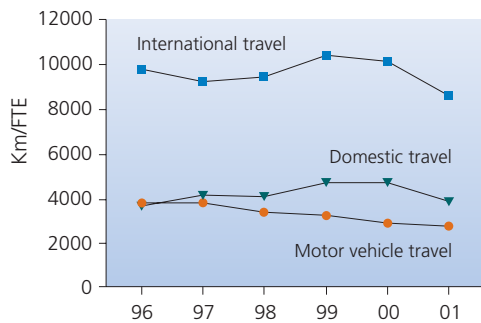
Imputed CO₂ (tonnes) emitted from our activities.



Source of CO₂ emissions 2001.

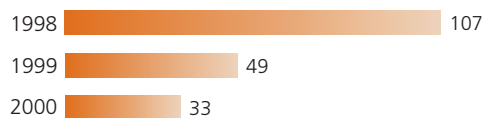


ENVIRONMENTAL PERFORMANCE: TRAVEL PER PERSON



ENVIRONMENTAL PERFORMANCE: ANIMALS IN RESEARCH

Native birds killed through bycatch in field research trapping animal pests (data for calendar year).



In 1993, we developed a basket of indicators covering all of the operating principles of the CRI Act. These indicators, and the targets for them, are detailed in our Statement of Corporate Intent (SCI), which is agreed by our shareholding ministers at the start of each year. The 30 or more SCI indicators cover most aspects of our performance. Reporting against these indicators, and against the operating principles of the CRI Act, in our previous annual reports is an excellent basis for TBL reporting.

Our first report on sustainable development

In June 2000, we published 'Making a difference for a truly clean, green New Zealand' our report on sustainable development to June 1999. Initially, this was to be a report on our own environmental performance, bringing together work we had done with Professor Jan Bebbington of Aberdeen University. This work had focused on the 'eco-balance' of our environmental resource inputs (energy and materials) and outputs (waste, including greenhouse gases). The report was extended to include economic and social aspects of our performance.

The report itself has attracted widespread attention. It was ranked 14th overall in the United Nations Environment Programme Global Reporters 2000 Survey of 202 similar reports from companies around the world. At home, it was winner of the 2001 environmental reporting award of the Institute of Chartered Accountants of New Zealand.

Performance counts

One of the lessons we learnt through the process of TBL reporting is simple. Whatever the quality of the reporting, it is the performance that counts. For us, the report reflects our ability to achieve positive results for sustainable development in New Zealand, and to secure the sustainability of Manaaki Whenua. It is therefore a critical challenge to have goals, performance targets and indicators of performance that relate to the outcomes of our work. This is not a simple challenge.

The old adage is true: what gets measured, gets managed. At Lincoln, our main site, electricity usage has been monitored and staff informed monthly by email. The programme has led to savings of \$303,000 over five years. This report provides other examples.

Reporting our influence is a key element

Through the TBL approach, we have realised that every organisation can positively influence the performance of its stakeholders. For example, a retail chain with one million customers per week has an enormous opportunity to contribute to sustainable development by influencing those customers, its suppliers, and its many shareholders. The first section of this report tells how, through our work with others, we try to make New Zealand a better place.

Working together on TBL

We are now privileged to be working with some of New Zealand's leading organisations who have committed to TBL performance and reporting. We developed and lead a TBL reporting workshop programme for the Redesigning Resources group of organisations (page 32). The New Zealand Business Council for Sustainable Development (NZBCSD), of which we are a founding member, has also established a Sustainable Development Reporting Project. I am a personal champion of that project. The Ministry for the Environment has commissioned us to introduce TBL reporting concepts to the public sector, and we are working with a number of individual organisations committed to this journey.

This report—a major advance

A truly committed team (page 76), inspirationally led by Ian Whitehouse, has invested enormous time and energy in developing this report. It is a major advance from our first report on our sustainable development. I thank them all.

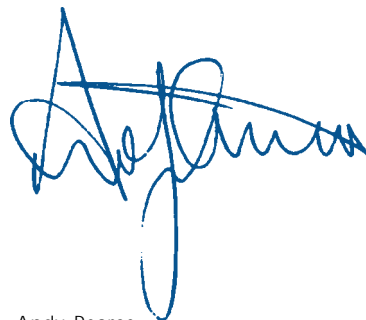
Going forward

In this overview, I have accentuated our successes. The report reveals, though, that there are areas where we need to do better, e.g. our travel footprint and the impact of our field activities on the environment and on non-target animals. There will always be room for improvement. In each section of the following report we signal our plans for the future, including targets for improvement.

We need to increase stakeholder involvement in our reporting to reflect the partnership way in which we try to work. We have begun to work with our key stakeholders to ensure that our 2002 report reflects the roles and responsibilities reasonably expected of us, and adequately measures our performance against these. This 2001 Report reflects some stakeholder engagement. Our key stakeholders are our shareholding ministers, Foundation for Research, Science and Technology, Department of Conservation, Ministry for the Environment, Animal Health Board and other central and local government agencies, the PSA union, staff and major suppliers. We invited the Public Service Association (PSA) to be involved in this report, and they have commented on the sections of interest to their members. In 2002, we will focus on engaging some of our largest suppliers, e.g. our fuel providers.

Next year we are starting a series of initiatives with Auckland University. This includes relocating staff to the University campus into new, purpose-designed facilities. We see this as an opportunity to influence the practice of building design and construction to achieve exemplary standards of environmental performance, and resource and energy consumption. We will seek leading designers, architects and members of the construction industry to work in partnership with us to create a new building that treads lightly on the earth, is healthy, sustainable and a great place to work.

Kia ora koutou katoa



Andy Pearce

Chief Executive

Planning & reporting framework

The Manaaki Whenua Board negotiates, in May and June each year, a Statement of Corporate Intent (SCI) and a Strategic Business Plan for the next financial year with the shareholding ministers. The SCI, pursuant to section 16 of the CRI Act (1992) sets out the company's core business and performance measures and targets. The performance measures include both financial and non-financial targets that reflect the operating principles of the CRI Act. The SCI is a public document tabled in Parliament.

The Strategic Business Plan details the key business initiatives planned and company-level financials. The Business Plan is not a public document.

The SCI and Business Plan agreed with the shareholding ministers set the parameters for the company's operational plans. Each business unit and corporate function prepares annual plans that include expected financial, capital expenditure, health and safety, travel, staff and science performance targets. The operational plans form the basis for annual performance objectives for management and, in turn, teams and individuals. These objectives are reviewed as part of the company's performance management system. Management reports monthly to the Board against operational plan performance measures.

Quarterly reports are provided to the shareholding ministers on performance against the Business Plan financial targets and other agreed objectives. Half-yearly and annual reports are provided on performance against SCI targets.

This Report covers our performance against all SCI measures and targets (summary page 59).

This Report will be tabled in Parliament. Our performance is reviewed every year by the Parliamentary Select Committee for Science and Education.

