



**Petition 2005/179 of Sarah Allen  
and 3,100 others, and two other  
petitions of a similar nature**

Report of the Local Government and  
Environment Committee

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Forty-ninth Parliament  
(Chris Auchinvole, Chairperson)  
November 2009

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*Presented to the House of Representatives*



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## Petition 2005/179 of Sarah Allen and 3,100 others, and two other petitions of a similar nature

### Recommendations

The Local Government and Environment Committee makes the following recommendations to the Government:

- 1 That it consider whether a review of the New Zealand Standard for Radiofrequency Fields (NZS 2772:Part 1:1999) is necessary to ensure that it is still in line with world's best practice
- 2 That it review the membership of the Government's Interagency Committee on the Health Effects of Non-Ionising Fields to ensure better community representation and expertise in risk assessment
- 3 That it consider how the regulatory environment might be improved so that the development of infrastructure can proceed in a way that safeguards community interests
- 4 That it explore with the telecommunications industry how better incentives can be provided to encourage shared use of telecommunication sites and towers, such as co-siting and co-location arrangements, while safeguarding community interests.

### Introduction

We have considered Petition 2005/179 of Sarah Allen and 3,100 others requesting that the House take urgent action to

- prevent construction by Telecom New Zealand of a cellphone tower at the Atawhai Exchange, Atawhai Crescent, Nelson, immediately adjacent to the Atawhai Playcentre and close to Atawhai Brightsparks pre-school
- prohibit cellphone towers and similar transmission devices from being erected within 1,000 metres of educational facilities
- legislate to require community consultation, and notified consent, prior to the erection of cellphone towers and similar transmission devices in residential areas.

Petition 2005/179 was filed in response to a proposal by Telecom to build a 22-metre-high cellphone tower with six antennae on a site it owns next door to the playcentre at Atawhai, which is also close to the Brightsparks preschool. The site is designated in the Nelson City Plan for the purpose of a telephone exchange.

In a high-profile campaign to prevent the construction of the tower at Atawhai, the petitioners made contact with others who are concerned about similar issues in other places, notably Titahi Bay near Wellington, and Waiheke Island. We also received evidence from such groups and individuals in support of the petition.

We subsequently received two similar petitions. Petition 2008/8 of Andrew Crawford requests that the House note that 704 people have signed a petition urging Telecom and Vodafone not to erect cellphone towers, masts, or aerials within 500 metres of houses, schools, or hospitals, and that the House act to support this request.

Petition 2008/32 of Sharon Stewart, David Collings, and 1,451 others makes the following requests of the House:

- to take urgent steps to prevent construction of cellphone sites and cabinets and electromagnetic radiation (EMR) equipment immediately adjacent to residential homes, preschools, and retirement villages
- to prohibit cellphone towers and similar transmission devices from being erected near to educational facilities; legislate to require community consultation and notified consent prior to the erection of cellphone towers and similar transmission devices in residential areas
- amend the national environmental standard (NES) for telecommunications so that telecommunication companies are required to consult with local communities on the location of cellphone towers, cellphone sites, cabinets and other EMR equipment in the area, and to seek to come up with sites that have the least impact on nearby residential dwellings and schools.

The three petitions raise issues about the potential effect of cellphone towers and similar installations on human health. The issues fall into three broad areas of concern: the specific case regarding the location of a proposed cellphone tower next door to the Atawhai playcentre, safety issues regarding electromagnetic radiation emissions and the optimum distance for transmission, and the way that telecommunication companies consult communities before erecting cellphone towers.

We set out below the issues we considered in relation to all three areas of concern and to the adequacy of the current regulatory environment.

### **The Atawhai site**

The petitioners (2005/179) represent parents, staff, and management of the Atawhai playcentre, Brightsparks preschool, and members of the local community who oppose the construction of the proposed cellphone tower. They are concerned about the possibility of adverse health effects of EMR from the tower and the effect of the tower on the viability of the Atawhai playcentre and the Brightsparks preschool. The Ministry for the Environment informed us that the Nelson City Council had determined that the proposal complied with the designation of the site and that it met the New Zealand standard for exposure to radiofrequency energy.

The petitioners told us that the playcentre learned of the proposal to erect the cellphone tower through indirect channels. In response to an approach to the Nelson City Council, they were told that the council had approved the tower during the Christmas holidays without consulting the community. The petitioners claim that the approach taken by Telecom to community consultation was inadequate.

We note that there was no formal requirement for consultation in the case of the Atawhai proposal because Telecom owns the site in question and the proposed activity complies with the designation of the site and the New Zealand standard. Telecom told us that it had nevertheless intended to discuss its plans with the community, but that local people had learned of the proposal before the planned engagement. Telecom then met the management of the playcentre and preschool, and later held a public meeting and an open day. The outcome of these meetings was a commitment by Telecom not to pursue the Atawhai site if a suitable alternative could be found in consultation with the council and the community. We understand that a suitable alternative site has recently been found.

Although it would seem that the particular issue of the site of the cellphone tower at Atawhai is being resolved, we believe that the Atawhai case exemplifies the problematic issues that can arise when telecommunication companies attempt activities that affect local communities, the challenges of appropriate engagement with affected communities, and general concerns about safety. We now consider these concerns in more detail.

### Safety concerns

Broadcasting and telecommunications use high-frequency electromagnetic fields, referred to as radiofrequency, occurring in the range between 9 kHz and 300 GHz in the electromagnetic spectrum. In the last 15 years the cellphone industry and the development of related technologies have grown rapidly. Public concern has increased about the possible hazards of exposure to electromagnetic radiation from the use of cellphones and from proximity to the transmission sites.

The petitioners asked us to consider the possibility of adverse effects on the health of people, especially children, exposed to EMR from cellphone towers and masts, including serious acute, chronic, and mental health effects. The petitioners note that there is no research available on the long-term health effects on children in particular. They also note that the duration of the latent period between exposure to electromagnetic radiation and the emergence of effects (10 to 20 years) means that data on cancer, tumours, and other adverse effects are only just emerging. The petitioners also question whether the limits set by the New Zealand standard are safe for people who have become sensitised to such radiation. For such people, they say, even low exposure to EMR can trigger serious health effects.<sup>1</sup>

The Ministry for the Environment does not support these claims. It contends that there are no established adverse health effects from exposure to radiofrequency fields as long as they comply with the New Zealand standard, which sets limits for public exposure at one-fiftieth of the level at which health effects may start to occur. The ministry relies on existing national guidelines,<sup>2</sup> which similarly conclude that compliance with the New Zealand standard is sufficient to prevent adverse effects. The ministry told us that no new research or evidence suggests that a change to the standard is needed.

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<sup>1</sup> Citing “Interagency Advisory Committee on the Health Effects of Electromagnetic Fields: report to the Ministers, November 2004”, p. 20. (We note that the report acknowledges that some people are unusually sensitive to electromagnetic fields but states “it is not clear what causes the symptoms, as provocation tests have not shown any clear link between exposure to electromagnetic fields and occurrence of the symptoms”.)

<sup>2</sup> *National Guidelines for Managing the Effects of Radiofrequency Transmitters*, Ministry for the Environment and Ministry of Health, December 2000.

Telecom told us that it operates well within the New Zealand standard. Each cellphone site is subject to a full radiofrequency report, which is independently verified, and the National Radiation Laboratory regularly measures radiation from such sites to determine exposure levels. All of Telecom's cellphone sites operate within the New Zealand standard, which takes account of international best practice and research, and is monitored by the Interagency Committee on the Health Effects of Non-Ionising Fields. On average Telecom's cellphone sites operate at one percent of the radiation level permitted by the New Zealand standard.

### **Regulatory framework**

In New Zealand cellphone towers and telecommunications infrastructure are regulated through two primary pieces of legislation, the Telecommunications Act 2001 and the Resource Management Act 1991.

The Telecommunications Act enables telecommunications service providers (designated as "network operators") to be granted rights to place cellphone towers and other infrastructure on land. A network operator designated under the Act has the right to construct and maintain telecommunications lines on or under any road, subject to reasonable conditions for access.

We note that recently introduced regulations under the Telecommunications Act were developed to facilitate co-location of cellphone antennas. Co-location allows the sharing of facilities such as towers and masts to avoid duplication of facilities. Co-siting arrangements occur where an operator wishes to locate transmission equipment on a rooftop or similar property that is already used for such a purpose but not owned or controlled by the other telecommunication operator. Although these arrangements are not regulated, we understand that a co-siting code has been developed by telecommunications companies.

This issue was raised by several submitters, who told us that few co-location arrangements are occurring and this is a matter of concern. We are advised that the current phase two reforms of the Resource Management Act include a workstream that is considering infrastructure issues in general and that co-location of telecommunications infrastructure is likely to be considered as part of that workstream.

### **New Zealand standard**

In New Zealand, exposure to radiofrequency fields is managed through council plans under the Resource Management Act 1991, and through rules that must comply with Standards New Zealand's standard NZS 2772:Part 1:1999.

This standard specifies basic restrictions and reference levels for human exposure to radiofrequency fields in the frequency range 3 kHz to 300 GHz. Initially developed by the joint Australian/New Zealand Committee on Human Exposure to Electromagnetic Fields in 1998, the standard was published as a New Zealand standard only, when it failed to win the 80 percent of votes by committee members necessary for adoption as a joint standard (the standard was modified and won 80 percent of the New Zealand members' votes). The standard draws on guidelines developed by the International Commission on Non-Ionising Radiation Protection (ICNIRP) and published in 1998. These guidelines were generally recognised at that time as representing accepted world's best practice.



The standard includes a caveat acknowledging the suggestion of association (but not causation) between adverse health effects and exposure to radiofrequency fields at levels lower than the restrictions specified in the standard. The standard also recognises explicitly that “There is currently a level of concern about [radiofrequency] exposure, which is not fully alleviated by existing scientific data”.<sup>3</sup>

While the ministry contends that the standard sets limits well within international guidelines and many times lower than levels which would affect health, the petitioners maintain that the standard is out of date, is based on unreliable assumptions, excludes any research that does not meet the criteria set by the ICNIRP, does not include any research on the effects on children or pregnant women, and does not adopt a precautionary approach.

### **National environmental standard for telecommunications facilities**

A national environmental standard for telecommunications facilities was gazetted in 2008. It was developed in response to the Government’s decision in July 2005 to address issues facing the telecommunications industry. At that time, the specific issues included a rapid expansion of telecommunications infrastructure, new technology, more demand for capacity, increasing competition in the industry, and a lack of consistency and certainty in local regulations.<sup>4</sup> The key focus was the variability in local consenting requirements, which resulted in additional costs and delays. The scope of the proposed NES was limited to telecommunications equipment or structures on road reserves, and excluded new free-standing cellphone transmitters or masts, over-ground or underground wires, and permission for leasing road reserves or opening the road to install new telecommunications facilities.

A dominant theme that emerged in public consultation in 2007 was the potential health effects of exposure to radiofrequency fields.<sup>5</sup> While there was support for the intent of the NES, there was some concern about the effect on amenity values, allowing facilities as of right, the lack of local control, and the limited scope of the proposed NES. Many submitters expressed a fear that unbundling of the local loop might lead to a proliferation of telecommunications equipment and an increase in its cumulative impacts.

As gazetted, the NES addresses the variability or absence of rules in district plans, and sets out some nationally consistent provisions. It applies to activities that generate radiofrequency fields, and has regulatory effect. Under the NES any such activity is permitted provided it complies with NZS 2772:Part 1:1999. Mandatory compliance with this standard is a key feature of the NES, because there was previously no regulatory means of controlling radiofrequency field exposures consistently with the national guidelines and NZS 2772:Part 1:1999.

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<sup>3</sup> NZS 2772:Part1:1999, pp. 4–5.

<sup>4</sup> Office of the Minister for the Environment to Cabinet Economic Development Committee, pp. 1–2. <http://www.mfe.govt.nz/laws/standards/telecommunications-cabinet-paper.html>, last accessed 19 October 2009.

<sup>5</sup> Ministry for the Environment, *Proposed National Environmental Standard for Telecommunications Facilities, Report on Submissions*, October 2007, <http://www.mfe.govt.nz/publications/rma/nes-telecommunications-facilities-submissions-oct07>, last accessed 19 October 2009.

Under the NES, the installation of roadside cabinets containing telecommunications equipment alongside roads or on road reserves is a permitted activity subject to specified limitations on size and location. The installation of roadside masts and antennas on existing structures would also be permitted subject to specified limitations on height and size.

While the NES provides further guidance on some sources of radiofrequency fields, we note that it would not apply in the Atawhai case (other than mandatory compliance with NZS 2772:Part1:1999) because it does not apply to new cellphone towers constructed on Telecom-owned land.

### **Interagency Committee on the Health Effects of Non-Ionising Fields**

Research into the effects of radiofrequency fields (such as those from cellphones and cellphone sites) is monitored in New Zealand by an interagency committee reporting to the Director-General of Health. This committee also reports to the Minister of Health and the Minister for the Environment on specific topics. Its most recent report on the health effects of electromagnetic fields was published in November 2004.<sup>6</sup> The report endorsed the policies and standards based on the exposure guidelines published in 1998 by the ICNIRP.

This committee includes representatives of the ministries of Health, Economic Development, and the Environment, the occupational safety and health division of the Department of Labour, the public health service, local government, academics and scientists, consumers, the electrical industry, and the telecommunications industry.

In a written submission, the petitioners (2005/179) urged the committee to consider whether the composition of the interagency committee adequately represents community interests and includes expertise in risk assessment.

### **International research**

The petitioners assert that there is an absence of proof in international research about safe levels of EMR exposure. We note that the World Health Organisation provides easily accessible information on the health risks associated with cellphones and their base stations, electromagnetic fields and public health, and electromagnetic sensitivity. It continues to investigate and monitor possible health effects of electromagnetic fields.

We are aware that the effects of EMR exposure continue to be the subject of research. As recently as July 2009, the ICNIRP published a comprehensive review of research into possible health effects of radiofrequency fields in the range from 100 kHz to 300 GHz.<sup>7</sup> The review acknowledges the publication of important studies since the 1998 guidelines, and the need to determine their implications for health. It concluded that the studies it had surveyed did not prove a causal link between exposure to radiofrequency fields and any adverse health effect. This conclusion was qualified, however, by a statement that there were too many deficiencies in the studies to rule out an association. Such deficiencies

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<sup>6</sup> “Interagency Advisory Committee on the Health Effects of Electromagnetic Fields: report to the Ministers”, November 2004.

<sup>7</sup> ICNIRP, *Exposure to high-frequency electromagnetic fields, biological effects and health consequences (100 kHz–300 GHz)*, July 2009.

include the quality of assessment of radiofrequency exposure, the relatively short time lag periods in the studies conducted, and the lack of research into possible health effects other than brain, head, and neck tumours, and into the long-term effect on children of using cellphones. Although the ICNIRP considers that transmitter sites pose a low risk only, it stressed the need for better assessment of exposure from such sites, because it is a concern for many people.<sup>8</sup>

We note that a recent report prepared by the BioInitiative Working Group argues that effects can occur at non-thermal or low-intensity levels, thousands of times below the levels that several agencies say should keep the public safe.<sup>9</sup>

We further note a recent resolution by the European Union Parliament drawing attention to continuing concerns about safety and the uncertainty in the scientific community about what constitutes safe levels of exposure, particularly for young people whose brains are still developing. We are aware that the EU Parliament has called for a review of the scientific basis and adequacy of electromagnetic field limits, taking particular consideration of biological effects when assessing the potential health impact of electromagnetic radiation, and is advocating a precautionary approach.

### Summary

Concerns about the safety of exposure to electromagnetic radiation lie at the heart of all three petitions. In New Zealand, exposure to electromagnetic radiation is regulated through instruments in the Resource Management Act (resource consents and designations). The NES, brought into effect by regulation in 2008 makes compliance with NZS 2772:Part 1:1999 mandatory. This standard sets limits on the permissible level of exposure on the basis of what can be tolerated before affecting human health.

We note that, when it was developed in 1999, NZS 2772:Part 1:1999 was based on recognised international research. Since then the WHO has endeavoured to make available information on health risks, further research into certain health risks is being conducted, the ICNIRP has reviewed a growing body of research on the possible biological effects and health consequences of exposure to high-frequency electromagnetic fields, and the EU Parliament has advocated precaution, and a review of the scientific basis and adequacy of EMF limits in the light of new research and the uncertainties that continue to be expressed.

### Community consultation

The statutory framework for formal consultation is provided in the Resource Management Act. The Act sets requirements for consultation on and notification of resource consents for cellphone towers. Determining what activities should be notified ultimately rests with councils and their communities through the city or district planning process.

High-level guidance on the need to consult with affected communities is included in the joint national guidelines for managing the effects of radiofrequency transmitters, issued by

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<sup>8</sup> ICNIRP, *Exposure to high-frequency electromagnetic fields, biological effects and health consequences (100 kHz–300 GHz)*, July 2009, pp. 336–337.

<sup>9</sup> *Summary for the Public*, prepared for the BioInitiative Working Group, August 2007, p. 15.

the Ministry for the Environment and the Ministry of Health.<sup>10</sup> The guidelines advise the telecommunications industry to take account of four principles when working with the community: recognising the value of communicating with residents; recognising the need for particular skills in communicating with concerned people; addressing community concerns by minimising exposures to the lowest levels required to achieve coverage; and publicising successful community communication.

We heard evidence from Telecom on the general process they follow for building their cellphone network and consulting communities. We were informed that Telecom approaches community engagement case by case and that it works cooperatively to find the most appropriate outcome in each community.

We asked Telecom and Vodafone about their community consultation initiatives generally, and what work is being done in the industry on developing a code of practice for community engagement. Both companies told us that even where there is no requirement under the district plan to consult or inform residents about planned cellphone sites, they inform neighbours who live close to the planned sites in residential areas before building begins. We also learned that telecommunication companies (through the Telecommunications Carriers' Forum (TCF)) are developing their own guidelines to standardise their engagement with residential communities potentially affected by a new or substantially upgraded wireless telecommunication site.

Draft "Guidelines for undertaking community engagement for wireless telecommunications sites" were released for public comment in July 2009 by the TCF. The guidelines seek to standardise and improve approaches to community engagement, and recommend earlier notification of affected communities. The guidelines also aim to ensure that the public receive accurate information on wireless sites, and to help operators to communicate effectively with interested parties on the location of such sites. We were informed that the TCF is finalising the guidelines, taking account of public feedback.

### **Summary**

Formal consultation requirements on new or upgraded telecommunication sites are set out in the Resource Management Act. The extent to which a proposal is publicly notified depends on whether the site in question is designated appropriately in the relevant district or city plan. Telecommunication operators are nevertheless encouraged to engage with affected communities. The NES does not set requirements for community engagement.

In recognition that practice is diverse and that there is growing public interest in the erection of such facilities, the industry is preparing a voluntary set of guidelines to apply to community consultation, over and above any formal requirements under the Act.

### **Conclusion**

We were asked to consider the need for three actions:

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<sup>10</sup> *National Guidelines for Managing the Effects of Radiofrequency Transmitters*, Ministry for the Environment and Ministry of Health, December 2000.

- preventing the construction by Telecom of a cellphone tower at the Atawhai exchange
- prohibiting cellphone towers and similar transmission devices from being erected within a certain distance of educational (and other specified) facilities
- legislating to require community consultation, and notified consent, prior to the erection of cellphone towers and similar transmission devices in residential areas.

We note the progress being made towards finding an outcome that is acceptable to Telecom and the petitioners in the specific case at Atawhai. We are encouraged that the parties continue to work to find a suitable solution and make no recommendation in that regard.

We have not specifically discussed in our report the important role of cellphone towers (and similar facilities) in access to telecommunications technology. We note, however, that any consideration of a ban on erecting such facilities within a certain radius of specific sites would raise implications for the growing demand for infrastructural development. The majority of us consider that setting an arbitrary limit on the location of such facilities is not an appropriate response given New Zealand's infrastructural needs. We believe the issue is best managed by developing good consultation practices, reviewing the current regulatory environment with a view to improving them in this regard, and a thorough understanding of the underlying science.

We nevertheless acknowledge that there remains some uncertainty about the appropriate safety limits and restrictions in the light of some recent scientific research into the long-term chronic health effects from exposure to electromagnetic fields. We therefore consider there may well be a case for reviewing NZS 2772:Part 1:1999 to ensure that it remains consistent with world's best practice, and we recommend accordingly.

On the matter of community consultation, we agree with the petitioner that telecommunications companies should consult local communities on the location of cellphone towers, cellphone sites, cabinets and other EMR equipment in an area, and seek to come up with sites that have the least impact on nearby residential dwellings and schools. We also consider that there is a need for more consistency between telecommunications providers, and endorse the development of detailed guidelines for operators.

Finally, we note the petitioners' concern that the Government's Interagency Committee on the Health Effects of Non-Ionising Fields does not provide adequate representation of community interests and expertise in risk assessment. We recommend that membership of that committee be reviewed.

### **Green Party minority view**

The Green Party supports the committee's call for the Government to consider undertaking a review of the New Zealand standard.

We believe it is essential that the review examine the scientific basis as well as the adequacy of our existing standard, and be carried out by an independent review group, whose

members have no connections with the telecommunications industry, and no possible conflicts of interest or vested interest in the outcome of the review.

The existing New Zealand standard only measures short-term, heating or “thermal” acute effects of electromagnetic radiation (EMR), and does not take into account chronic, low-level, cumulative effects. This means that it is only intended to protect us from short-term, acute effects that cause tissue heating, and not from cumulative, low-level or biological effects.

There is increasing international evidence, however, that EMR can cause adverse effects even at low exposure levels that are thousands of times below the public safety limits set in our standard. It is therefore imperative that the scientific basis of our standard be reviewed and that a new standard is developed that protects the public from exposure to biological and chronic effects as well as short term, acute effects.

We are concerned that the approach of the Government and the Inter-Agency Committee on Health Effects of Radiation is to assume that EMR is safe until such time as conclusive evidence of harm is proven. This is the opposite of a precautionary approach. Uncertainty remains about the full effects of EMR exposure, but the accumulating body of evidence suggests there are very real risks, including an increased risk of brain tumour from long-term use of cell phones, and that a precautionary approach should therefore be taken to reduce our exposure to those risks.

We are also concerned that there has been an exponential increase in our exposure to electromagnetic radiation since the standard came into effect. Yet no one is monitoring the cumulative electromagnetic radiation we are being exposed to, or assessing the cumulative effect it may be having on human health and wellbeing, and particularly children’s health. Our cumulative exposure to EMR should be measured on an annual basis, and the results published, and every transmitter site in New Zealand should be monitored on an annual basis.

We agree with the petitioners that an urgent review is needed of the so-called national environmental standard which is causing anger and distress in the community, as the Green Party predicted it would. Telecommunications companies must be required to consult with local communities before installing cell antennae, masts, or other equipment on telephone poles, and to find sites that are the least harmful and offensive to a community. New cellphone towers, antennae, and masts should be set a specific distance from schools and hospitals, and where people reside, and telecommunications companies should be required to publish maps on line which identify where EMR transmitters are based all over New Zealand.

We agree, too, that the composition of the Government’s Interagency Advisory Committee on the Health Effects of Non-Ionising Radiation should be urgently reviewed, and representatives who may have vested interests in expanding telecommunications technology removed.

## Appendix

### Committee procedure

Petition 2005/179 of Sarah Allen and 3,100 others was presented on 24 July 2008. Petition 2008/8 of Andrew Crawford was presented on 26 February 2009. Petition 2008/32 of Sharon Stewart, David Collings, and 1,451 others was presented on 4 September 2009. The committee resolved on 30 July 2009 and 10 September 2009 to consider the three petitions together because they raise issues of a similar nature.

We received 43 written submissions on the three petitions. We heard evidence on 28 August 2008, 11 September 2008, and 15 October 2009 from Sue Grey, for Sarah Allen and Ban the Tower Inc., Helen Bennett and Ian Ewen-Street, for Ban the Titahi Bay Tower Residents Group, Ministry for the Environment, Ministry of Health, Telecom New Zealand, Telecommunications Carriers' Forum, and 2Degrees Mobile.

### Committee members

Chris Auchinvole (Chairperson)  
Dr Cam Calder (from 24 June 2009)  
Hon Steve Chadwick (until 6 May 2009)  
David Garrett  
Hon George Hawkins (from 6 May 2009)  
Hon Shane Jones  
Rahui Katene  
Nikki Kaye  
Sue Kedgley  
Hon Nanaia Mahuta (until 6 May 2009)  
Phil Twyford (from 6 May 2009)  
Louise Upston  
Nicky Wagner  
Jonathan Young (until 24 June 2009)