

McGuinness Institute Submission

Inquiry into Fire and Emergency New Zealand's Fleet Management

30 April 2026

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1. Introduction

The McGuinness Institute (the Institute) welcomes the opportunity to submit on the Governance and Administration Committee's inquiry into Fire and Emergency New Zealand's (FENZ's) fleet management, referenced in this submission as 'the inquiry'. We thank the Governance and Administration Committee (the Committee) for inviting public feedback.

As an independent public policy think tank in operation for over 20 years, the Institute focuses on long-term governance, stewardship of public resources, transparency, and the use of high-quality data to support sound decision-making. Rather than responding to individual operational decisions, this submission examines systemic issues relevant to public sector fleet management, and opportunities for improvement. Key systemic issues include: governance arrangements; lifecycle asset management and value for money; data quality; emissions reduction; and accountability to Parliament and the public.

This submission draws on the Institute's recent work examining system design, risk, uncertainty, and emergency and crisis governance within Aotearoa New Zealand's National Resilience System. In particular, it builds on our *Discussion Paper 2025/02 How to tell the difference between an emergency and a crisis – and why it matters*, which explores how clarity of roles, thresholds, and decision rights affects performance under stress, and our *Working Paper 2025/14 Examination of the Emergency Response and the Crisis Response within the National Resilience System*, which examines how institutions, assets, and information flows interact during emergencies and crises.^{1,2}

Later this year the Institute plans to publish *Discussion Paper 2025/06 Wildfires: Signals from Planet Earth to Mankind* (work in progress), which analyzes the impact of wildfires across the world and in New Zealand, including recommendations on how to respond to the increasing risk of wildfires with the changing climate. Scion summarizes this context: "The occurrence of extreme wildfire is accelerating much faster than predicted. The changing climate is increasing the frequency and severity of wildfires, and escalating the risks, not just in the rural areas but also at the rural-urban interface and overseas...well into the suburban zones."³

The Institute has focussed on researching fire because fire begets fire: Wildfires are increasing in intensity and frequency due to climate change, and they are simultaneously accelerating climate change by releasing substantial quantities of carbon into the atmosphere. As well as this, they work to slow carbon sequestration through destruction of carbon sinks such as forests and wetlands. This creates a situation where fire risk is increasing fire risk, which will have a number of negative impacts on human health, the environment, the economy whilst straining the already-strained FENZ resources and fleet.

It is extremely relevant for the Committee to consider the wider context of the changing climate and the resultant pressures, particularly from wildfires (but also other life-threatening risks including droughts, slips and landslides), that will be placed on FENZ's infrastructure and fleet. For example, the United Nations Environment Programme has identified wildfires as a rapidly escalating global risk driven by hotter and drier conditions, with projected increases of 14% by 2030, 33% by 2050, and 52% by 2100 under current trajectories.⁴ In a New Zealand context, official indicators show that the number of 'very high' and 'extreme' fire danger days is increasing at many locations, extending wildfire seasons and placing greater strain on emergency response systems.⁵

Climate change means that New Zealand will face an increasing number of emergencies and crises, of which wildfires is just one example. It is important to have clear, robust systems in

place so Aotearoa can respond to emergencies and crises quickly and effectively. Key recommendations from this research include: increasing the resources provided to Aotearoa's emergency and crisis management; increasing inter-agency coordination; and clarifying Aotearoa's management and regulatory frameworks.

The Institute would welcome the opportunity to speak before the committee or help with any questions.

2. Three high-level concepts

From our research, the Institute would like to share three high-level concepts that are relevant for the Committee as they work on this inquiry:

1. The shift from a 'risk mindset' to an 'uncertainty mindset'

The Institute's research in this area distinguishes between a risk mindset and an uncertainty mindset:

- a) A risk mindset is suited to stable environments, where risks can be identified, reduced, and mitigated before being assessed to determine whether risks are worth taking.
- b) An uncertainty mindset is required in unstable, volatile and highly integrated environments, where decision-making depends on timely information and intelligence.

FENZ is operating within a highly unpredictable environment and thus the content of this inquiry requires an uncertainty mindset. This means planning for future fleet management will need to be flexible in order to constantly adjust to what is happening in the world (for instance, geopolitical pressures or war as well as extreme weather events).

The focus should be on optimising outcomes by responding quickly and effectively to good quality information (not necessarily complete information), so that our systems for responding to crises and emergencies are effective and constantly improving.

2. An 'over reliance' on the New Zealand Defence Force (NZDF)

The Institute, and many others, are also concerned about the public sector's growing reliance on the NZDF to respond to domestic emergencies. There has always been a strong connection between FENZ and the NZDF in responding to emergencies across the country.⁶ However, with pressed resources, this dependence risks shifting the NZDF away from its core role of defence.

The pressure of FENZ and the NZDF to respond also highlights gaps in the funding or resourcing of other emergency agencies. The NZDF's role during the COVID-19 pandemic is a clear example. The NZDF undertakes ongoing analysis of risks in Aotearoa, including the growing frequency of extreme fire events.

Drawing on reports from Scion and FENZ and their modelling of potential future changes in fire danger, NZDF's 2022 report *Extreme Fire: A Changing Threat Landscape and Implications for New Zealand Defence* investigates how fire risk will impact security. In this paper, they emphasise the importance of continued close collaboration with FENZ and call for more resources to increase their personnel and Humanitarian Assistance and Disaster Relief (HADR) capabilities to upgrade firefighting aircraft.⁷

As the NZDF faces increasing pressure and strain for resources, the reliance on them in fire and emergencies. It is critical we support FENZ to fulfil their role effectively, allowing the NZDF can continue to focus on defence in a highly uncertain world.

Case study: Port Hills, Christchurch (2024)

In February 2024, a State of Local Emergency was declared in Christchurch City (including Banks Peninsula) due to a significant vegetation fire which began in Port Hills. The fire started on 14 February and quickly grew to burn through 650 hectares.⁸ Residents were evacuated from certain areas and Te Whatu Ora issued a public health warning for smoke from the fire. **The NZDF were engaged to work alongside crews of firefighters, helicopters and fixed-wing aircraft.⁹ Fifteen helicopters were employed at the height of the fire, with this part of the operation costing over \$1 million.¹⁰** In response to the fire, the second in Port Hills in under seven years, local residents and others have been raising concerns about why flammable pine trees were ever allowed to be replanted in a fire-prone area that had only recently recovered from another significant wildfire.¹¹ In 2017, previous Port Hills fires burned through nearly 1600 hectares of land, destroying nine houses, forcing 1400 locals to evacuate their homes and resulting in the fatality of a firefighter pilot. In a review of the fire, scientists concluded that if ‘significant’ steps were not taken, the Port Hills fire could be seen not as a freak accident but ‘a window into New Zealand’s fire future.’¹² This warning gains ominous resonance after the 2024 fire.

3. The importance of forward engagement

Forward engagement, a concept developed in 2001 by Leon Fuerth, is a process of thinking systematically about complex, interactive, and longer-range issues in a way that is applicable to public policy.¹³ In this context, fire and emergency planning benefits from detailed preparation and early engagement, including a focus on prevention, communication and education.

In terms of FENZ’s statutory role, forward engagement reinforces the need to anticipate future emergency conditions—rather than responding solely to present events—recognising that fires and other emergencies emerge from complex and interconnected systems. The concept draws heavily on Futures Studies and Complex Systems Research, supporting FENZ’s responsibilities across prevention, preparedness, and response.

Forward engagement will save lives and save money for New Zealand by preventing future damage from occurring. As well as the health and environmental costs, the economic cost of fires is immense. If we can improve our response systems with forward engagement, this money can be spent elsewhere.

Case study: Cost of wildfires to Aotearoa’s economy in 2020

Scion published an August 2022 report which analyses the split of estimated total costs of wildfires on Aotearoa’s economy in 2020:

- Direct costs: \$142 million
- Indirect costs: estimated to be at least 2-3 times greater than the direct cost (i.e. \$280-426 million)
- Social impacts and losses of ecosystem services: estimated to be up to 30-60 times direct costs (i.e. \$4260-8520 million).¹⁴

This research also predicted by 2050, direct costs of wildfires could increase by 400% (to an estimated \$710 million/annum) due to the changing climate and other conditions causing wildfires.¹⁵

3. The importance of effective fleet management in the public sector

'What used to be one in ten year events may now be one in three.' – NZDF¹⁶

Public sector vehicle fleets are significant long-term investments with material, financial, environmental and operational risks. For an emergency services organisation such as FENZ, fleet reliability and suitability are essential for meeting life-saving purposes. The Institute's research on emergency and crisis systems highlights that resilience depends not only on frontline capability, but on the quality of governance, planning, and supporting infrastructure that shape performance before, during and after events.¹⁷

Evidence of increasing fire danger days and longer fire seasons reinforces the importance of robust fleet management. More frequent periods of elevated fire danger can translate into higher utilisation rates, reduced downtime for maintenance, and increased wear on vehicles and specialised equipment.

Effective fleet management should support:

- operational resilience in emergency response
- transparency with the public and Parliament
- prudent use of public funds
- reduced whole-of-life costs, and
- alignment with the Government's climate and emissions reduction objectives.

In our work on risk and uncertainty, the Institute emphasises that assets intended for use in volatile, unpredictable environments should be planned and governed differently from those used under stable conditions.¹⁸ This distinction is particularly relevant to emergency service fleets. We want to ensure New Zealand's fleet system is designed for the long term and is robust for a variety of future challenges, including those which we cannot foresee.

4. Governance, oversight and accountability

The Institute encourages the Committee to consider whether the governance and oversight arrangements for FENZ's fleet are sufficiently clear, robust, and aligned with good practice in public sector asset and systems management.

Our examination of the National Resilience System indicates that unclear decision rights and blurred accountability can weaken performance under stress, even where individual organisations are capable and acting in good faith.¹⁹ In a fleet management context, this risk may arise where responsibilities for procurement, funding, operational readiness, and long-term planning are diffuse or insufficiently transparent.

The Institute recommends that the Committee consider how to improve governance, oversight and accountability of fleet management in New Zealand. Key things to consider include:

- Role clarity: ensure the management roles of Ministers and FENZ, relating to high-value, long-lived fleet assets, are clearly defined and understood. This will also help organisations with budgeting and planning.

- Decision transparency: significant fleet decisions should be supported by documented assumptions, trade-offs, and risk assessments. This information should be made publicly available.
- Strategy: a fire and emergency strategy for New Zealand should be published every five years, with subsequent reports and strategies to be tabled in the House. This is explained in more detail under Section 7. General Recommendations.
- Parliamentary visibility: reporting arrangements should provide Parliament with sufficient information to scrutinise fleet performance, costs, and risks over time, rather than only in response to failures.

5. The FENZ funding gap: Lifecycle asset management and public value for money

New Zealand’s increasing fire and emergency risk raises the question of how much investment will be required to meet our fire management needs in the future. Forecasts show wildfires, floods, droughts and other extreme weather are increasing in scale and frequency. FENZ are already under-funded and under-resourced and with increased natural disaster risk, demand for their services will only increase over time, straining already stressed resources.

How is FENZ funded?

At present, FENZ operations are primarily (over 95%) funded by a levy on contracts of insurance where property is insured against the risk of fire. The Government contributes \$10 million per year to reflect the benefit the public receive from services provided by FENZ, however this amount has not been reviewed since 2017.²⁰ In 2022/2023, this \$10 million Government contribution amounted to only 1.4% of FENZ’s total net revenue of \$710,076 million.²¹

What is the cost of running FENZ?

As at 30 June 2022, the total value of assets managed by FENZ was approximately \$1.7 billion, predominantly comprising land, buildings, fire appliances and equipment.²² The maintenance and management of these assets requires large amounts of resources, as does purchasing new assets, developing technology and managing staff. In 2021/2022, FENZ invested \$89.56 million in fire stations, appliances, motor vehicles and other assets.²³

The funding gap – the balance sheet

FENZ currently receives insufficient funding to cover their costs. In 2022/2023, they had a net deficit of over \$27 million.²⁴ Future forecasts show annual deficits as a consistent feature, causing debts to mount (see table 3 below).

Table 3: FENZ overall funding position after NZPFU settlement

\$ million	2022/23	2023/24	2024/25	2025/26	2026/27
Revenue	661.2	673.8	686.8	700.0	713.5
Expenses	713.0	713.9	740.1	748.4	766.8
Net surplus/(deficit)	(51.8)	(40.1)	(53.3)	(48.4)	(53.3)

Table source: Fire and Emergency New Zealand (FENZ), *Funding Fire and Emergency Services for all New Zealanders*, April 2023.²⁵

In April 2023, FENZ put forward an urgent proposal to increase the FENZ transitional levy for the 2024/25 and 2025/26 financial years. In August 2023, the Government announced its decision to increase the transitional levy on insurance policies by 12.8%, effective from 1 July 2024. This levy will remain in force until 1 July 2026, when a new levy will come into effect under Part 3 of the Fire and Emergency Act.²⁶

FENZ's 2023 Briefing to the Incoming Minister contained urgent concerns about funding in the future '...[c]urrent and planned levels of capital expenditure may be insufficient to ensure the asset base is appropriately maintained and sustained to meet the needs of New Zealand communities. These concerns relate primarily, but not exclusively, to property and fleet.'²⁷

Case study: North Shore fires reiterates concern for aging FENZ fleet (April 2025)

The New Zealand Professional Firefighters' Union (the Union) is a key partner with FENZ. The Union have repeatedly expressed concern that FENZ's fleet is old and unsafe, with 'the average age of the fleet now over 20 years old.'²⁸ During the emergency response to the North Shore fires in April 2025, two firefighters had their lives put at risk due to their truck breaking down in the middle of a fire. The crew had to be rescued, diverting an aerial appliance from fighting the fire. The Union responded to this event with a request for prompt action: 'The Union is seriously concerned about the state of the aerial fleet. Whilst the Parnell aerial is due for replacement in the near future (a project that has taken over 5 years), this still leaves us with an aging and unreliable fleet at City (year 2011), Ellerslie (year 2007), Papatoetoe (year 2010) and Te Atatu (year 2007).'²⁹

The future of FENZ funding

As well as being inadequate to cover future forecasted expenses, the FENZ funding system is also vulnerable to further losses from the below existing issues.

1. Insurance levy system at risk

The levy system has worked in the past, however increasing costs due to more extreme wildfires means it is already inadequate. This will only get worse as more fires are leading to greater insurance pay-outs and 'insurance retreat'. This occurs 'when a private insurer declines an application for insurance coverage, or stops offering renewal for existing coverage, because of a property's exposure and vulnerability to an escalating hazard. Partial retreat refers to situations where an insurer introduces terms that transfer a significant proportion of a property's risk back onto the policy holder.'³⁰

In relation to climate change, insurance retreat occurs because insurers cannot bear all the cost of likely climate-related damages in Aotearoa, hence must limit the risk they expose themselves to.³¹ Therefore, the funds available to FENZ may become more limited, leaving revenue lower whilst costs increase.

There is also some public controversy around this levy system, particularly concerns it is inequitable because only those paying insurance contribute, whereas all of society benefits from the services FENZ provides.

2. Assets declining

Much of FENZ's equipment and buildings are old or not fit for purpose. In FENZ's 2023 Briefing to the Incoming Minister they noted urgent concerns about requiring additional funding in order to maintain and restore their assets: 'Twenty seven percent of our appliances are beyond their target asset life (of 20 to 25 years) and 27 percent of our stations are more than 50 years old. The age of buildings does not necessarily determine their fitness for purpose, but the

functionality of about 36 percent of our stations has been assessed as poor or very poor. Capital expenditure over the next 20 years are expected to total circa \$2.9 billion.³²

As well as maintenance, there are also other costs, such as for providing community education or adopting changes to fire-resistant building materials and design, that will also increase in the future.

3. Volunteer workforce

The majority of FENZ's workforce – almost 12,000 – are volunteers.³³ These volunteers are mostly firefighters who are spread across over 600 stations. Volunteers help communities prevent, prepare for, respond to and recover from emergencies. An increase in the scale and frequency of fires will require increased commitment from volunteers, their employers and their families, as well as higher health and safety risks on the job. This may decrease the number of volunteers, resulting in increased employment costs for FENZ, which is an additional cost.

4. Future research and development required

Increased wildfires and other natural disasters will require increased funding for technology, equipment and staffing, particularly for firefighting aviation services when fires become out of control. At present, approximately \$10 million is allocated per year to firefighting aviation services.³⁴ For instance, in the 2024 Port Hills wildfire, a two-day aerial firefighting effort cost over \$1 million, with up to 15 helicopters in simultaneous operation.³⁵

A new funding system must use forward engagement to consider future needs to ensure FENZ will have sufficient resources to retain staff, support volunteers, maintain their current fleet and equipment and invest in developing improved technology, enable a fast and effective response to emergencies in the future.

Applying an uncertainty mindset to prepare for the future

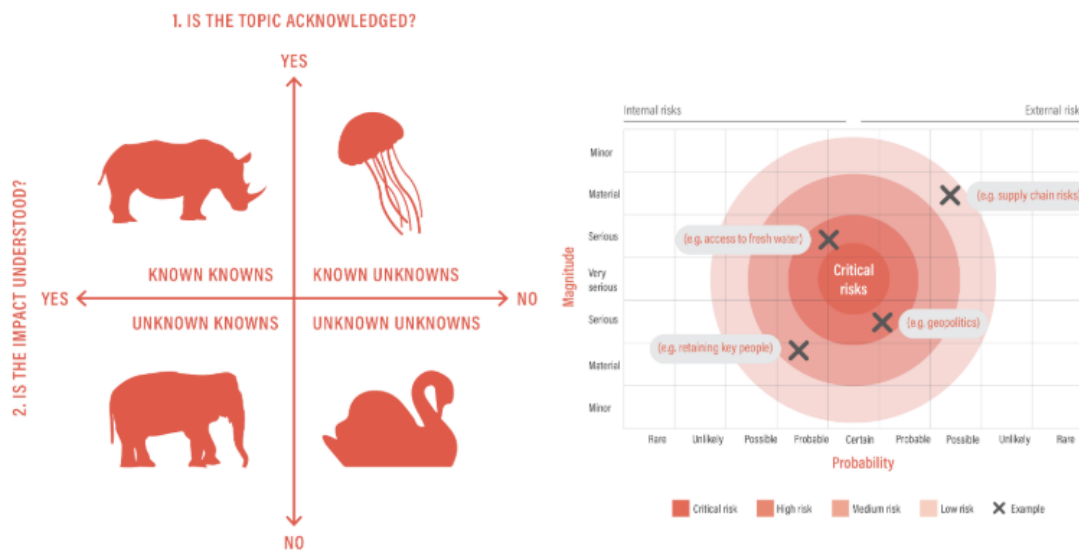
In the Institute's work on emergencies and crises, our research emphasised the importance of designing systems that perform across a *range* of plausible futures, rather than optimising narrowly for a single set of assumptions.³⁶ The future is highly uncertain and we need to ensure our public infrastructure is ready for any eventuality. Applied to fleet management, this points to the importance of a rigorous whole-of-life approach to vehicle investment and stewardship.

As well as potential geopolitical, economic and environmental impacts, fleet management needs to consider the impacts of the changing climate and extreme weather. Official analysis of wildfire risk indicates that increased fire danger is not uniform across the country. Rather, it varies by region and over time.³⁷ This has implications for how fleet assets are distributed, rotated and maintained.

It is worth considering whether there is a focus on short-term procurement savings, which may lead to higher long-term costs and operational risk when lifecycle considerations are insufficiently prioritised, particularly for specialised emergency vehicles. In the face of uncertainty, the Institute recommends that the Committee considers how to incorporate flexibility as it plans for the future of fleet management in New Zealand. This should include consideration of potential uncertain events, risks, opportunities and trends that will seriously impact the country, including 'black swan' and other unpredictable events.

We need to ensure New Zealand's fleet management are capable of saving lives in an uncertain future.

Figure 1: Examples of the animal metaphor and critical risk mapping foresight tools to assist with planning in the face of uncertainty



The Institute has a number of [foresight tools](#) that are useful for futures and scenarios work. If the Committee would be interested, the Institute is happy to provide these.

6. The research gap: Concerns with data quality, metrics and decision-making

Across multiple publications, the Institute has highlighted the central role of high-quality, accessible data in supporting good governance and long-term stewardship. In emergency and crisis contexts, poor data visibility can amplify uncertainty and impede timely corrective action.³⁸ In the context of fire and emergency management, this can have life-threatening consequences.

Strengthening the quality and transparency of fleet and other fire and emergency data would support operational decision-making and enable more effective public and parliamentary scrutiny. Improved data would also help to identify and assess risks before they occur, potentially improving efficiency to help save human lives and property, protect the environment and spend less money overall.

Research and analysis are critical for understanding past events and in helping to predict and prepare for the future. It is recommended more detailed research is undertaken to improve measurement and management of fires and emergency events in New Zealand as they will have a significant impact on FENZ requirements. This could include analysis of what works in fire and emergency internationally. Quantification of risk and negative impacts is powerful in incentivising and directing investment in prevention and mitigation strategies.

Below are two notable research gaps the Institute has found in our research on fires in New Zealand:

Lack of emissions data

- Breakdown of area burned by fire type as the type of area burned can significantly alter amount of emissions released.

- Loss of carbon sequestration when wildfires occur in forests. This requires a detailed understanding of how long these forests take to regrow, and the carbon absorption of each plant species.
- Incorporation of annual wildfire emissions data into national carbon accounting and climate targets

Lack of long-term economic impacts data

- Understanding of indirect costs caused by wildfires, such as changes to insurance premiums or property values and the impacts this will have.
- Forecasting of future insurance costs, especially as wildfires become more likely in urban areas and more people are living in the rural-urban interface.
- Data to make reliable predictions as to what areas are likely to be affected by insurance retreat so we can inform and prepare local communities.
- Research into long-term economic impacts of wildfires to understand how they will impact both natural resource availability and different industries. Understanding how wildfires will impact industries such as agriculture, tourism or forestry, will have long-term impacts on a national scale.

The increasing frequency of high fire danger conditions means that consistent and transparent reporting of fleet utilisation, reliability and downtime is particularly important for enabling early intervention before risks crystallise into failures. However, the Institute found significant data on which to make decisions was not being produced.

The Committee may therefore wish to explore how to ensure FENZ can improve data quality, metrics and decision-making:

- maintains and publicly shares comprehensive and reliable data on fires (including fire area and type of fire), fleet utilisation, condition, maintenance costs, reliability and downtime, emissions impacts and other long-term costs
- systematically uses this data to inform procurement, replacement, and investment decisions, and
- reports key fleet metrics internally and externally in a consistent and comparable manner.

7. General recommendations

1. Monitor, evaluate, and require regular feedback loops to ensure FRENZ's fleet management system remains fit for purpose

It is critical to review policy regularly to ensure it is working as intended. Consistent reviews will help to build intelligence on what works and what does not. These reviews should analyse impacts from the perspectives of communities, businesses and scientists. For instance, improved technology such as drones and artificial intelligence may help improve how we prevent fires from spreading in the first place.

It is also important these reviews are publicly available to ensure the fire and emergency management system is accountable and transparent while meeting its objectives.

We recommend that the Committee consider how to incorporate periodic reviews of how this regime is working, including analysis of the short-, medium- and long-term impacts. This should

include monitoring uptake, quality, costs, usability, unintended consequences, and other issues that impact the environment, economy, community and other factors.

2. Require climate impacts and transition strategies to form a key part of the reforms

The Institute's work on uncertainty and system design underscores the need for public sector organisations to plan for long-term structural change, including the transition to a low-emissions economy, rather than treating such change as a secondary or external consideration.³⁹

Climate projections and fire-risk modelling indicate that wildfire seasons in many parts of New Zealand are likely to become longer. New Zealand's environment is under significant pressure and there is an urgent need to adapt to climate change as well as reduce carbon emissions, to prevent further environmental degradation. Climate change is one of the most serious risks facing New Zealand and it should be an important part of any emergency regime, especially fleet management, which attempts to plan for the future of New Zealand.

The extreme, and increasing, impacts of climate change are detailed in *Appendix 2: The context*.

The changing climate has resulted in longer fire seasons. These require extended periods of operational readiness, reduced recovery windows for fleet assets, and greater cumulative stress on vehicles and equipment designed for emergency response.^{40, 41}

While recognising the operational constraints faced by emergency services, the Institute recommends the Committee also consider:

- how emissions and transition considerations are incorporated into fleet strategy and procurement decisions
- how the regime will help slow the impacts of climate change and encourage climate-friendly planning
- how to mitigate and respond to the impacts of the changing climate
- whether FENZ has a clear and credible pathway for progressively reducing fleet emissions over time, and
- how fleet planning aligns with wider government climate policy and reporting frameworks.

Early and transparent planning is particularly important where vehicles have long service lives and constrained replacement options. The approach to fleet management needs to prepare New Zealand for long-term risks. Making decisions in the name of economic prosperity today, with a substantial risk of creating an economic burden later on, is irresponsible to future generations.

3. Require a strategy to be produced for fire and emergencies in New Zealand. This strategy should be prepared and reviewed every five years, with subsequent reports and strategies to be tabled in the House.

Legislation is central to regulation, and regular reviews will ensure it is working as intended. No Bills work in isolation; they work alongside different government department strategies.

The Institute started a *GDS Index* research project in 2014 and it has been regularly updated ever since. The *Government Department Strategies Index Handbook – He Puna Rautaki* ranks each government department strategy (GDS) in terms of essential information. The *GDS Index* aims to illustrate how New Zealand might strengthen GDSs to be more effective, responsive, measurable, comparable and durable through public consultation, engagement and ownership.⁴²

However, the 2024 *GDS Index* found only 16% of GDSs in operation (32 out of 195) were required or referred to in legislation.⁴³ In our 2026 *GDS Index* update, to be published later this year, we did not find any GDSs which covered fire and emergency preparation in New Zealand. For such a critical part of public policy and planning, this was unexpected and the Institute recommends that a fire and emergency strategy is required by law to be prepared and reviewed (at a minimum) every five years.

Requiring in law that a strategy be published is a useful mechanism for Parliament to ensure strategies are developed, consulted upon and made public. It is recommended that more GDSs be mandated by law to ensure a higher level of due diligence, ownership, durability and accountability. The Institute believes this is a governance issue for the Minister for the Public Service and the Minister for Regulation.

If government departments make the content of GDSs more transparent, Ministers, officials and the wider public will be better able to assess their quality and, where appropriate, work together to deliver better outcomes more cost-effectively.

4. Invest in technology

The primary opportunity for managing wildfire risk is innovation and new technology, including AI. Investment in innovation and the trialling of new techniques and methods in this field for the mapping of wildfire risk and future forecasts as well as new technologies to improve the effectiveness and efficiency of response should be increased and encouraged. There is an opportunity in new technology, however resources are required to make this investment a reality.

Potential new technology is already being explored:

- Infrared, drone and satellite technology and better mapping of vegetation coverage will increase certainty around where and when wildfires will occur and how they will spread. NASA's Fire Information for Resource Management System mapping tool offers near-real time fire data. The tool can be used to look at active fires, daily mapping of burned areas, aerosol plumes, burned area from past fires, and fire weather hazards.⁴⁴
- International collaboration is improving wildfire data collection. The Global Wildfire Information System gathers comprehensive global wildfire mapping, profiles of each country, and fire weather forecasts.⁴⁵
- Research is increasing options for natural wildfire solutions. For a local example, Curran's analysis of green firebreaks and plant flammability could help prevent wildfire spread.⁴⁶
- More accurate collection of emissions data will enable a better understanding of climate change impacts. The Global Fire Emissions Database measures emissions from fires (calculations are based on the type of vegetation that burned and the size of the area burned). NASA's MODIS and VIIRS data are used to determine the burned area.⁴⁷
- Google is expanding its wildfire boundary tracking technology to cover more than 20 countries, using AI to adapt identify wildfire boundaries.⁴⁸

Case study: Developing technology and research to build models to give more accurate predictions on how large wildfires may spread (2024)

A research program funded by MBIE, Te Whare Wānanga o Waitaha/University of Canterbury is collaborating with Scion and international partners to create detailed, localised modelling systems that provide accurate predictions of fire spread by incorporating weather changes driving fire behaviour. There is not currently a theory for fire spread, however it is hoped this research will inform and provide practitioners with insights on fire movement under different atmospheric conditions.⁴⁹ This new knowledge enables better predictions of fire spread to better protect the environment from wildfires whilst improving the safety of firefighters and

communities. The new research will also assist with improved decision-making strategies and tactics around where and how to safely and effectively suppress extreme fires.⁵⁰

5. There is a need for transparency on the use of AI

It is unclear how AI will be used in this submission process.

The Institute recently prepared and published *Think Piece 43 – Unlocking Government documents with AI*.⁵¹ Based on this work, we learned a great deal about the risks and opportunities of applying artificial intelligence (AI) in a government setting. Given these insights, the Institute now has a policy of requesting every organisation to:

- clarify how AI is expected to be used to analyse and report on public submissions when inviting submissions from the public, and
- prepare a public report on how AI was used to collate ideas and present the report to decision-makers when writing up submissions from the public.

Key information in both cases should include:

- (i) the AI tool (e.g. Google NotebookLM)
- (ii) the number of submissions that were read in full or in part by a human versus those that were read only by AI
- (iii) how the AI results were verified as correct (i.e. the audit process), and
- (iv) a summary of the errors found as a result of the review process.

Furthermore, AI should be used for the benefit of citizens, and submission processes should be reconsidered given this new tool.

8. Conclusion

The McGuinness Institute appreciates the opportunity to contribute to the Governance and Administration Committee's inquiry into FENZ's fleet management.

As climate change alters the frequency, duration and intensity of emergency events, the resilience of supporting systems, including vehicle fleets, becomes increasingly important. Fleet management should therefore be understood not simply as an operational matter, but as a question of governance, stewardship and long-term public value.

This submission has emphasised that FENZ's fleet management is a matter of long-term governance and public stewardship. It requires an uncertainty mindset, robust lifecycle planning for the long-term, high-quality data, a government strategy produced regularly, and transparent funding arrangements. These suggestions will equip both the FENZ and Parliament to manage increasing climate-driven demand and long-lived public assets responsibly over time, and work to mitigate the current reliance on the NZDF with responding to fire and emergency events.

The Institute encourages the Committee to consider how fleet governance and oversight can better support preparedness, adaptability, and accountability as demands on FENZ continue to evolve. Strengthening these foundations will help ensure fleet assets remain fit for purpose and public resources are managed prudently in the public interest.

The Institute is supportive of this inquiry and looks forward to seeing the Committee recommendations.

Appendix 1: About the McGuinness Institute

The Institute was founded in 2004 as a non-partisan think tank working towards a sustainable future for Aotearoa New Zealand. Project 2058 is the Institute's flagship project focusing on Aotearoa New Zealand's long-term future. Our observation that foresight drives strategy, strategy requires reporting, and reporting shapes foresight, led us to develop three interlinking policy projects: *ForesightNZ*, *StrategyNZ* and *ReportingNZ*. All three must align if we want Aotearoa New Zealand to develop durable, robust and forward-looking public policies.

The policy projects frame and feed into our research projects, which address a range of significant issues facing Aotearoa New Zealand. The 13 research projects are: *BiodiversityNZ*, *CivicsNZ*, *ClimateChangeNZ*, *ForesightNZ*, *OneOceanNZ*, *PandemicNZ*, *PublicScienceNZ*, *ReportingNZ*, *SecurityNZ*, *StrategyNZ*, *TacklingPovertyNZ*, *TalentNZ* and *WaterFuturesNZ*.

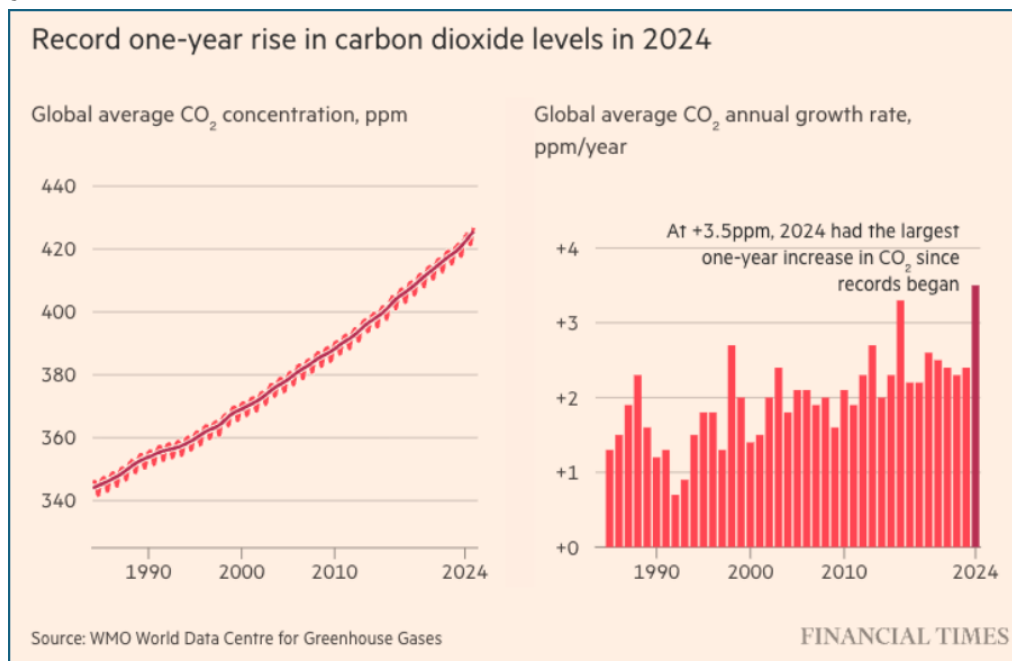
Appendix 2: The climate context

Level of emissions and climate change is unprecedented

The intensifying global transition to low-emission technologies, along with increases in defence spending, are driving a substantial increase in demand for critical minerals such as lithium, cobalt and other rare earth elements. This surge is resulting in both supply-chain vulnerabilities and pricing volatility, with implications for industries reliant on clean energy infrastructure. Simultaneously, the growing frequency and severity of climate-related events are contributing to population displacement and heightened immigration pressures.

Recent research shows that atmospheric carbon dioxide concentration in 2024 was the largest one-year increase since records began in 1957 (see graphs below using data from WMO World Data Centre for Greenhouse Gases).⁵²

Source: Financial Times, *Extreme heat events rise in decade since Paris accord as CO₂ stays at record, studies say*, 2025.⁵³



Recent examples of the costs of the changing climate include:

- ‘In July [2025], Pakistan saw record-breaking heat, with temperatures in Chilas, in the mountains, 48.5C, which may have contributed to the flooding that followed.’⁵⁴
- ‘Extreme wildfire activity has more than doubled worldwide [in the last 21 years].’⁵⁵ These wildfires have had severe consequences for air quality, biodiversity and human health, and continue to shape global discussions on climate resilience and emergency preparedness.
- ‘More than 32,000 people have died trying to reach Europe in the past 10 years – including 1,300 dead or missing this year [as at September 2025].’⁵⁶
- ‘Cyclone Gabrielle in 2023 and the Auckland Anniversary floods caused an estimated \$14.5 billion in damage, of which insurers paid \$3.8 billion in claims ... global insured losses from natural catastrophes in 2025 are likely to surpass \$100 billion for the seventh straight year ... The largest single loss to date is the Los Angeles wildfire, with insured losses of more than \$40 billion.’⁵⁷

These shifts are straining local systems and amplifying demand for essential resources, including food and water, especially in regions already facing environmental stress. It is not surprising, therefore, that the September 2025 *Mood of the Boardroom* survey revealed that 78% of chief executives in New Zealand report that their boards regularly assess geopolitical vulnerabilities as part of their risk matrix.⁵⁸ This reflects a growing recognition that global instability, from trade tensions and resource competition to climate-induced migration, is creating significant challenges for businesses. We cannot afford to ignore risks on the basis that new systems are too hard to implement.

New Zealand's environment is under significant pressure, and we must urgently adapt to climate change and reduce carbon emissions. Climate change is one of the most serious risks facing New Zealand, and the proposed Bill fails to include detail on how they will respond to and help slow the impacts of it.

The Climate Change Performance Index (CCPI) notes that New Zealand's 2025 climate action is backsliding, and that the recent proposed revision of the second emissions reduction plan reinforces this. CCPI make the following key points:

- New Zealand was ranked 44th in 2025's CCPI and its climate policy performance was rated 'very low'.
- New Zealand's NDC2 does not meet the requirements of the Paris Agreement. It is not aligned with 1.5 degrees Celsius of warming and does not reflect New Zealand's highest possible ambition, with the Climate Change Commission finding that domestic action alone could feasibly contribute to emissions reductions of up to 69% below 2005 gross levels by 2035 without harming economic growth.⁵⁹

Like the rest of the world, New Zealand is facing the impacts of rising temperatures, changing weather patterns, and increased occurrences of extreme weather events. These changes are serious and will increase, impacting the next generation and beyond. New Zealand needs to both reduce our greenhouse gases and prepare for future climate-related risks. Ministry for the Environment has noted the impacts are increasing in frequency and severity across the country:

Aotearoa New Zealand experienced its second warmest year on record in 2023, just shy of the record set in 2022, with an average temperature of 13.6 °C. Climate change projections for Aotearoa show further warming is projected by 2090, with more hot days and fewer cold days across the country over the next decades.⁶⁰

We need to prepare for an uncertain future. Making decisions in the name of economic prosperity today, with a substantial risk of creating an economic and environmental burden in the future, is irresponsible to future generations. Further, the lack of consideration of climate change in the proposed Bill undermines New Zealand's investment in and commitment to climate mitigation and adaptation strategies.

New Zealand's international climate commitments

New Zealand is party to a number of international agreements committing us to reducing our emissions and working to help mitigate climate change. It is important we stand by these agreements to maintain our international relationships and trade reputation built on the 'clean, green' image of our exports.

As it is written, the proposed new Bill fails to integrate the principles of the international commitments New Zealand has made. This will have serious risks for our trade agreements, reputation and economy.

Recent international criticism of New Zealand's backwards shift in emissions targets at COP30 reflects the importance of acting now to reduce emissions, comply with our commitments, and maintain our international reputation and trade relationships.⁶¹ Earlier this month, our trading partners, including the UK, raised concerns over the decline in New Zealand's climate policies again. The UK's views on our climate change policies are especially important to the economy as New Zealand's trade with the UK depends upon our climate commitments and is worth \$1 billion per year to New Zealand.⁶²

Our international commitments are increasingly being included in New Zealand's trade agreements. Complying with them is critical for trade – which is essential for our economy. For example, Article 3 of the Free Trade Agreement with the EU, signed on 9 July 2023, states that a party has an obligation to refrain from any action or omission that materially defeats the object and purpose of the Paris Agreement.

Some of New Zealand's relevant international commitments are below.

Paris Agreement

The Paris Agreement is the global agreement on climate change adopted by parties under the United Nations Framework Convention on Climate Change (UNFCCC) on 12 December 2015. New Zealand ratified the Paris Agreement on 4 October 2016.⁶³ The purpose of the Paris Agreement is to:

- keep the global average temperature well below 2°C above pre-industrial levels, while pursuing efforts to limit the temperature increase to 1.5°C
- strengthen the ability of countries to deal with the impacts of climate change
- make sure that financial flows support the development of low-carbon and climate-resilient economies.⁶⁴

The Paris Agreement took effect in 2020, which means our commitments to reduce greenhouse gas emissions, our Nationally Determined Contribution (NDC), applied from 2021. New Zealand's first NDC was to reduce greenhouse gas emissions by 50% below 2005 levels by 2030.⁶⁵ In 2025, the Government announced New Zealand's second NDC is to reduce emissions by 51–55% compared to 2005 levels, by 2035.⁶⁶

Global Methane Pledge (GMP)

There is a global agreement to reduce methane, which was launched at COP26 by the European Union and the United States. The GMP today consists of 159 participating countries (including New Zealand) and the European Commission. These countries have all pledged to globally lower methane emissions by 30% from 2020 levels, by 2030.⁶⁷

United Nations Framework Convention on Climate Change

New Zealand is a party to the United Nations Framework Convention on Climate Change (UNFCCC), an international treaty that enables over 185 countries to collectively consider how to mitigate climate change and cope with its impacts. New Zealand also has commitments to the significant agreements under this treaty, including the Kyoto Protocol, the Doha Amendment to the Kyoto Protocol, and the Paris Agreement.⁶⁸

New Zealand's Emissions Trading Scheme supports and encourages global efforts to reduce greenhouse gas emissions by helping New Zealand meet its international obligations under the UNFCCC. New Zealand's Environmental Protection Authority administers the Emissions Trading Scheme and the New Zealand Emissions Trading Register.⁶⁹

United Nations Sustainable Development Goals

Goal 13 of the 17 Sustainable Development Goals established by the United Nations in 2015 is to take 'urgent action to combat climate change and its impacts'.⁷⁰ The Ministry of Foreign Affairs and Trade states that although these goals are not legally binding, countries are expected to report voluntarily on implementation and 'New Zealand will contribute to achievement of the goals through a combination of domestic action, international leadership on global policy issues, and supporting countries through the New Zealand Aid Programme'.⁷¹

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