



# **Review of the Fire Service Funding Model**

**Report to the New Zealand  
Professional Firefighters Union**

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## Executive Summary

The collective employment agreement between the New Zealand Professional Firefighters' Union (NZPFU) and the New Zealand Fire Service (NZFS) lapsed in December 2010. Negotiations over a new collective employment agreement have stalled, and Union members began industrial action in August 2011.

The NZPFU asked Castalia to prepare an economic assessment of the current funding model, to understand whether the NZFS might be constrained in its wage negotiating position by an inefficient funding mechanism.

We found that the funding model could be better designed to reflect the value of firefighting services received by New Zealand society:

- We conclude that the funding system should move from an insurance-based model to a property rates and car registration-based system
- This would improve economic efficiency and administrative efficiency by improving incentives to prevent fires, expanding and broadening to a more certain funding base, and leveraging other administrative systems to achieve a low compliance burden
- By targeting those who benefit from fire services to allocate funding contributions, the on-going provision of fire protection and emergency response becomes more efficient and sustainable, and
- This should also improve certainty for future wage negotiations, if indeed the gradual erosion in fire service funding has influenced recent bargain stand-offs and union action.

To ensure the NZFS is sustainable, the funding model needs to change and move away from the current insurance-based funding model—toward a property rates and car registration-based system. This would be more efficient, fairer and less distortionary.

# 1 Introduction

NZPFU asked Castalia to consider how the current funding model might be improved for the New Zealand Fire Service (NZFS) to pay a “fair and right” wage to professional firefighters.

This report reviews previous investigations and analyses of the current insurance-based levy system. Section Two begins by explaining the features of a ‘good’ funding model. We first look at what makes good mechanisms for funding publicly provided services, looking at fairness based on who receives benefits and who pays, the theoretical impact on individuals’ incentives, and practicality—looking at administrative efficiency.

Section Three reviews previous findings that the current funding system does not achieve key policy objectives, identifying some key deficiencies with the current model.

Section Four concludes by identifying some of the recommendations advanced in the past for reforming the fire service levy system. We also provide detail on previous reviews of the funding model in an Appendix.

## 2 Characteristics of Good Funding Models are Well Established

There are two important (and often competing) features of a good funding system: economic efficiency and administrative efficiency.

### 2.1 Economic Efficiency

Economic efficiency asks how well the funding system creates price signals to ensure that beneficiaries of firefighting services use this service wisely. Economic efficiency comprises four elements:

- All users pay (no one “free rides” on other people’s contributions). If some groups benefit from firefighting services without paying for these services, there is likely to be an inefficiently low level of firefighting services provided
- Each user pays in proportion to the costs of providing the service to them
- All users have an incentive to reduce their risk of needing the fire service. For example:
  - Homeowners have an incentive to reduce their risk of fire: houses that have sprinkler systems or have used fire retardant building materials have a lower fire risk—and a lower expected cost of providing firefighting services to them. To encourage homeowners to take fire prevention measures, these measures could attract a discounted levy to reflect the lower fire risk
  - Car owners have an incentive to reduce their risk of injury in an accident: newer cars are more likely to have airbags and a crumple design that protects occupants and reduces reliance on fire fighters in the rescue process. To further encourage car owners to reduce their risk of injury in an accident, newer cars could attract a discounted levy to reflect lower risk of needing firefighters to rescue them
- The funding system should not distort behaviour in any other markets.

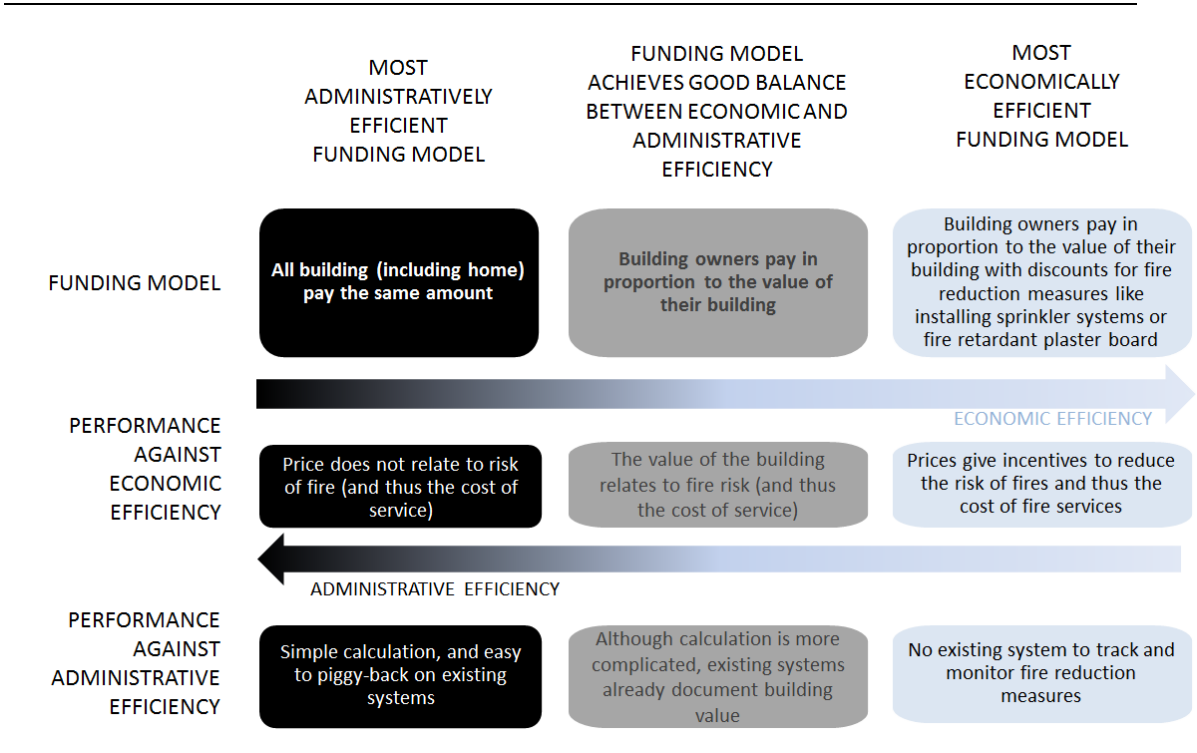
### 2.2 Administrative Efficiency

Administrative efficiency asks how costly it is to determine the appropriate price and make sure that parties pay accordingly.

An optimal funding system would balance administrative efficiency with economic efficiency. As the number of ‘price points’ representing user categories (posing different levels of risk) increases, economic efficiency improves, as prices can be more closely matched with the risk of fire and the cost of providing mitigation or prevention services.

However as the number of price points increases, the cost of administering the funding model also increases. For example, although it is economically efficient to offer discounts for houses with sprinklers; it may be administratively inefficient as it is costly and time consuming to determine whether each house in New Zealand has a working sprinkler system. This trade-off between economic and administrative efficiency is summarised in Figure 2.1 below.

**Figure 2.1: Trade-off between Economic and Administrative Efficiency in Funding Fire Services**



### 3 There are Problems with the Current Fire Service Funding Mechanism

Before presenting potential modifications and recommendations from previous reviews, we identify a few problems with the current funding system.

The current funding system is based on a levy on home, contents and car insurance.

- Insured commercial properties (buildings and building contents) are charged \$0.73 for every \$100 of insured indemnity value, to a limit of the property's indemnity value
- Insured private houses are also charged \$0.73 per \$100 of insured indemnity value; however the maximum payment is \$73 a year (or up to \$100,000 of insured value)
- Insured personal contents are also charged \$0.73 per \$100 of insured indemnity value; however the maximum payment is \$14.60 (or up to \$20,000 of insured value)
- Insured motor vehicles (excluding those vehicles that only have third party insurance) weighing less than 3.5 tonnes pay a flat fee of \$5.84.

This system is reasonably administratively efficient, as it leverages current insurance premium collection systems—since the point of obligation is a small number of insurance companies with established systems, there are relatively low compliance costs.

However, the current system does not meet any of the four criteria of economic efficiency listed above. In an economically efficient system, everyone who benefits from the NZFS should contribute to funding the service, by paying the costs they currently impose in relation to the risk of fire. In other words, all the circles in Figure 3.1 would be the same size.

**Figure 3.1: The Current Funding System is Economically Inefficient**

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### 3.1 Not everyone who benefits from the NZFS contributes to its funding

There are two groups of people who currently benefit from fire services without contributing to the funding of the NZFS:

- **Those within the targeted house, contents and car insurance funding base who are underinsured or uninsured.** 6.8 percent of New Zealanders who own cars have no car insurance, another 13 percent only have third party cover.<sup>1</sup> 78 percent of New Zealand's commercial buildings are underinsured<sup>2</sup>. Owners of property portfolios can insure up to the value of their most expensive property on the assumption that they are unlikely to ever claim for more than one property ("first loss" insurance)
- **Those outside the targeted insurance funding base.** The current funding base only targets house, contents and car insurance. However the role of firefighters has extended beyond traditional firefighting and into areas that have effects beyond property and car owners. For example, firefighters help with urban search and rescue and with civil defence roles outside of people's homes and cars, including maintaining public services and rescuing people from floods. Firefighters attend hazardous emergencies that affect our environment and our safety outside of our homes and our cars.

### 3.2 Not everyone who contributes to NZFS funding pays the costs they currently impose

A 1996 study found that under the current levy system, those who are levied do not necessarily contribute in proportion to the fire risks they pose (see Figure 3.2).<sup>3</sup>

The costs of protecting commercial building owners each year made up 55 percent of the NZFS total cost, yet commercial building owners only contributed 40 percent of the NZFS total funding needs. Motor vehicles also contribute less to funding than they contribute to fire service costs. Domestic homes cover all their costs and the remaining costs from commercial building owners and motor vehicles.

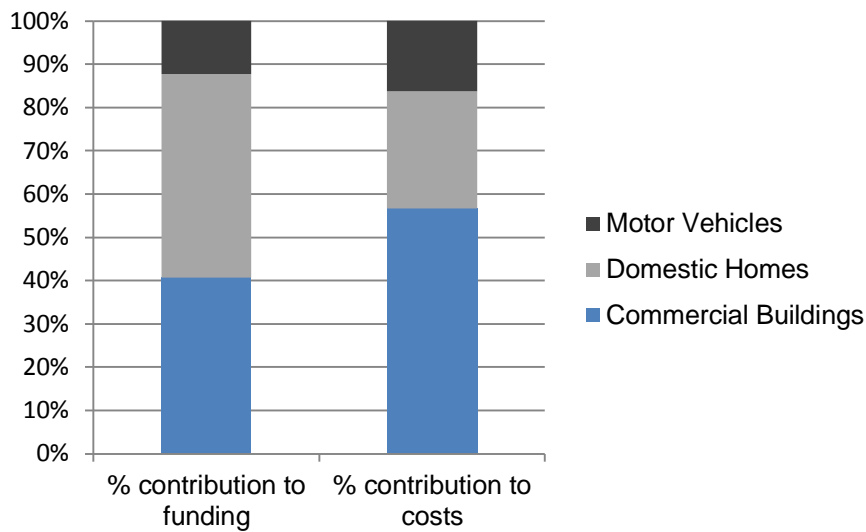
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<sup>1</sup> [http://www.transport.govt.nz/ourwork/Land/Documents/Vehicle\\_insurance\\_in\\_New\\_Zealand.pdf](http://www.transport.govt.nz/ourwork/Land/Documents/Vehicle_insurance_in_New_Zealand.pdf)

<sup>2</sup> <http://www.icnz.org.nz/downloads/seminar08-pryde.pdf>

<sup>3</sup> Coopers and Lybrand (1996) *Property Based Funding Scheme for the New Zealand Fire Service*, New Zealand Fire Service, Insurance Council of New Zealand, and Valuation New Zealand

**Figure 3.2: Fire Service Levy and Cost Contributions (1996 data)**



Source: Coopers and Lybrand (1996) *Property Based Funding Scheme for the New Zealand Fire Service*, New Zealand Fire Service, Insurance Council of New Zealand, and Valuation New Zealand

We have not updated this information, but there is likely to still be a disparity in benefits and costs. This is because:

- Using indemnity value rather than replacement value for building insurance, meaning some commercial buildings are effectively underinsured
- Excluding car owners who only have third-party insurance but who share roads with other users. Road users with only third-party insurance are likely to have older and less valuable cars, which may be more likely to require emergency assistance (e.g. for safe extrication of occupants) in the event of a crash than newer, safer cars that are fully insured, and
- The cap on insured value means that a \$1,000,000 house pays the same insurance levy (\$73) as house that is insured at \$100,000—despite the million dollar home likely being larger, more valuable, and potentially in a harder-to-reach location than the \$100,000 home (and thus posing a large cost of delivering fire services).

### **3.3 Current cost recovery does not incentivise fire service users to reduce fire risks**

Even if the owner of an old wooden house is fully insured and pays fully in proportion to their current fire risk or potential for property loss, they may have weak incentives to reduce that risk further. There is no mechanism in the current fire service levy to ensure individuals' incentives are based on the relative risks they pose and the likely costs of responding to fires.

There are a number of measures to decrease risk to a wooden house, including installing smoke alarms, sprinkler systems or replacing internal jibbing with fire retardant plaster board when refurbishing. Many of these actions can result in lower premiums if notified and proven to insurance companies' satisfaction, just as a car ordinarily stored in a garage can attract an insurance discount to an identical car parked on a street.

### 3.4 It is likely that the current system distorts insurance behaviour

Levying the fire service charge on insurance increases the price of insurance. When prices increase, some people may be less likely to buy insurance, or are less likely to fully insure their home, contents or car.

Studies in Australia show that a fire service levy on insurance reduces the rate of insurance—certain parts of Australia removed fire service levies on insurance and observed an increase in the rate of insurance. A Working Paper by Australian National University in 2008 estimated that removing the fire service levy would result in a 70 percent reduction in uninsured households in New South Wales, and a 50 percent reduction in the number of uninsured households in Victoria.<sup>4</sup>

Previous reports into NZFS funding models have identified distorted insurance behaviour as one of the main problems with the current funding model. For example, in a submission on “New Fire Legislation” proposed by the Department of Internal Affairs in 2006, the Insurance Council said that it “could not support the newly proposed Fire and Rescue Service funding system that would see continued taxation on insurance policies, which negatively impacts on the affordability and take-up of insurance in New Zealand”. For more details on this review, see **Error! Reference source not found.**

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<sup>4</sup> Barker and Tooth (2008) *Insurance Law and Economics: An Analysis of the Demand for House and Contents Insurance in Australia*, ANU Centre for Law and Economics, Working Paper No. 1, available online at: [http://law.anu.edu.au/cle/Papers/Insurance\\_Demand\\_Home&Contents\\_Fina.pdf](http://law.anu.edu.au/cle/Papers/Insurance_Demand_Home&Contents_Fina.pdf) (last accessed 30 March 2012).

## 4 Potential Improvements to the Funding Model

There is a general consensus that the current funding model is flawed, and several suggestions of potential changes that would improve economic efficiency with little loss in administrative efficiency (see Appendix A on past studies on the New Zealand fire funding model).

There is also consensus on the need to move away from an insurance-based model and the need to levy a compulsory charge on all motor vehicle owners—the major feedback from a Department of Internal Affairs report on Fire Legislation in 2007.

The most economically efficient funding model would be to impose a levy on all home owners and motor vehicle owners. The most administratively efficient way to collect these payments would leverage existing levy collection systems with broad coverage—for instance local council property rates and vehicle registrations.

Table 4.1 explains how each of the four facets of economic efficiency could be improved under this system, for little loss in administrative efficiency.

**Table 4.1: Potential Changes that Might Improve the Current Funding System**

Gain in Economic Efficiency	Potential Change	Loss in Administrative Efficiency
The payment system should not distort price signals in other markets	A levy could be paid directly by beneficiaries (home and motor vehicle owners) through residential rates and car registrations.	Could leverage NZTA vehicle registrations and local council rates systems, meaning little administrative burden after a potentially expensive transition.
Everyone who benefits from the service should pay	The largest group of beneficiaries who currently do not pay is uninsured property owners. To overcome this, the fire service could be funded through all property owners and car owners, not just <i>insured</i> property owners and car owners.	Could leverage NZTA vehicle registrations and local council rates systems, meaning little administrative burden after a potentially expensive transition.
Everyone should pay in proportion to the costs and risks they impose	<p>If the insurance-based funding system is retained, three loopholes could be closed:</p> <ul style="list-style-type: none"> <li>▪ The cap on insured value could be revised upwards</li> <li>▪ Use of indemnity value could be changed to replacement value</li> <li>▪ Property portfolio owners could be refused the ability to use ‘first loss’ insurance strategies to avoid the fire service levy</li> </ul> <p>If the insurance-based model was retained, the need for levy caps should at least be reviewed, as well as the method for determining property values and dealing with larger property portfolios.</p>	Closing loopholes would require careful research with updated information, but would incur little administrative costs after transition.
Incentives for risk reduction should remain or be strengthened	<p>Careful analysis would be needed to determine which fire risk reduction measures would be practical to administer:</p> <ul style="list-style-type: none"> <li>▪ How can working sprinklers and use of fire retardant materials be verified in a cost effective manner?</li> <li>▪ Can a large enough levy discount be formulated to give homeowners an incentive to invest in more risk reducing measures?</li> </ul>	

Several stakeholders have been pushing for a property-based funding system for many years (see **Error! Reference source not found.**). Such a system would overcome many problems in the current funding model, increasing economic efficiency, with little cost to administrative efficiency. A property-based funding system would be more stable, fairer, more efficient and less distortionary than the current insurance-based system. Four Australian States have largely replaced fire insurance levies with property-based levies in the past 25 years.<sup>5</sup>

A transition away from an insurance-based system to a more efficient system is likely to require:

- Calculating appropriate charges for homeowners, motor vehicle owners and commercial building owners. This means deciding whether the charges should be a set percentage of residential rates for property, and a set proportion of the licencing fee for motor vehicles; or whether a separate calculation that is more closely related to the fire risk is needed.
- Designing an efficient payment collection system to leverage local Councils' rates systems and the New Zealand Transport Agency's vehicle registration system

If not done efficiently and fairly, this transition could provoke opposition from local authorities already tasked with recovering costs for other publicly provided services via rates. Alternatively, leveraging the rate collection mechanism could open the NZFS's national-level resourcing decisions to scrutiny, for instance if local-body politicians seek democratic mandates to demand greater firefighting effort in their regions.

Nevertheless, it appears that very few interested parties support the current funding model. Australian states have been moving towards property-based funding systems, and domestically there is a lot of support for this move. Moving to a system where all home owners contribute via their residential rates, and where all car owners contribute through their vehicle registration is fairer, more efficient, and less distortionary than retaining a widely discredited insurance-based funding model.

It is possible that limited funding has constrained the NZFS's ability or willingness to remunerate firefighters. If true, reform of the funding model provides an opportunity to increase overall levels of funding and put it on a more sustainable footing.

For efficiency purposes, such a change would also establish a closer link between:

- a) The economic value created by firefighters (particularly in terms of preventing property damage from fire), and
- b) The funding received from beneficiaries of fire services.

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<sup>5</sup> Victorian Bushfires Royal Commission (2009) *The Fire Service Levy and Insurance: Discussion Paper*, available online at: <http://www.royalcommission.vic.gov.au/Discussion-Paper> (last accessed 30 March 2012).

## Appendix A: Previous Studies of Fire Funding Models

Prior to 1975, the New Zealand Fire Service (NZFS) was funded through a mix of tax payer funding, insurance companies and local authorities. The Fire Service Act 1975 introduced an insurance levy to fund fire services.

There have been a number of important studies into the NZFS funding model. The two major reviews were:

- **“Property Based Funding Scheme for the New Zealand Fire Service” (1996).** Twenty years after the insurance levy was first introduced, sector stakeholders including the Insurance Council of New Zealand, Valuation New Zealand and the NZFS commissioned consulting firm, Coopers & Lybrand to examine the problems with the insurance-based levy, and the benefits of a property-based funding scheme.
- **“New Fire Legislation – A framework for New Zealand’s fire and rescue services and their funding” (2007).** In 2004 the Ministry of Internal Affairs began a review of fire service legislation, including the funding model. This review and consultation process culminated in a 2007 proposal for a new funding model that was not well reviewed in the consultation process.

### 1996 Proposal for a Property Based Funding Scheme for the New Zealand Fire Service

By the mid-1990s, various stakeholders were starting to question the logic of an insurance-based funding system. In 1995 both the Business Round Table and the Insurance Council of New Zealand released reports that were critical of the insurance-based scheme. The following year, a group of stakeholders including the NZFS, the Insurance Council, and Valuation New Zealand commissioned a report by Coopers & Lybrand to diagnose problems with the insurance-based funding system and recommend changes.

Specifically, the report presented the merits of moving from the insurance-based system to a property-based system: instead of only insured homeowners contributing to the fire service, all property owners would contribute. The report recommended four main changes to the funding system:

- A compulsory charge on all property owners
- Charges for various categories of customer, bearing some relationship to the cost of service provision (on a collective basis) and including a discount for preventative measures (on an individual basis)
- Levying the charge directly using an established and transparent billing and collection system
- A compulsory charge attached to motor vehicle registrations, or possibly collected as part of a fuel tax

The report highlighted seven main advantages of this alternative funding system:

- Greater equity through a broadening of the revenue base
- Great transparency of costs to the customers of the NZFS
- A closer alignment of charges, costs and service delivery

- Charges difficult to be legally avoided, as they can be at present by not or underinsuring
- Charges attach to property structures which represent a range of risks and services received, rather than fire insurance which has ‘moral hazard’ incentive problems
- Increased and more economically-aligned incentives for customers to invest in suppression and prevention technology, and
- Greater accountability on the NZFS via a direct relationship with customers.

**2007: “New Fire Legislation – A framework for New Zealand’s fire and rescue services and their funding”**

In 2004, eight years after the release of the Coopers and Lybrand report recommending the replacement of the insurance-based funding system with a property-based system, the Department of Internal Affairs commenced a formal review. This aimed to ensure:

- Firefighters had a mandate to carry out the work they currently perform, and
- A property-based system would be used to fund fire and rescue services.

The 2005 elections interrupted the review process and resulted in a new consultation process in 2006. The subsequent discussion document no longer offered a property-based funding scheme, but instead proposed new legislation retaining an insurance-based funding model—but with a broadened base. The three major changes were:

- Replacing insured indemnity value with insurance *replacement* value
- Including previously exempted assets such as hydro dams and public buildings, and
- Replacing the car insurance levy with a levy on all private motor vehicles levied at car registration.

The first two changes were widely rejected by stakeholders, with submissions claiming that the changes would cost local governments, schools, churches, business owners and the insurance industry a lot of money.

There was wide support for making the car levy compulsory by collecting payment at the point of car registration. The other two points of consensus amongst stakeholders were that the funding system should create incentives for fire prevention, and that the system needed to ensure that uninsured homeowners paid their share of fire service funding.

The Department of Internal Affairs report on the submissions concluded that:

*Submitters overwhelmingly rejected the proposed funding model... the major reasons for rejecting the proposed model were that it was inequitable, that it would reduce desirable insurance practices, that it would increase levy avoidance behaviors, and that it would distort the competitiveness of New Zealand-based businesses. Many submitters, particularly government trading enterprises and large private sector companies, noted that they would be negatively affected by substantially increased levies, by the removal of loopholes and exemptions for infrastructure assets, and by other measures to widen the insurance funding base.*

The proposals were not agreed to by the Government and there has been no significant action on the funding of the NZFS since 2007. The New Zealand Fire Service Act 1975 is still in force.



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