

# Funding Regime for Fire & Emergency New Zealand

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## A Best-Practice Review

**A report prepared for Property Council New Zealand**

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# 1 Summary

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Fire and Emergency New Zealand (FENZ) amalgamates fire and emergency services in New Zealand into one enterprise. The amalgamation brings all rural and urban fire services together and merges back-office operations and funding sources.

This report focuses on the funding regime for FENZ. Funding for FENZ's predecessor, the New Zealand Fire Service, was based on the value of households' and corporates' insurance cover for fire damage. The levy was collected through insurance payments by property and motor vehicle owners. The insurance levy was capped for residential contracts and not capped for property classed as non-residential. The levy on motor vehicles was a flat fee, which was also charged through insurance.

The funding regime for the newly created FENZ is being implemented in two phases. The first phase is a transition period (which began on 1 July 2017). The transition period involves no change in the insurance base but it does involve a levy increase of approximately 40 percent on property and motor vehicles. Following the transition period (ie, no later than 1 July 2019) the levy base will change from all fire insurance contracts to all insurance contracts covering property for loss or damage (ie, 'all perils' insurance). This change is aimed at providing a more stable source of funding for FENZ and better reflecting the role of the fire service: the fire service has expanded beyond fire prevention and response to non-fire activities such as responding to natural disasters. The base will also change from indemnity value to the sum insured under the insurance contracts.

The legislation establishing FENZ, the Fire and Emergency New Zealand Act 2017, sets out the principles for the funding regime for FENZ. These principles are that the levy be:

- stable;
- universal;
- equitable;
- predictable; and
- flexible.

In our assessment, the proposed funding regime for FENZ is not consistent with the funding principles set forth in the Act. Of the five legislated principles, FENZ's funding regime is wholly or partially consistent with only two of the principles. We find that FENZ's funding regime:

- **provides a somewhat stable source of funding.** However, FENZ's revenue will fluctuate with changes in property values and the regime will incentivise self or under-insurance and the restructuring of insurance policies as parties seek to minimise their levy;
- **is not universal.** The insurance-based levy means those who do not insure do not contribute to FENZ, despite receiving the benefits of FENZ's services. Also, large organisations have greater scope to alter their insurance exposure or completely self-insure. Furthermore, the government does not appear to be paying its fair share. As of 2013, public assets were estimated by the Office of the Auditor-General

to be insured to approximately half their carrying value<sup>1</sup>. It also appears that major public entities like tertiary education institutes and district health boards will have their FENZ levy capped<sup>2</sup> but private enterprises will face an uncapped levy;

- **is not equitable.** The funding regime makes little attempt to identify and charge beneficiaries based on the cost or risks they impose on FENZ. Further, there is no risk or experience rating built into the levy structure. Contrary to the Treasury's principles for cost-recovery by government entities<sup>3</sup>, the funding regime will result in significant cross-subsidisations between different user groups;
- **is not predictable.** The levy base will change with changes in the levied insurance contracts and with fluctuations in property values, which inevitably will lead to rates needing to change. There will also likely be periods of over/under collecting (especially in the short-term) as the regime converges to a more predictable state; and
- **is flexible.** The levies can be adjusted over time without new legislation.

This report considers the funding approaches used by other government agencies in New Zealand and the funding approaches used for fire services in other countries to see if there are lessons that can be applied to the funding regime for FENZ.

We find that significant improvements could be made to the funding regime for FENZ. These improvements include, in particular:

- clearly identifying the types of services FENZ provides, estimating the cost of each main service line and matching the costs incurred in providing that service with the charges to the beneficiaries of the service; and
- charging for FENZ's services to a greater extent on the basis of the expected risk and level of use, especially for non-residential users.

Both changes would result in a funding regime that is more compatible with the funding principles in FENZ's legislation. The fact that both approaches are used in New Zealand (eg by ACC) and by fire services in other countries (eg in Queensland, Washington state and Florida) demonstrate that they are practical and workable.

Best-practice features of the funding regimes used in other countries that could be implemented in New Zealand include:

- charging based on the size of the property, rather than just the value of the property, as the cost of responding to an incident is linked more closely to the size than the value of the property;
- charging based on the cost of the expected level of response, as higher risk properties like chemical plants or petrol stations are more likely to have an incident

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<sup>1</sup> Source: <http://www.oag.govt.nz/2013/insuring-public-assets/docs/insuring-public-assets.pdf>.

<sup>2</sup> Policy approval for Fire and Emergency New Zealand levy regulations, Cabinet Economic Growth and Infrastructure Committee Minute, 2017, [https://www.dia.govt.nz/diawebsite.nsf/Files/FENZ-Cabinet-Paper/\\$file/FENZ-Cabinet-Paper.pdf](https://www.dia.govt.nz/diawebsite.nsf/Files/FENZ-Cabinet-Paper/$file/FENZ-Cabinet-Paper.pdf)

<sup>3</sup> Guidelines for Setting User Charges in the Public Sector, New Zealand Treasury, 2017, <http://www.treasury.govt.nz/publications/guidance/planning/charges/settingcharges-apr17.pdf>

and likely to impose a higher cost on the fire service in the event of an incident;  
and

- incentivising risk mitigation, such as, offering rebates where sprinkler systems and fire alarms are installed.

Implementing a funding regime on the above lines would be more equitable, would encourage better use of FENZ's resources and would encourage people to take precautionary measures and thus help prevent fires and save lives.

In designing a funding regime for FENZ a balance needs to be struck between the accuracy of the price signals provided to users and the complexity of the funding regime. The finding of this report is that the regime proposed for FENZ, while having the advantage of being simple, does not provide price signals to users that reflect the costs they impose on them, and as a result is not universal, equitable or predictable. In particular, the FENZ regime has only two classes of property users, residential and non-residential (whereas the other countries reviewed in this report break-down the non-residential category into multiple different classes based on their risk type); the FENZ regime does not experience rate individual users; there is little contribution from the central government for the public good nature of the services; and there is no attempt to charge individual users for services that are clearly private in nature (eg, false alarm call-outs).

Moving from the over-simplified charging mechanism proposed for FENZ is practical and feasible. However, implementing risk rating and user-experience rating charges would be more complicated under an insurance-based collections system. It would require the insurance companies to collect additional information either at the point of contract with the client or after contracting with the responsible local authority. This information would include indicators of risk and required or likely response, such as property size, property location and property-use type.

User-experience rating is the insurance industry's core business and could be carried out by the industry, but, it would require an investment by the companies and brokers. One of the more complicated aspects of the insurance-based charging regime is the case of portfolio insurance contracts. For portfolio-based insurance contracts the portfolio would need to be disaggregated and charged by and per property. This again complicates the charging as the insurance companies cannot simply rate charge the insurance portfolio. Adding these measures to an insurance-based charging system would be more complicated but is feasible and implementable. The additions to complexity and therefore to the equity of the charging regime as a whole would take investment in the technical infrastructure that insurance companies have for data gathering and standard communication across insurance companies, brokers and clients. This will add expense and time to the implementation of the charging regime.

A feasible and practical alternative is for local authorities to take over the cost-recovery apparatus for FENZ. As detailed in the body of this report, local authorities are responsible for revenue collection for fire services in almost all the jurisdictions<sup>4</sup> examined in the course of this research, and appears to be the world norm.

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<sup>4</sup> With the exemption of New South Wales and Tasmania. Tasmania operates a hybrid system between insurance collections and a rates-based system.



Having the local authorities responsible for cost recovery for fire services simplifies many aspects of the funding and collections system. Local authorities have data on property use, property location and property size for each property under its jurisdiction. They already have a developed charging mechanism that reaches or can reach every property under their jurisdiction (as each authority charges rates). Lastly and importantly, it avoids any difficulties or added complexity with portfolios of assets as charging through local authorities would naturally treat each property as individual regardless of the type of ownership structure.

Consistent with cases identified from the United States, a hybrid system could be developed, with a portion of FENZ being funded through insured value and a portion being funded through rates and property size. Exemptions could be made for some property types such as churches and public land (such as parks) that have public good attributes. In most jurisdictions we examined, such exemptions come in the form of heavily discounted contributions rather than absolute exemptions. We have not identified any jurisdictions with lists of fully exempt property types.

Further information on the best-practice cost-recovery regimes examined in this report is summarised below.

### **New Zealand**

Within New Zealand, the Civil Aviation Authority (CAA) and the Accident Compensation Commission (ACC) provide good examples of funding regimes that could be used as models for FENZ.

The CAA provides a mix of public, club and private services. For cost-recovery purposes, the CAA classifies its activities into five different service lines, estimates the cost of providing each service within each service line and sets its charges so as to minimise cross-subsidisations between the different users and user-groups.

ACC provides a good example of cost-recovery where the payers' need for the service is uncertain. All earners and motor vehicle owner/operators are charged on the basis of the likelihood of their using the ACC's services and by the expected cost imposed on ACC in the event of use.

The first component (likelihood of use) is accounted for through the various industry-specific rates levied on employers (via the work account). Firms contribute to ACC based on the likelihood of injury in the firm's sector, the individual firm's history of workplace safety relative to other firms in the same sector and the expected level of burden placed on the system in the event of an injury. Likewise, motor-vehicle owners pay more if it is deemed that in the event of a crash they are likely to be harmed more and therefore inflict a higher burden on the system.

The second component (cost imposed in the event of use) is taken into account by earners' contributions being tied to their wages. This makes sense because the ACC cover an individual receives in the event of an injury is indexed to his/her earnings (up to a certain cap).

The ACC's funding regime is considered good-practice as its charges are based on the broad risk of use and the cost burden in the event of use, without being unnecessarily complex.

FENZ could, like the CAA, classify its services as public, club or private services, estimate the cost of providing each major service category and set its charges accordingly. FENZ could also move, like the ACC, to more risk-dependent funding by implementing risk ratings. Risk-rating different commercial property types is a practical, equitable and realistic change for FENZ to make (as demonstrated by the use of risk-rating by fire services in other countries as discussed below).

## **Australia**

Many Australian states have adopted funding regimes for fire and emergency services that have direct allowances for risk, likelihood of service and the benefit received in the event of use. South Australia, Western Australia, Queensland and Victoria all differentiate their fire-service charges (to varying degrees) by property type and location.

Queensland provides a good example of a beneficiary-pays system where levies are set on the basis of the response rate and level of response the contributor would receive in the event of an incident. Queensland breaks levy contributors into five broad groups based on the likely service that would be received in the area of the contributor. Areas with 24-hour, seven-day-a-week fire services that employ at least 16 full-time fire fighters contribute the most. Areas that are only covered by auxiliary staff contribute the least. This is sensible because if a fire station is well-staffed and well-equipped then the surrounding properties are the direct beneficiaries of that readiness and should take on a larger funding burden.

Queensland overlays its location-based charge with a property-use factor that reflects the risk of an incident and how costly a response would be if an incident occurred. There are 16 property-use groups aggregated from 160 property types. Thus, a small office, shop or commercial premise (no more than two levels or 51sqm in floor area) located in a well-staffed and well-equipped area contributes \$203 per year. At the other end of the spectrum, large oil or fuel depots (containing high risk materials and requiring a high-level response in the event of an incident) belong to the highest rated property-use group and contribute almost \$400,000 per year.

South Australia (SA) and Western Australia (WA) have funding regimes that are based on property value adjusted for location. Inhabitants of metropolitan areas typically contribute more than those in more remote areas, reflecting the better response likely to be received by metropolitan dwellers. SA and WA also adjust for property type. SA adds an additional rate, with industrial property having the highest rate and special-use properties such as churches having the lowest rate. WA doesn't adjust the overall levy rate but applies minimum and maximum contributions by property type. Victoria also charges based on property value and differentiates levy rates by six property uses and by fire service jurisdiction (with two separate fire-service jurisdictions).

## **Other countries**

Funding regimes for fire and emergency services in other countries provide good insights into practical, implementable and sustainable funding approaches. This report analyses in detail two funding regimes: those for Washington state and Florida.

Washington state allows its municipalities to charge for fire services through a Fire Benefit Charge that can be used to fund up to 60 percent of the fire service total budget. The remaining funding comes from a levy based on property value and from other sources such as donations.

The Fire Benefit Charge is based on:

- the property size (not property value);
- the building category – classified in most cases as commercial, residential, mobile home or apartment complex;
- the expected cost of a response – also classified into property types and in some cases adjusted for the structure’s square footage;
- the hazard level in the event of a required response – reflecting the increased cost involved with responses to high-risk properties such as industrial plants; and
- discounts offered for certain risk-mitigation measures such as sprinkler systems (regardless of the property type).

The aim of the Washington Fire Benefit Charge is to create a stable funding system for fire services. Previously funding was entirely based on property values. During the global financial crisis property values were decreasing and the levy rates were not flexible enough to change with the reassessment of property values. The fire service now has sustainable funding sources that are diversified and are more directly reflective of the cost of the service and the likely response required in the event of an incident.

While administratively more complex, the charging system used in Washington reflects better the work required in the event of an incident. The municipalities in Washington have shown the charging system to be a practical and feasible approach.

The second example presented in detail in this report is Florida, which charges a fire-assessment fee. The fee is based on:

- hazard classification – based on the property type/use and the required response in the event of an incident. Gainesville, FL, for example, has a hazard classification with 97 property types amalgamated into five risk bands;
- property size, measured by square footage; and
- historical demand – for example, Lake City, Florida estimates the expected operating expenditure for its fire service. It then charges the expected beneficiaries based on recent historical demand by property type (classified into 6 categories: single-family residential, multi-family residential, hotels, commercial property, industrial property/warehousing and vacant land).

As in Washington state, municipalities in Florida emphasise property size and not just property value, thus aligning the fees more closely to the cost of the response. Florida also presents another example of charges being differentiated by property use according to the risk and therefore likely burden imposed on the fire service (consistent with cost-recovery principles). Further, certain jurisdictions within Florida rely heavily on data-driven charging. Data is collected on response types and costs are allocated to the services, thus indicating which property types are the cost exacerbators and which beneficiaries should be charged accordingly.

Other similar funding approaches are used in California and South Carolina - albeit with simpler funding regimes than those above (the regimes charges are based on building category and property size).

This report also examines the Danish fire-service and highlights the efficiencies that can be gained through direct contracting. The report also briefly considers the fire-service funding approaches seen in England, United States, Canada, Singapore, France, Italy and Brazil.

The examples presented in this report show that a more equitable and universal funding mechanism is available for FENZ. FENZ could better differentiate between contributors based on observable risk and the costs they impose on FENZ. FENZ could also use different charging systems in tandem. For example, it could base its levies on property size - as a proxy for the expected response cost in the event of an incident - as well as basing the levy on response data to identify historical cost exacerbators.

## 2 Introduction

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TDB Advisory Ltd. (TDB) has been engaged by a consortium led by The Property Council NZ to conduct an independent review of the funding regime for FENZ. The members of the consortium are:

- AMP Capital Investors Limited;
- Argosy Property Limited;
- Foodstuffs (NZ) Limited;
- Goodman Property Services (NZ) Limited;
- Kiwi Property Group Limited;
- NZ Airports Limited;
- Property Council New Zealand;
- Property for Industry Limited; and
- Todd Properties Limited.

This report continues with Section 3 outlining the structure and the change that has occurred to create Fire and Emergency New Zealand (FENZ). Section 4 presents the legislated principles that the funding regime for FENZ must follow and Section 5 analyses FENZ's funding regime against its legislated principles. Section 6 then outlines examples of funding schemes in New Zealand. Section 7 looks in detail at the funding approaches of fire services in Australia and Section 8 presents cases of funding approaches across the rest of the world. Finally, Section 9 summarises the overall lessons for FENZ.

### 3 Background on Fire and Emergency New Zealand

Fire and Emergency New Zealand (FENZ) is the newly created national provider of fire and emergency services in New Zealand.

FENZ was created to amalgamate the previous New Zealand Fire Service (NZFS), National Rural Fire Authority (NRFA), 12 enlarged rural fire districts and 26 territorial authority rural fire authorities<sup>5</sup>. The amalgamation came into force on 1 July 2017 and will be rolled out through a transition phase before full funding changes come into effect, currently set to be on 1 July 2019.

Figure 1 below presents the governance structure of the fire service in New Zealand prior to the amalgamation<sup>6</sup>.

**Figure 1: Pre-amalgamation governance structure of fire services in NZ**

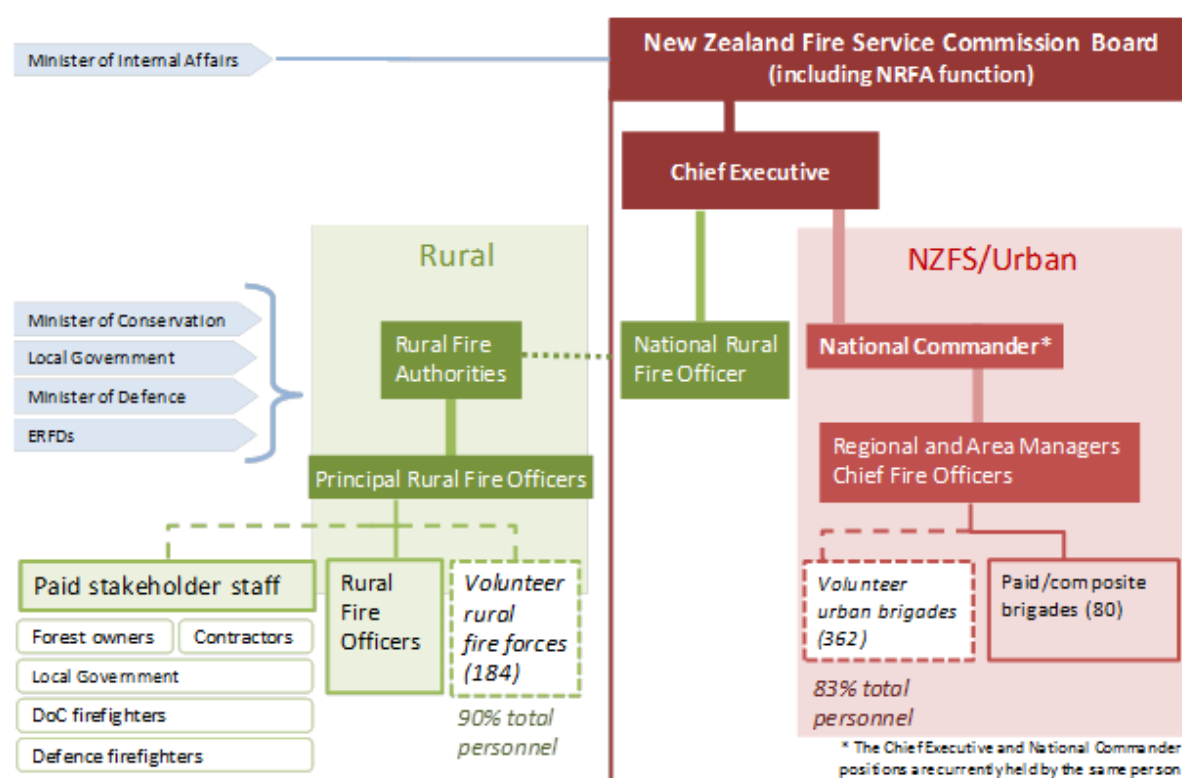


Figure 1 shows the split in governance structure that existed between the urban and rural fire service providers. The New Zealand Fire Service Commission (the Commission) governed the urban fire services and reported to the Minister of Internal Affairs. The urban service (operated by the NZFS) included 442 fire brigades and 83 percent of its personnel were volunteer.

The rural services under the former regime had a complex structure that was operated by the Rural Fire Authorities (RFAs) and key stakeholders involved in managing vegetation

<sup>5</sup> Source: <http://fenzproject.co.nz/>.

<sup>6</sup> Source: [https://www.dia.govt.nz/vwluResources/FSR-Background-Rural-Fire-report/\\$file/FSR-Background-Rural-Fire-report.pdf](https://www.dia.govt.nz/vwluResources/FSR-Background-Rural-Fire-report/$file/FSR-Background-Rural-Fire-report.pdf).

risk in the rural environment. Such stakeholders included the Department of Conservation (DoC), Department of Defence (DoD), affected local authorities and some private companies such as commercial forestry organisations. The RFAs reported to a range of different authorities, included 184 rural fire forces and 90 percent of the rural forces personnel were volunteers.

The Commission did not have direct national operational responsibility for the rural fire sector, however, the Commission was also the National Rural Fire Authority that had responsibility for the coordination of rural fire management, setting operational standards and auditing the compliance of the RFAs (that also included Enlarged Rural Fire Districts – ERFDs).

Prior to the amalgamation, the fire-services sector had in total 11,600 volunteer firefighters and 1,780 career firefighters<sup>7</sup>.

Major issues with the former governance regime and funding approach were identified as:

- the changing environment for fire services which now respond to a range of incidents, not just fires (non-fire activities take up about 60 percent of Fire Service time and are estimated to account for 26 percent of the total cost of the NZFS8);
- a lack of coordination between urban and rural fire services;
- under-investment in the rural sector and in support for volunteer firefighters (both urban and rural); and
- operational issues arising from differences in the cultures of rural and urban firefighters, and of paid and volunteer firefighters.

The amalgamation was aimed at uniting fire-emergency services in New Zealand into one structure.

The costs of the new amalgamated FENZ are estimated to total around \$542m for the 2017/2018 year<sup>9</sup>. This cost estimate is comprised of forecast operating and capital expense of approximately \$418m for the NZFS and the NRFA, \$48m of new and ongoing support for rural and volunteer support, approximately \$29m in operating expenses for the current rural fire service activities<sup>10</sup>, a \$38m cost of transition to form FENZ and a \$9m repayment to central government as an instalment for a loan taken on by FENZ for the transition costs (discussed in further detail below).

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<sup>7</sup> Source: [http://www.firelevy.co.nz/Resources/Fire\\_Levy\\_Consultation\\_Document.pdf](http://www.firelevy.co.nz/Resources/Fire_Levy_Consultation_Document.pdf).

<sup>8</sup> Source: [https://www.dia.govt.nz/pubforms.nsf/URL/NZ-Fire-Service-Snapshot-Report-for-DIA-Final.pdf/\\$file/NZ-Fire-Service-Snapshot-Report-for-DIA-Final.pdf](https://www.dia.govt.nz/pubforms.nsf/URL/NZ-Fire-Service-Snapshot-Report-for-DIA-Final.pdf/$file/NZ-Fire-Service-Snapshot-Report-for-DIA-Final.pdf).

<sup>9</sup> Source: [http://www.firelevy.co.nz/Resources/Fire\\_Levy\\_Consultation\\_Document.pdf](http://www.firelevy.co.nz/Resources/Fire_Levy_Consultation_Document.pdf).

<sup>10</sup> Source: <http://fenzproject.co.nz/wp-content/uploads/2017/04/Factsheet-rural-costs-updated-10-April-2017.pdf>.

## 4 Legislated principles for funding FENZ

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When designing a funding regime for a Crown Entity like FENZ, there are a number of conventional steps and principles that are expected to be followed. These steps and principles are based on the standard principles of public economics and the Treasury's guidelines for setting charges in the public sector<sup>11</sup>. The standard steps to be followed are summarised below.

1. Define the main goods and services that the entity provides.
2. Determine the nature of the goods and services that are being provided: ie, assess the extent to which the goods and services are "Public", "Club" or "Private" in nature, where:
  - a. public goods and services should be funded through general taxation;
  - b. club goods and services should be funded by the group of users belonging to the particular "club" or group; and
  - c. private goods and services should be funded by the individual user or users who uses the good or service.
3. Determine the cost of delivering each major category of goods and services:
  - a. direct costs should be allocated to the good or service they are associated with; and
  - b. indirect or joint costs should be allocated across the multiple outputs of the entity according to the best available proxy of the driver(s) of the costs.
4. For the "Club" and "Private" goods and services, identify the exacerbators (those who impose the cost on the Crown Entity) and beneficiaries and determine the charges that they should face based on their level of use or expected level of use of the good or service.
5. Follow a transparent, consultative process. The process should provide transparency in the costs and charges the entity sets and provide genuine consultation on the charges the users face.

Clause 80 of the Fire and Emergency New Zealand Act, 2017 ("the Act") provides the five principles underlying the levy regime for FENZ. The clause states that the purpose of the relevant part of the Act (Part 3) is to provide a levy that is:

- a **stable** source of funding to support FENZ in the performance of functions and duties and in the exercise of powers under the FENZ legislation;
- **universal**, so that FENZ's costs are generally shared among all who benefit from the potential to use FENZ's services;
- **equitable**, so that policyholders should generally pay a levy at a level commensurate with their use of, or benefit from the potential to use, FENZ's

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<sup>11</sup> The New Zealand Treasury <http://www.treasury.govt.nz/publications/guidance/planning/charges>



services and with the risks associated with the activities that policyholders carry out (but without strict apportionment according to use, benefit, or risk having to be observed);

- **predictable**, so that policyholders and levy payers are able to predict the amounts that they will need to pay and FENZ is able to predict how much levy income it will receive; and
- **flexible**, so that the levy can adapt to changes in the use, benefit, or risk associated with those who benefit from the potential to use FENZ's services; variations in FENZ's costs; and changes to the expectations of the Crown and the strategic needs of FENZ.

These FENZ-specific funding objectives are in our view fully compatible with the standard principles of public economics and the Treasury's guidelines for setting charges in the public sector. We use the five principles in the Act for the analysis throughout this report.

## 5 FENZ's proposed funding regime

### 5.1 Introduction

As noted above, FENZ has significant costs to cover on an annual and ongoing basis. Under the Act, FENZ will raise funding primarily by levying property and motor-vehicle owners as well as receiving some small amount of funding from central government.

Figure 2 below outlines the funding sources for the predecessor organisations to FENZ: the Commission (including NZFS and NRFA) and rural fire services<sup>12</sup>.

**Figure 2: Funding structure of fire services in NZ prior to amalgamation**

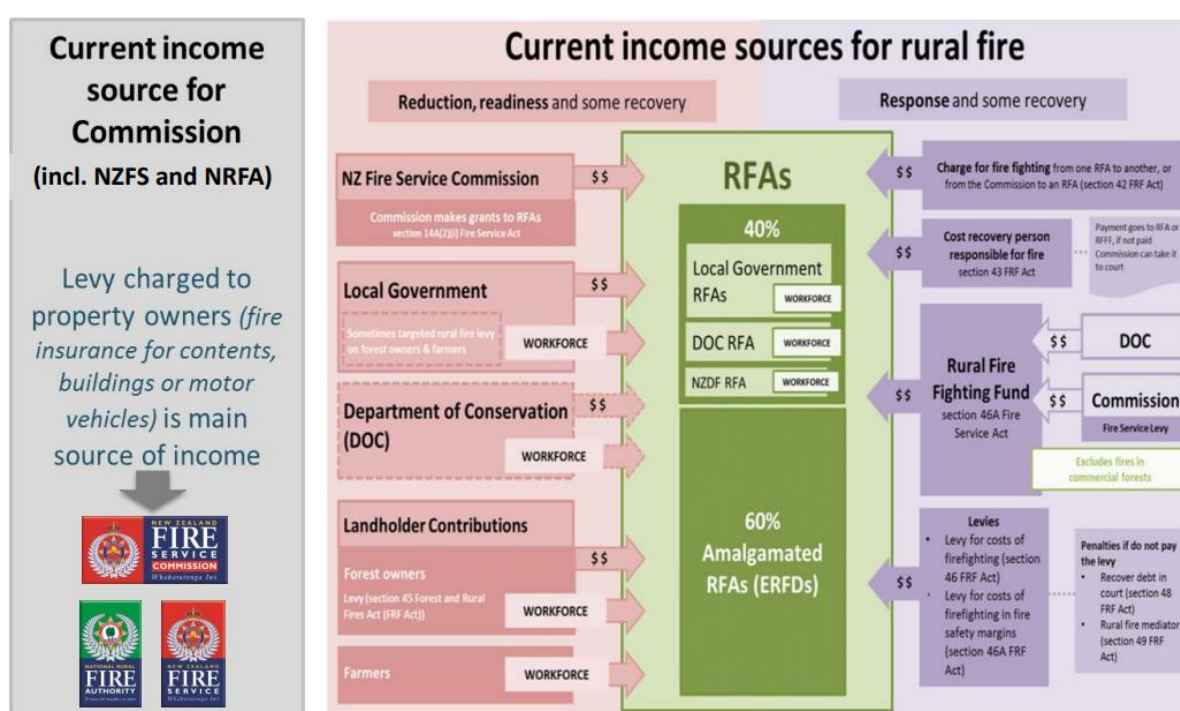


Figure 2 above shows the funding structure of the Commission (prior to amalgamation) was designed so that funds were raised broadly through a levy on property and vehicle owners through insurance contracts. The insurance levy on property was charged at a rate relative to the indemnity value of the insured fire damage for that property.

Rural fire services on the other hand were funded separately across two functions: (1) reduction and readiness, and (2) response. The key contributors to rural fire funding were local government, the Commission, DoC and DoD. Other contributors included forest owners, farmers and direct end users that contributed on a user-pays basis for services rendered.

<sup>12</sup> Sourced from a 2016 presentation by Hon Paul Swain - the Board Chair of the NZFS Commission <http://fenzproject.co.nz/wp-content/uploads/2016/11/NZPFU-Paul-Swain.pdf>.

The previous funding system has been changed with the creation of FENZ by removing most of the rural funding mechanisms (to our understanding, with the exception of contributions from DoC and the DoD). Almost all of FENZ’s funding now derives from the insurance levies on property and motor vehicles. That is, levies are charged on property owners based on the value of their property insured for fire damage and on motor vehicle owners based on a flat fee on vehicle insurance contracts.

The levy rate has been increased to cover the increased costs associated with the transition period as well as the inclusion of rural fire services into the same funding pool (estimated at just \$35m annual cost) and increased investment in portions of the fire service and rural fire service that have been underfunded in recent times according to FENZ<sup>13</sup>. The transition period is set to end on 1 July 2020<sup>14</sup>, with post-transition changes to the funding mechanism due to be implemented no earlier than 1 July 2018 and no later than 1 July 2019<sup>15</sup>.

The key changes to the regime following the transition period are:

- broadening the asset base from which the insurance-based levies are calculated: from contracts for fire insurance to any contracts insuring property against damage or loss (‘all perils’ insurance); and
- changing the base of the calculation from ‘indemnity value’ to ‘amount insured’. ‘Indemnity value’ is the value of the property (or asset) at the time of damage calculated on a depreciated replacement cost basis. ‘Amount insured’ is the maximum value the insurer will pay out in the event of property damage.

Table 1 below summarises the charges that applied under the previous regime, the charges that will apply during the transition period and the charges that will apply after the transition period.

**Table 1: Summary of FENZ’s levy charges**

|   | Residential property   | Non-residential property  | Motor vehicles  |
|---|--|---|---|
| <b>Previous regime</b>                    | 7.60 cents per \$100 p.a of insured value (capped at \$100,000 value for residential buildings and \$20,000 for contents – i.e. max fee \$76 p.a and \$15.20 p.a). | 7.60 cents per \$100 p.a per value of fire-insured indemnity value. No cap on value.  | \$6.08 p.a. flat fee. Vehicles over 3.5 tonne are deemed commercial property. |
| <b>Transition period (July 2017-2019)</b> | 10.60 cents per \$100 p.a of insured value (same value caps – max fee \$106 and \$21.20).  | 10.60 cents per \$100 p.a of fire-insured indemnity value. No cap on value.   | \$8.45 p.a. flat fee.   |
| <b>Post-transition (from 1 July 2019)</b> | Levy rate and cap (if any) to be confirmed, charged on all insurance contracts for property loss or damage, based on amount insured not indemnity value            | Levy rate and cap (if any) to be confirmed, charged on all insurance contracts for property loss or damage, based on amount insured not indemnity value | To be confirmed   |

<sup>13</sup> Source: <http://www.mkrfra.com/uploads/pdf/Governance%20Docs/Leaders%20pack%20-%20FENZ%20Project%20-%20full%20slide%20deck%2026092016.pdf>

<sup>14</sup> Source: <http://fenzproject.co.nz/wp-content/uploads/2017/06/Fire-and-Emergency-NZ-Integration-Blueprint-Summary-for-publication-v4.pdf>.

<sup>15</sup> P. 6 FENZ Discussion Document, *Proposals for Fire and Emergency NZ regulations: Transitional levy relief and Calculation of levy on insurance covering different property types*. March 2017.

Table 1 above shows that under the previous system residential and non-residential property owners were charged at an annual rate of 7.60 cents per \$100 of insured assets. The value of leviable assets for residential owners was capped at \$100,000 for property and \$20,000 for contents. This resulted in maximum annual contributions of \$76 for property and approximately \$15 for contents. There was no cap on the value of leviable assets for non-residential property owners.

During the transition period (from 1 July 2017), the levy rates have increased to 10.60 cents per \$100 of insured value. For residential property owners, the same caps on leviable assets value as above apply, resulting in maximum contributions of \$106 and \$21 p.a. for property and contents insurance respectively. There is, again, no cap on the value of leviable assets for commercial property owners. The transition levies are still calculated on a base of the indemnity value of assets insured for fire damage.

With the asset base to be broadened post the transition to include all insurance contracts (not just fire insurance) and with assets to be valued on an 'amount insured' (instead of 'indemnity value'), there is considerable uncertainty about the levy rates that will apply post-transition.

The FENZ Transition project has proposed temporary relief for owners of large commercial properties (that are liable for over \$100,000 p.a. in levy contributions) who face increases in levy contributions of over 300 percent during the transition period. The level, phasing and duration of any relief is yet to be determined.

FENZ will also receive a repayable Crown injection of up to \$112m over the four-year transition period, as well as Crown public-good funding of approximately \$10m p.a. (for the 2017/18 year<sup>16</sup>) to cover the cost of responding to incidents not involving property or motor vehicles<sup>17</sup>. Following the transition, there will be some Crown funding for FENZ's public-good activities, although the level of the contribution is yet to be determined.

Mixed-use properties (such as a building that contains apartments and office space) pay 10.6 cents per \$100 of fire-insured indemnity value on the residential component of the building (capped at \$200,000 – an increase on the \$100,000 cap for single-use properties) and 10.6 cents per \$100 of fire-insured indemnity value (uncapped) on the commercial component of the building.

Motor vehicles (up to 3.5 tonnes) with fire insurance were levied at a flat rate of \$6.08 p.a. prior to the establishment of FENZ. With the establishment of FENZ, that rate has gone up to \$8.45 p.a. The rate to apply post-the transition period yet to be determined. Vehicles of 3.5 tonnes or more are classified as commercial property and levied accordingly. The levy on motor vehicle insurance will be extended to include third-party insurance.

## 5.2 Estimated cost of the NZFS by service

A 2014 report by consulting firm Martin Jenkins, commissioned by the Department of Internal Affairs (DIA), attempted to allocate the costs incurred by the Fire Service across various incident types. These estimates included an allowance for overhead costs, which

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<sup>16</sup> Source: <http://www.treasury.govt.nz/publications/informationreleases/ris/pdfs/ris-dia-flr-may17.pdf>.

<sup>17</sup> Source: [http://www.firelevy.co.nz/Resources/Fire\\_Levy\\_Consultation\\_Document.pdf](http://www.firelevy.co.nz/Resources/Fire_Levy_Consultation_Document.pdf).

were allocated by time of response<sup>18</sup>. The report utilised 2012-13 fire-response statistics<sup>19</sup> (only for the NZFS and not the rural fire sector) and cost information sourced from the NZFS over the 2011-2012 year. Figure 3 comes directly from the Martin Jenkins report and depicts the overall findings of the study.

**Figure 3: Cost allocation for NZFS, 2012-2013**

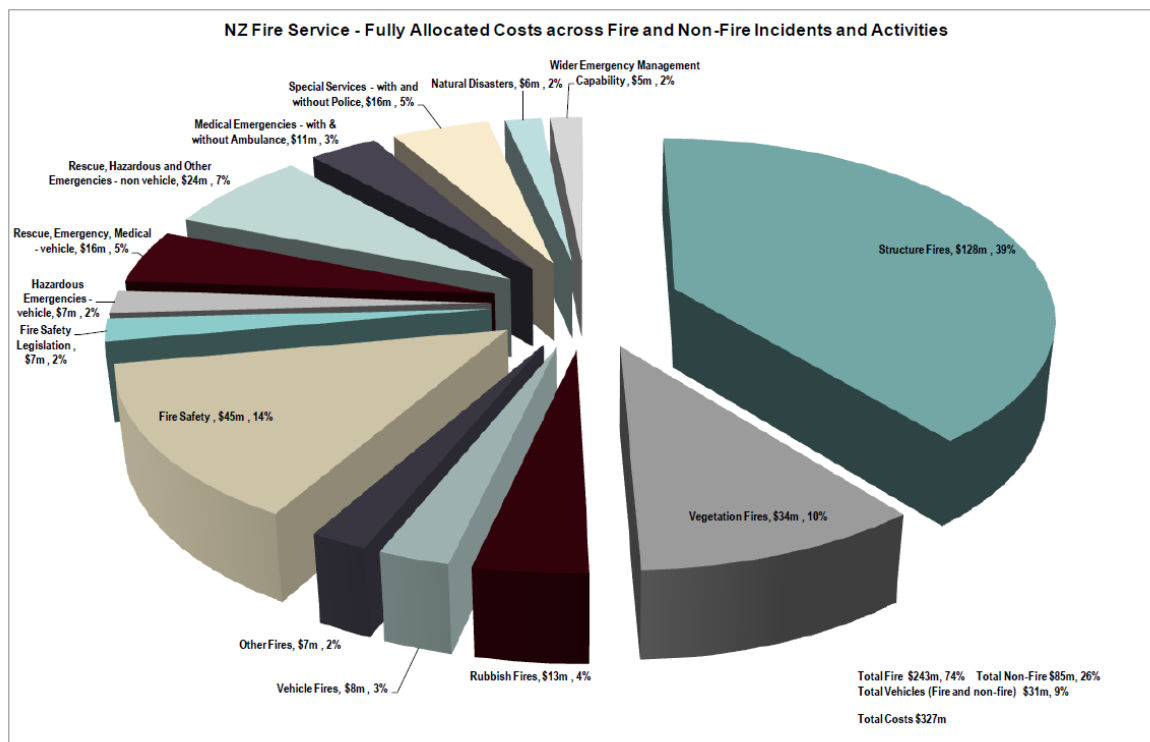


Figure 3 indicates that fire activity represented 74 percent of the total cost incurred by the NZFS and non-fire activity represented 26 percent of the total cost. Responses to vehicles (both fire and non-fire) represented approximately 9 percent of the total cost of the NZFS.

Breaking the costs down more specifically by response type, structure fire responses accounted for around 39 percent of NZFS’s total costs in the 2012-2013 year. Vegetation fires accounted for 10 percent, fire safety accounted for around 14 percent, rescues, hazardous and other emergencies (non-vehicle) responses accounted for 7 percent, and emergency medical-related rescues accounted for 5 percent of the costs. Other responses included special service calls, with and without police (5%), rubbish fires (4%), vehicle fires (3%), vehicle rescues involving hazardous substances (2%), and natural disasters (2%). As noted by the Martin Jenkins report, this is a snap-shot of costs allocated to responses and there was no attempt to build a time-series. Therefore, this snapshot may not be an accurate reflection of ongoing cost allocations.

<sup>18</sup> Source: [https://www.dia.govt.nz/pubforms.nsf/URL/NZ-Fire-Service-Snapshot-Report-for-DIA-Final.pdf/\\$file/NZ-Fire-Service-Snapshot-Report-for-DIA-Final.pdf](https://www.dia.govt.nz/pubforms.nsf/URL/NZ-Fire-Service-Snapshot-Report-for-DIA-Final.pdf/$file/NZ-Fire-Service-Snapshot-Report-for-DIA-Final.pdf).

<sup>19</sup> Sourced from the “Emergency Incident Statistics 2012-2013” The New Zealand Fire Service. Breakdown of other statistics from the response report can be found in Appendix 4.

As part of this report, TDB has broken down the response data presented in the 2012-2013 NZFS statistics report. The results can be found in Appendix 1. Data availability and the scope of this study limits further cost-allocation analysis at this stage.

Martin Jenkins was also commissioned by the NZFS to produce an estimate of the cost of the rural fire service<sup>20</sup>. The analysis was undertaken to get a better estimate of the cost of the new amalgamated FENZ. Martin Jenkins surveyed rural fire authorities to attain a time-series of costs and, at a high level, has estimated that the total cost incurred by the rural fire sector was approximately \$35m (for 2016).

Other analysis has been conducted on the economic impact of fire services to the non-residential sector. In 2012, BERL was commissioned by NZFS to produce a report on the economic cost of fire in New Zealand non-residential buildings<sup>21</sup>. The report provides statistics on the incidence and cost of fires across a variety of non-residential building types, including the following key points:

1. There was a total of 4,299 fire incidents recorded between 2007 and 2011.
2. The highest number of incidents during this period occurred in shops, restaurants and taverns, with 707 fires or 16.4 percent of the total. A quarter of these fire incidents occurred in Auckland.
3. Farm buildings had the second highest number of incidents with 665 fires or 16 percent; followed by fires in miscellaneous buildings, 618 or 14 percent; fires in factories and industrial buildings, 453 or 11 percent; fires in education buildings, 427 or 10 percent; and fires in social, cultural, or religious buildings, 409 or 10 percent.

Table 2 below provides the number of fire incidents by property type over the period 2007-11 from the BERL report.

**Table 2: Fire incidents by commercial property type, 2007-11**

| Non-residential building classification | 2007  | 2008  | 2009 | 2010 | 2011 | Total |
|---|-------|-------|------|------|------|-------|
| Education buildings                     | 114   | 81    | 83   | 96   | 53   | 427   |
| Factories and industrial buildings      | 119   | 116   | 68   | 86   | 64   | 453   |
| Farm buildings                          | 132   | 127   | 121  | 147  | 138  | 665   |
| Hospitals, nursing homes                | 41    | 34    | 18   | 35   | 18   | 146   |
| Hostels, boarding houses                | 33    | 27    | 15   | 35   | 15   | 125   |
| Hotels & other short-term accommodation | 30    | 32    | 16   | 27   | 23   | 128   |
| Miscellaneous buildings                 | 134   | 146   | 98   | 148  | 92   | 618   |
| Offices, administration buildings       | 79    | 85    | 67   | 75   | 64   | 370   |
| Shops, restaurants and taverns          | 165   | 177   | 125  | 129  | 111  | 707   |
| Social, cultural, religious buildings   | 109   | 102   | 60   | 80   | 58   | 409   |
| Storage buildings                       | 61    | 78    | 34   | 44   | 34   | 251   |
| Total                                   | 1,017 | 1,005 | 705  | 902  | 670  | 4,299 |

Source: BERL, Statistics New Zealand

Though the BERL report discusses the average cost of fire damage for each property type, it does not discuss the average cost to NZFS of attending incidents at each given property or property type. It is the cost of servicing the fires that is the relevant factor when looking at what to charge each property for NZFS's services. Despite this, the report illustrates the different levels of historical demand for fire services across different property types,

<sup>20</sup> Source: <http://fenzproject.co.nz/wp-content/uploads/2017/02/MJ-Assessment-of-the-Costs-of-Rural-Fire-Servicing-Final-27-Jan-2017.pdf>.

<sup>21</sup> Source: <https://fireandemergency.nz/assets/Documents/Research-and-reports/Report-126-economic-cost-in-non-residential-buildings.pdf>.



which naturally gives rise to different levels of cost to the fire service. As presented in the BERL report, the NZFS classifies non-residential property into 47 non-residential property types that fit into the 11 general property use categories. Appendix 4 shows the full list of 47 NZFS property classifications.

### 5.3 FENZ's funding regime assessed against the legislated principles

This section of the report provides our initial assessment of the proposed FENZ funding regime against the funding principles set out in the legislation. As noted in section 4 above, the Act requires that the levy should provide a stable funding source for FENZ and should be universal, equitable, predictable and flexible.

#### **Stable**

Insurance contracts provide a relatively stable basis for levy funding of FENZ. Typically, people will purchase insurance due to personal risk aversion. However, while FENZ's funding base is relatively stable, there is a risk that people may free ride and not purchase insurance because purchasing insurance is voluntary rather than mandatory (unlike rates). Therefore, the FENZ funding model has the potential to result in users (who take out insurance) cross-subsidising others who do not take out insurance yet still benefit from FENZ services. This is not likely to be major issue for residential users (given the low levels at which the levy is capped) but could well be an issue for commercial property owners who face potentially face very large (and uncapped) fees.

Large companies may have the flexibility to significantly alter their insurance cover and contracts. The institutions or organisations that have most ability and incentive to avoid the levy will likely be the ones that have large levied asset bases. This ability to alter the base provides a risk to the stability of FENZ's funding as companies adjust to the change in the funding structure. Over the medium to long-term the base may stabilise but fully-insured levy payers are likely to face a higher rate as the larger corporates reduce their coverage or opt out of insurance altogether.

Another important consideration, as noted by DIA<sup>22</sup>, is that central government under-insures its assets. The government can under-insure because it has the size and the ownership structure of assets that allows greater flexibility of insurance cover. Smaller entities do not have such flexibility due to debt covenants and other rigidities.

#### **Universal**

An aim of the FENZ funding mechanism is to more accurately reflect actions undertaken by FENZ<sup>23</sup>. The funding for FENZ will come from insurance contracts on loss or physical damage to property, motor vehicle users and the central government. This reflects funding for the club good to property owners (who are users in the event of a fire at their property or other actions by fire emergency services in their area and charges both commercial and residential club users), the club good to vehicle owners (who benefit in the event of a car accident) and the public good to New Zealand from there presumably being certain actions undertaken by the fire service that are publicly beneficial (such as readiness functions for

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<sup>22</sup> Source: [https://www.dia.govt.nz/vwluResources/FSR-Background-Report-on-funding-options-1/\\$file/FSR-Background-Report-on-funding-options-1.pdf](https://www.dia.govt.nz/vwluResources/FSR-Background-Report-on-funding-options-1/$file/FSR-Background-Report-on-funding-options-1.pdf).

<sup>23</sup> P9 Proposals for Fire and Emergency NZ regulations Transitional levy relief and Calculation of levy on insurance covering different property types, *FENZ Discussion Document*, March 2017.

a natural disaster). At a high level, these funders appear to cover the spectrum of the fire service beneficiaries. However, it appears that the current sources of funding for rural fire services (eg, local government rates and contributions from forest owners) are to be discontinued or reduced, with the increased costs picked up by increased levies collected from insured property owners. The new (1 July 2017) fees are a 40 percent average increase on the previous fees. This means that high risk users and sectors like forestry - who are beneficiaries of the service in a rural setting - are now either not charged for the service they receive or charged at a reduced rate that will now be covered by other insurance holders.

Furthermore, property and motor vehicle owners with insurance are charged for the services of FENZ while those without insurance for their property or motor vehicle face no cost. FENZ will provide the same service to property owners irrespective of whether they are insured (and whatever level of insurance they take out). The insurance-based funding regime penalises those who elect to purchase insurance and provides a perverse incentive for people to not purchase fire insurance<sup>24</sup>.

DIA's reasoning for keeping the existing insurance collection system has centred on the fact that the level of uninsured property in New Zealand is stated to be low (compared to Australian states that have increasingly moved toward a property-based levy and not an insurance system)<sup>25</sup>. If insurance coverage is high then the free-rider problem is, on face value, limited. While this may be the case for residential contributors we have seen no evidence of analysis of the level of under or non-insured assets in the non-residential sector. Furthermore, the level of underinsurance has not been accounted for. A 2016 report from the NZ Treasury<sup>26</sup> has estimated high levels of underinsurance in the residential insurance sector and a 2013 report by the Controller and the Office of the Auditor General<sup>27</sup> analysed and presented the levels of insurance on central and local government assets and also showed a considerable level of underinsurance.

The report by the NZ Treasury uses data obtained from industry participants and estimates that 85 percent of households could be underinsured by up to 28 percent. In applying those estimates across the entire country an estimate of up to \$184 billion in household value is uninsured. This is not likely to have a large impact on the overall funding because the cap in value for residential assets is so low, however, this should be analysed and addressed by FENZ.

The report by the OAG showed that the Crown had total assets valued at \$225 billion<sup>28</sup> and less than half of these assets (by carrying value) were insured. This represented a significant (\$128 billion<sup>29</sup>) gap in the levy base. The report details that the main reasons for central and local government entities not insuring include: insurance products not being

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<sup>24</sup> Under the Bill, levies will be payable on non-fire material damage policies, in addition to fire material damage policies. This is a significant extension. The Government has said that this extension is justified because the Fire Service responds to a "growing number of non-fire related incidents" such as flooding, but only those with fire insurance pay for it. However, non-fire material damage policies cover a wide range of perils to which the Fire Service does not respond. The Government's review of the Act recognises that a key reason for extending the levy to non-fire material damage policies is that this will "expand the levy base".

<sup>25</sup> Source: [https://www.dia.govt.nz/ywluResources/FSR-Background-Report-on-funding-options-1/\\$file/FSR-Background-Report-on-funding-options-1.pdf](https://www.dia.govt.nz/ywluResources/FSR-Background-Report-on-funding-options-1/$file/FSR-Background-Report-on-funding-options-1.pdf).

<sup>26</sup> Source: <http://www.treasury.govt.nz/publications/research-policy/staff-insights/sum-insured-cover-household-insurance>.

<sup>27</sup> <http://www.oag.govt.nz/2013/insuring-public-assets/docs/insuring-public-assets.pdf>.

<sup>28</sup> Reported as carrying values and not replacement cost.

<sup>29</sup> <http://www.oag.govt.nz/media/2017/insuring-assets>.



available for some assets, the entity does not think the cost of insurance reflects the risk, the entity has decided to self-insure, or the entity believes the Government will cover replacement if required. The entities that opt for self-insurance or significant loss-limit-structured insurance contracts include Housing New Zealand Corporation (HNZC), Crown Research Institutes (CRI's), District Health Boards (DHBs, insured as a collective under Health Benefits Limited), the Ministry of Education (MoE) and Tertiary Education Institutions (TEIs)<sup>30</sup>. Other examples of agencies with large uninsured assets include, for example, the New Zealand Transport Agency (NZTA).

NZTA's assets are predominantly infrastructure. Therefore, it will likely not be a beneficiary of FENZ's services and should likely be largely exempt. However, institutions such as HNZC, CRIs, DHBs, TEIs and MoE are beneficiaries of the service and are under-contributing to the funding of FENZ as they have the option of attaining loss limit insurance positions due to being able to group insure. While this exercise is perfectly reasonable in the sense of optimising insurance, FENZ cannot recognise the loss limit position like insurance companies and property in each of the groups are covered by FENZ at all times. Given the significant funding base that uninsured public assets comprise, these assets should be analysed and broken down to assess the benefits they receive from FENZ.

DIA has noted this under-insurance in its funding options paper<sup>31</sup> and noted that this under-insurance could be offset by a Crown contribution. However, it also noted that the current government contribution is for the public good component of FENZ and not to cover the cost of FENZ's services to different government entities. The Government needs to differentiate between these two aspects: it needs to identify whether its funding is for the public good component of FENZ; or to cover the cost of providing FENZ's services to different Crown entities. If both, then it needs to identify the component of the contribution attributable to each aspect. It should be noted that the contribution the Crown is making is \$10m per year for the three years during the transition. This amount appears far lower than what the contribution would be for public assets if they were fully insured.

Conversely to the negative effect that under-insurance of public-assets has on how universal the regime is, through the amalgamation process, exemptions from contributing to the fire service through the levy were removed. While many appropriate exemptions have been retained/re-installed<sup>32</sup> by DIA, many exemptions from contributing have not been. Included in this is forest owners. This has likely expanded the asset funding base and improved the universality of the funding regime. DIA has noted that with the amalgamation some of the exemptions to levy contributions are no longer relevant and it has assessed each exemption and provided recommendations in the form a discussion document<sup>33</sup>. The reduced amount of appropriate<sup>34</sup> exemptions is positive for the universality but because the exemptions are passed through regulations it makes it relatively simple to adjust what property is deemed exempt and there is risk of political pressure informing inappropriate exemptions in future.

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<sup>30</sup> Sourced from P 31-32 of <http://www.oag.govt.nz/2013/insuring-public-assets/docs/insuring-public-assets.pdf>

<sup>31</sup> Source: [https://www.dia.govt.nz/vwluResources/FSR-Background-Report-on-funding-options-1/\\$file/FSR-Background-Report-on-funding-options-1.pdf](https://www.dia.govt.nz/vwluResources/FSR-Background-Report-on-funding-options-1/$file/FSR-Background-Report-on-funding-options-1.pdf).

<sup>32</sup> See for example [https://www.dia.govt.nz/diawebsite.nsf/Files/FENZ-Cabinet-Paper/\\$file/FENZ-Cabinet-Paper.pdf](https://www.dia.govt.nz/diawebsite.nsf/Files/FENZ-Cabinet-Paper/$file/FENZ-Cabinet-Paper.pdf)

<sup>33</sup> Department of Internal Affairs, *Discussion document: Proposed regulations to support Fire and Emergency New Zealand*, July 2016.

<sup>34</sup> Appropriate meaning property types that will not receive benefit from and should therefore not contribute to FENZ, such as off shore installations.

## **Equitable**

An equitable cost-recovery system is one that charges users in a manner that is proportionate to their benefit from the service provided and their probability of accessing the service (level of fire risk in this case). This involves vertical equity, whereby those with different risks are treated differently, alongside horizontal equity whereby entities with similar risks should be treated the same. In its essence, those who cost more, or with the potential to cost more to the fire service, should pay more.

Although the funding regime for FENZ appears to be universal in the user groups it receives funding from (with the exception of some rural beneficiaries, those who do not insure, and large missing contributions from public assets), the equitable nature of the funding distribution between the user groups that are contributing is significantly more contentious.

Firstly, following the amalgamation of all fire services in New Zealand, the split funding between rural and urban areas may not best reflect the beneficiary paying the cost of the service delivered. While the 2012-2013 fire statistics detailed in Appendix 1 show that, in total, approximately 78 percent of all responses by the fire service were to urban centres, the costs will likely be very different between urban and rural call outs. Rural responses will require a much higher cost than urban and that should be reflected in the funding structure. It appears the fire service is being funded as though it is a broad club good. Levy rates for urban contributors have increased to cover the new rural costs incorporated in FENZ. However, the club of beneficiaries and cost exacerbators have been poorly defined. All user groups are contributing, but many will receive very little to no benefit (or potential benefit) from certain aspects of the service. If the service is receiving part of its funding through charges to the club of users' then it needs to clearly define and justify the clubs that benefit. In most cases a household in a city centre should not subsidise forest fire protection, and vice versa.

It is also unclear how the split of funding burden has been decided for the four contributing groups (residential, non-residential, motor vehicle owners and central government). While a split for the burden of funding has been assumed by FENZ and DIA, analysis has not been presented that details why the split is just. DIA has reported that the inclusion of the public-good funding from central government will fund the services where all benefit (such as non-vehicle rescues) to our knowledge this has not been priced but is simply an assumed burden. Furthermore, it is unclear where services such as medical responses fit.

Further to specific user groups and good types, within the user groups (such as non-residential as classified by FENZ) the users are more complicated than prescribed by FENZ. An industrial property faces a very different response than a commercial block of leased apartments. The risks are different and the required response would be different in the event of a call-out. FENZ should therefore further analyse and classify property use by risk where necessary. FENZ could utilise the data it has available and was highlighted by the 2012 BERL report on property uses and NZFS responses to draw proxies for future expectations of the cost incurred by a property type and the contribution made by the property owners of the affected property type in aggregate. The key focus should be on the non-residential sector as it holds the widest distribution of property classes and should therefore likely differentiate between property type and contribution made.

More generally, the charges facing the insured property-owner appear to bear little relationship to the risk/costs they impose on FENZ<sup>35</sup>. For instance:

- from 1 July 2017, commercial property owners are being charged a uniform 10.6 cents per \$100 insured (uncapped) and residential property owners the same rate but capped at \$106 per house and \$21.20 for contents. Little or no information has been provided on how these rates have been set or how they relate to the risk-adjusted costs imposed on FENZ by the different sectors<sup>36</sup>;
- no evidence or logic has been provided as to why the residential insurance levy is capped and the non-residential levy is not capped, other than it being the status quo. Furthermore, some exceptions have been adopted to cap public assets (such as DHB's and TEI)<sup>37</sup>, it is unclear why this capping has been adopted for some asset holders but not others who are cross-subsidising those with caps, all user groups should be contributing to their level and likelihood of use;
- the low level of the cap for the residential sector (relative to national house price averages) effectively means that FENZ are charging the residential sector (in most cases) a flat-fee. This indicates that there is little risk of FENZ over collecting from residential contributors, however, if property values continue to increase then it will be largely at risk of over-collecting from the non-residential sector. This is unequitable sharing of risk between property use groups;
- owners of motor vehicles (of less than 3.5 tonnes) are to be charged a flat rate of \$8.45 p.a.<sup>38</sup> One option that we understood had been supported by officials was to remove the tax from insured drivers and apply it to the annual licensing fee, so all road users paid. Charging only those with motor-vehicle insurance means that drivers who do not insure do not contribute to the funding of FENZ (yet still receive the benefit);
- there is no attempt to experience-rate users or groups of users (eg, industrial, commercial, forestry, agriculture) based on the different risks they impose. As a result, users have a reduced incentive to manage their risks (eg, by undertaking preventative measures like investing in fire sprinklers);
- the costs of FENZ's non-fire services (such as responding to spills of hazardous substances, medical emergencies and natural disasters) are to be funded from a levy (on the value of a building or motor vehicle) that has no relationship to the cost drivers for these non-fire services. These non-fire related services – and especially medical emergencies – are increasing in significance, rising from 31 percent of total incidents in 2009/10 to 38 percent of total incidents in 2014/15. They could be more appropriately funded on a fee-for-service basis;
- as noted in the universal discussion, large multi-national corporations and government agencies have an option to self-insure or alter insurance coverage to minimise contributions. This does not mean that these agencies and companies are

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<sup>35</sup> This is despite the Fire and Emergency Bill (cl 69) stating that the Bill provides for a levy that is "equitable, so that policy holders should generally pay a levy at a level commensurate with their use of, or benefit from the potential to use, FENZ's services and with the risks associated with the activities that policyholders carry out (but without strict apportionment according to use, benefit, or risk having to be observed)."

<sup>36</sup> The caps equate to sums insured of \$100,000 for residential property and \$20,000 for contents.

<sup>37</sup> [https://www.dia.govt.nz/diawebsite.nsf/Files/FENZ-Cabinet-Paper/\\$file/FENZ-Cabinet-Paper.pdf](https://www.dia.govt.nz/diawebsite.nsf/Files/FENZ-Cabinet-Paper/$file/FENZ-Cabinet-Paper.pdf).

<sup>38</sup> The Bill extends the levy on motor vehicle insurance to include third party liability policies. This is a significant extension. In contrast to the rest of the Bill, which imposes levies on property insurance, this extension imposes the levy on liability insurance for the first time.

not also major cost exacerbators on fire and emergency services (agencies such as HNZA and MoE are high-risk relative to many residential and non-residential users, but the lower risk users will be cross-subsidising the cost imposed by many large organisations);

- major potential users of some of FENZ's services (eg, museums and galleries) may be partially or fully exempt from paying for the costs they impose, despite the fact that these major potential users enjoy the protection provided by FENZ;
- there is no proposal to recover the cost of specific services (eg, false alarms, cleaning up chemical spills) from the user; and
- there appears to be no recognition of the way technological change is shifting the risks and costs of fire services (eg, modern commercial building technologies with the use of concrete floors, gib-boarded walls and automatic fire sprinklers) mean the risk and consequences of fire are much reduced.

In summary, it appears that, contrary to the Treasury guidelines<sup>39</sup>, there are multiple levels of cross-subsidisation between users and user-groups that could practically be reduced by establishing broad risk-rated charges, as well as properly identifying the beneficiaries and the potential burden of use the user or group impose on the service. We note that increased granularity as it pertains to risk and property type creates difficulties for an insurance based levy. A complicating factor is that of group insurance contracts. Group insurance contracts make the implementation of separating out the insurance contracts by specific property very difficult, however, that does not change the current lack of equitability of the funding approach.

### ***Predictable***

It appears that the long-term level of the levy is still unknown (post-transition phase). This is presumably due to not knowing what the new funding base will be after the change in the language of the legislation from 'indemnity value' to 'amount insured' and from levying insurance contracts that cover fire insurance to all insurance contracts covering property against physical loss or damage. This change in the levy base makes the current state of the funding regime very unpredictable for users and for the service itself. It is likely that following the change in the funding base the levy rates will also change but it is unclear what the net effect on a per user basis will be (when their portfolio of insurance cover is taken into account). There will likely be ongoing volatility in the levy rate for contributors as, in the first instance, FENZ will collect at some level (presumably over collect) as it sets a prudent levy rate for the new levy base (which is currently uncertain). Following this FENZ will likely lower the levy rate not over collect and properly charge the new levy base. On the other side, as FENZ is lowering the levy rate to properly collect from the new levy base there will likely be adjustments made by contributors to their insurance contracts (and therefore exposure to the levy) who were most greatly impacted by the change (this includes self-insurance if possible, likely for large commercial entities). This will then force a change in the levy rate as FENZ attempts to not under collect. The conversion will likely go back and forward over the medium-term.

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<sup>39</sup> The Treasury guidelines note (p.4) that: "Charges for services provided by Crown agencies that are in excess of the costs of provision could be interpreted as a tax. A tax that is not authorised by or under an Act of Parliament contravenes section 22(a) of the Constitution Act 1986 and could be declared ultra vires and invalid by a court."

In the longer-term, new insurance products will be created over time as the nature of property insurance changes, this will lead to some on-going uncertainty about the levy rate and what the underlying leviable base will be. It is unclear how the levy could be applied to an insurance package that insures a family for not only home, contents and vehicle insurance but a product that adds life and medical insurance to the portfolio of insured underlying assets. It is also unclear how the levy might be applied to an insurance product that offers lifetime insurance to an asset, the premium may be payable in one lumpsum and coverage lasts for the life of the asset insured. Products like lifetime warranties are available for certain products and insurance contracts structured in that same way is not an unreasonable prediction. These simple complications make the future of funding very unpredictable.

### ***Flexible***

FENZ's funding mechanism has considerable flexibility. Once the levy base has changed (no matter what the result of the change is) FENZ can adjust the levy rates or value cap levels (relevant for residential property only) to cover any over or under-collection of levy contributions. The rate can change through passing new regulation that can be changed each year and new legislation does not need to be passed to make rate changes. This leaves the regime adequately flexible.

## 6 Best-practice examples of cost-recovery in New Zealand

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### 6.1 Introduction

This section examines examples of cost recovery and funding arrangements in New Zealand that show evidence of best practice and that may be useful when designing future funding arrangements for FENZ. We have analysed and presented arrangements where the services are comparable in nature to FENZ: eg, where there is considerable uncertainty of the level of use for a service (as is the case with fire and emergency services) or where the services are predominantly user/beneficiary funded and not predominantly public good.

After a detailed look at funding mechanisms across various agencies in New Zealand we have narrowed our analysis to two agencies: the Accident Compensation Commission (ACC) and the Civil Aviation Authority (CAA). ACC is relevant because, like FENZ, it relates to insurance and has strong risk-adjustment mechanisms built into its funding approach. CAA is a good example of a beneficiary-pays funding model where the large majority of funding comes from the club of users of the aviation system.

### 6.2 Accident Compensation Commission

The Accident Compensation Commission (ACC) is the Crown entity set up under the Accident Compensation Act 2001 (the AC Act) to deliver New Zealand's accident insurance scheme (the Scheme). Everyone in New Zealand (NZ) is eligible for accident cover through ACC. This includes all NZ citizens in NZ and visitors or tourists to NZ. ACC covers all health-care costs associated with an accident or injury and covers 80 percent of the injured person's income over the period in which they are unable to work, up to a maximum (approx. \$124,000 for the 2017/18 year).

ACC is funded through five accounts:

1. motor-vehicle account: covering all motor vehicle injuries on the road;
2. work account: covering injuries in the work place;
3. earners' account: covering injuries to employed people outside the workplace;
4. non-earners' account: covering injuries for all who don't work; and
5. treatment-injury account: covering injuries caused by medical treatment.

The scheme was separated into more differentiated accounts in the early 1990's. During this time employer-based discounts and loadings were also introduced to improve equity of the funding regime. By the late 1990's, amid concerns about the cost to employers of ACC, the market for work-related injury cover was opened up (temporarily) to entry from private insurers. By the early 2000's, ACC was reinstated as the sole provider with a renewed emphasis placed on risk rating and analysis of funding, evidenced by the appointment of an information manager tasked with improving and overseeing data collection<sup>40</sup>.

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<sup>40</sup> <https://www.acc.co.nz/about-us/who-we-are/our-history/>.

The first three ACC accounts noted above are funded by levies. The fourth is funded by an appropriation from central government<sup>41</sup>. Funding for the fifth account is drawn from the Earners' and Non-Earners' accounts (ie, a mixture of employee and government funding) to cover injuries connected with the medical treatment being received.

The levies are based on estimates of the future costs of each service on a fully-funded basis. Full funding refers to an approach where ACC collects enough funding from levies to cover the expected lifetime costs associated with the claims in a given year. Previously (up to 1999), ACC was funded on a pay-as-you-go approach.

Although ACC is by legislation a monopoly, some large employers can apply for the ACC Accredited Employers Programme (AEP). The AEP allows an employer to take responsibility for workplace injuries and claims itself. This self-insurance scheme means employers have a direct financial incentive to maintain better health and safety standards and to get injured staff back into work<sup>42</sup>. Employers who pay more than \$250,000 in annual levies may (according to ACC) be suitable for the programme. Employers who apply to self-insure must prove to ACC that they have appropriate experience in workplace health and safety, are committed to injury prevention and rehabilitation, have policies, procedures and the resources in place to manage and sustain the claims process, and have the financial stability to meet the required costs given the level of risk associated with self-insuring. ACC has full discretion over admittance into the programme.

### **6.2.1 Earners' account**

The earners' account is charged on wages earned by all employed people in the country (estimated at 2.4m people in ACC's 2016 Annual Report) and covers injuries incurred by employed people outside the workplace. The levy is set by ACC and currently charges \$1.21 per \$100 earned. For the 2015/16 fiscal year, the levy generated \$1.26B (approx. 32 percent of ACC's levy income).

The collections for the earners' account are factored into PAYE deductions from employees' pay and are deducted up to a maximum liable income level<sup>43</sup> (of \$122,063 for the 2016/17 year - up from \$84,939 in the 2000/01 year)<sup>44</sup>.

Since the year 2000, when ACC switched to its fully-funded model, levy rates for the earners' account have been between 1.10 percent and 2.04 percent, with a maximum payable levy of between \$944 and \$2,278. Figure 4 below depicts the levy rate and the maximum levy since 2000.

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<sup>41</sup> The details on the levies can be found in the ACC's biannual consultation document: Levy Consultation 2015/16.

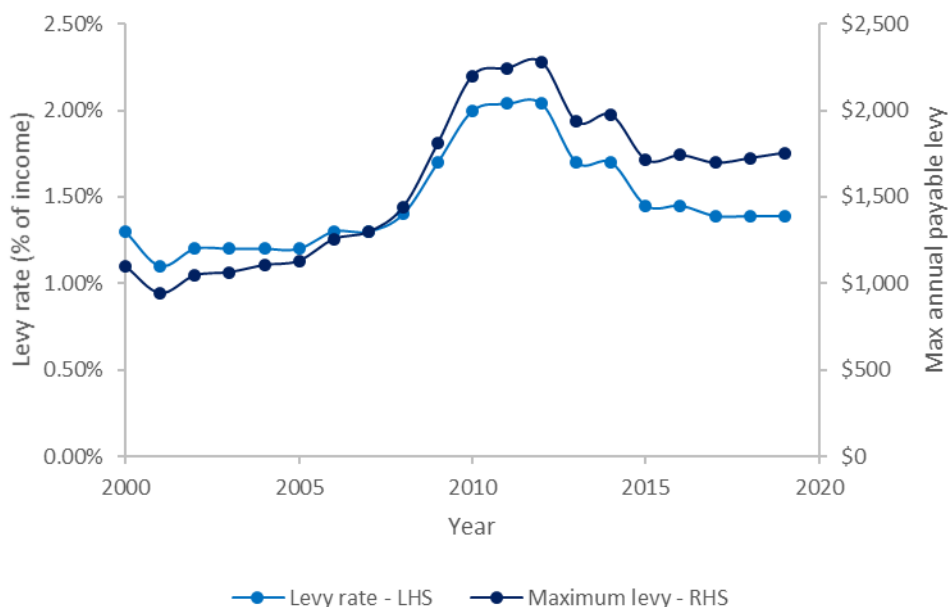
<sup>42</sup> Sourced from <http://www.acc.co.nz/for-business/tax-agents-accountants-and-advisors/cover-products/BUS00072> and <https://www.shapeyouracc.co.nz/assets/uploads/documents/accredited-employer-programme.pdf>.

<sup>43</sup> Liable income includes most usual forms of income from working with some exceptions including redundancy payments, interest and dividends, jury fees and royalties. These may be referred to as "passive income": income a person would receive regardless of an injury. More details at <http://www.ird.govt.nz/income-tax-individual/different-income-taxed/salaries-wages/acc/iit-salaries-acc.html>. Maximum/minimum liable income levels are calculated by ACC detailed by <https://www.shapeyouracc.co.nz/assets/uploads/documents/work-liable-earnings-capping.pdf>.

<sup>44</sup> <http://www.ird.govt.nz/how-to/taxrates-codes/previous-incometaxrates.html>.



**Figure 4: Earners' levy rate and maximum payable levy**



Source: <http://www.ird.govt.nz/how-to/taxrates-codes/previous-incometaxrates.html>.

Figure 4 shows the maximum payable amount and the levy rates track each other closely. Also, the diagram indicates that both the levy rate and the maximum amount payable generally increased from 2001 to 2010 and decreased thereafter.

### 6.2.2 Work account

The work account is funded by employers (unless self-employed in which case the self-employed person is responsible for making the appropriate contributions) and covers injuries that occur at work. Employers are directly invoiced for their work levy for the preceding tax year. The levy amount is based on:

- the type of industry the firm operates in and the risk of a claim within that industry; and
- the number and cost of claims made by the firm.

Like the earners account, the work account is charged as a dollar amount per \$100 of salary and wages paid to employees. The average levy for the 2017/18 year is approx. \$0.72 per \$100 earned per employee. The work account collected \$695m at an average rate of \$0.90 per \$100 earned per employee in the 2016 fiscal year (approx. 18 percent of ACC's levy/govt. income).<sup>45</sup>

### Industry and work-based risks

Whilst the average work levy is \$0.72 for every \$100 paid to employees, ACC bases the levy firstly on the level of industry risk an employer is exposed to. Every employer is allocated to a classification unit (CU) derived from the Australian and New Zealand Standard Industrial Classification (ANZSIC). ACC estimates the riskiness of each CU based

<sup>45</sup> Source: ACC annual report 2016 & <https://www.shapeyouracc.co.nz/assets/Uploads/The-Work-levy.pdf>



on historical claims in each CU. These CU's are then aggregated into levy risk groups. There are 142 levy risk groups covering 539 classification units<sup>46</sup>. Levy rates are applied to the levy risk groups based on the assessed level of risk.

The risk assessment is updated biannually to reflect any changes in the risk of working in a given industry and levy rates are adjusted accordingly. Adjustments that impose increases on an industry are capped at either +25 percent of the previous year's levy rate or +\$0.04, whichever is greater. Adjustments for decreasing levy risk assessments are capped at a -25 percent change on the previous year's levy rate. Capping is designed to smooth the financial obligations on firms<sup>47</sup>.

For an indication of the levy disparity between differing risk groups, consider the (relatively high-risk) forestry industry vis-à-vis the (low-risk) accounting services category. The current levy for forestry, hunting and trapping (levy risk group 041) is \$3.30 per \$100 of liable earnings (approx. 4.5 times the all-industry average of \$0.72). On the other hand, the current levy for accounting services is \$0.07 per \$100 earned (0.1 times the average levy rate of \$0.72).

### ***Discounts and risk-reduction incentives***

Overlaid on each CU classification are incentive programmes specific to each firm paying a work levy. In particular, ACC has an experience-rating programme and a no-claims bonus programme.

The experience-rating programme was introduced in 2010<sup>48</sup> and affects firms (or self-employed persons) that pay an annual work levy of more than \$10,000. The experience-rating programme gives discounts on levy rates if a firm exceeds the safety-performance average (based on the firm's claims history) for its levy risk group over the experience period (the preceding three years). The programme also penalises the firm if it fails to meet the average claims history of its levy risk group. The experience rating is based on claims made or not made by the firm to ACC. The claims considered in the experience rating calculations are:

- the total number of compensation days paid by ACC to an injured employee;
- the number of claims with medical costs that exceed \$500; and
- any fatal claim.

Firms face a scaled incentive approach depending on how far they deviate from the average claims history for its particular risk group. Firms can receive a discount of up to 50 percent or a loading (penalty) of up to 75 percent on their levy contributions<sup>49</sup>.

The no-claims bonus programme affects firms (or self-employed persons) that pay an annual work levy of less than \$10,000 and is focused on the number of weekly compensation days paid by ACC to the employee following an accident. The bonus is not calculated relative to the firm's industry peers as with the experience rating above. If a firm has claimed no weekly compensation days and no fatal compensation over the experience period the firm gets a 10 percent discount on its levy requirement. If a firm

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<sup>46</sup> Source: <https://www.shapeyouracc.co.nz/assets/Uploads/Levy-classification-and-levy-risk-groups.pdf>.

<sup>47</sup> Source: <https://www.shapeyouracc.co.nz/assets/uploads/documents/work-liable-earnings-capping.pdf>.

<sup>48</sup> Source: [https://www.beehive.govt.nz/sites/all/files/Questions\\_and\\_answers\\_on\\_experience\\_rating.pdf](https://www.beehive.govt.nz/sites/all/files/Questions_and_answers_on_experience_rating.pdf).

<sup>49</sup> Source: <http://www.acc.co.nz/for-business/experience-rating/index.htm>.

has claimed between 1 and 70 compensation days, the firm has no adjustment to its levy rate. If the firm has claimed more than 70 compensation days or any fatal claim it has a 10 percent loading added to its work-levy rate.

The exception to the experience-rating discounts and loadings is an “adverse event”. Claims resulting from an adverse event are excluded from the experience-rating calculation, but the Minister for ACC must declare an adverse event in the New Zealand Gazette. Adverse events were declared for the Christchurch earthquake and the Hobsonville tornado. When an adverse event is gazetted, injuries claimed by firms relating to the event are not considered in the calculations of future experience ratings for the firms involved.

The programmes discussed above are focused on incentivising injury prevention and helping employees return to work as quickly as possible following an accident at the firm level.

### **6.2.3 Motor-vehicles account**

The motor-vehicle account is funded by a levy charged through vehicle registrations and a per-litre levy on petrol. Non-petrol-powered vehicles are charged a higher registration levy. The motor vehicle account received \$732m in the 2016 fiscal year (approx. 19 percent of ACC’s total levy/government funding).

The petrol levy is based on annual consumption of 1,200 litres per car (calculated to equally reflect contributions of non-petrol vehicles on average). For the 2015/16 year, owners of petrol-driven vehicles paid 44 percent of their levy through petrol and 56 percent of their levy through their registration<sup>50</sup>.

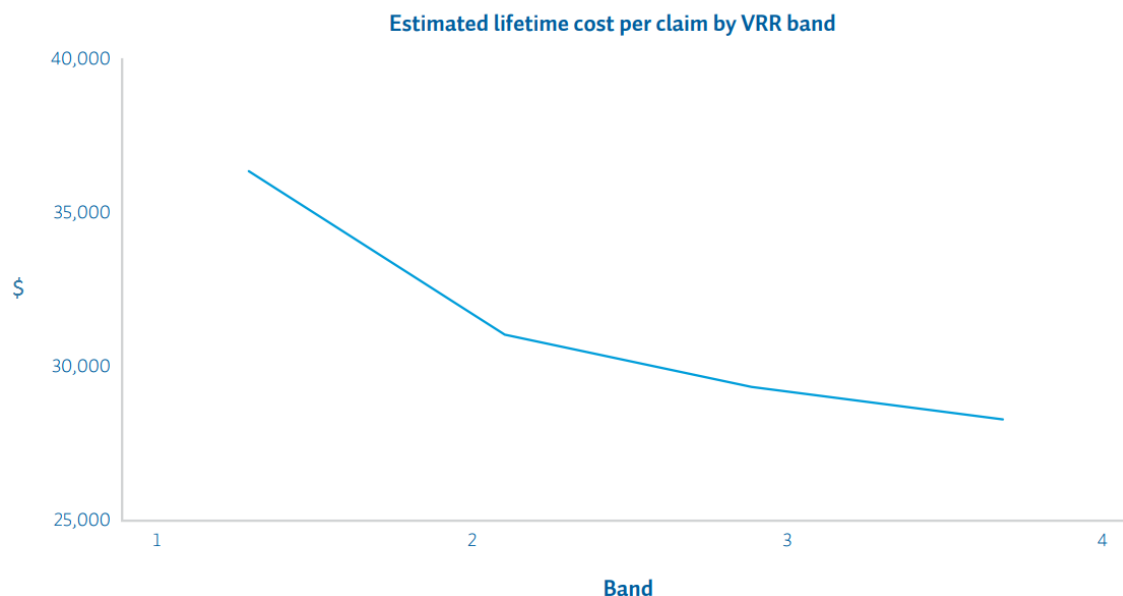
The motor-vehicle account moved to a more sophisticated risk-rating system in 2015. Previously, motor-vehicle levies were based on broad classifications of the type of vehicle (eg, car, motor cycle, truck) and the age of the vehicle. Now, the levies are based on the safety record of the make and model of vehicle, based on Monash University’s statistical records of vehicle-safety records.

Vehicles are given vehicle risk ratings that then classify the vehicle into one of four risk bands with the lowest band representing the highest expected lifetime cost of treatment in the event of an accident and the highest band representing the lowest expected lifetime cost (as shown in Figure 5 below).

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<sup>50</sup> Source: <https://www.shapeyouracc.co.nz/assets/Uploads/Motor-Vehicle-Account-Vehicle-Risk-Rating.pdf>.

**Figure 5: ACC motor vehicle risk-cost graph**



Source: ACC Vehicle Risk Rating 2016/17 review <https://www.shapeyouracc.co.nz/assets/Uploads/Motor-Vehicle-Account-Vehicle-Risk-Rating.pdf>

The vehicle bands are calculated using a tier approach based on data availability, provided the vehicle is classified as a passenger vehicle by NZTA, is lighter than 3,500kg, and is less than 40 years old.

Where possible, ACC employs real crash data that is detailed in the Total Secondary Safety Index (TSSI), which indicates risk of injury to occupants and other road users based on actual crashes statistics. If the TSSI does not have enough data, ACC employs the New Car Assessment Program (NCAP) rating if the vehicle has one. If not, ACC uses (if possible) the vehicle's market group (MG). The MG involves grouping vehicles together based on similarities such as size, type, or other specifications. If a MG is not possible/reasonable, ACC goes to a default rating that is based on the age of the vehicle<sup>51</sup>.

Petrol vehicles are charged \$80.64, \$53.53, \$37.22 and \$18 from bands 1 to 4, respectively. Non-petrol vehicles are charged \$149.14, \$122.03, \$105.72 and \$86.50, respectively.

Light-goods service vehicles (3,500kg or less) are charged a flat fee and heavy-goods service vehicles are charged a flat fee with reductions based on a fleet-rating programme (classified by ACC as gold, silver or bronze) based on company practice.

Motorcycles incur a higher incident cost and are classified into three classes: mopeds and scooters, motorcycles 600cc or less, and motorcycles greater than 600cc. The levy amount

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<sup>51</sup> For more see ACC's database on available data at [http://www.acc.co.nz/PRD\\_EXT\\_CSMP/groups/external\\_levies/documents/publications\\_promotion/wpc139031.pdf](http://www.acc.co.nz/PRD_EXT_CSMP/groups/external_levies/documents/publications_promotion/wpc139031.pdf).

paid at registration increases in each instance. The charge ranges from \$124.33 for petrol mopeds to \$422.18 for the larger-engine petrol motorcycles<sup>52</sup>.

#### **6.2.4 The non-earners account and the treatment-injury account**

The non-earners account is designed to cover people who are not working. It is funded through general taxation and received \$955m for the 2016 fiscal year (approximately 24 percent of ACC's total levy/government funding).

Lastly, the treatment-injury account is funded through a levy (added to the earners' levy and non-earners' levy). For the 2016 fiscal year, the account received \$163m from levy revenue and \$120m from government appropriation (approximately 4 percent and 3 percent of ACC's total levy/government funding respectively).

#### **6.2.5 Other programmes**

ACC is also investing in accident-prevention and education initiatives. Examples are:

- road-safety programmes, where ACC pays for barriers and signs to be put up on state highways as well as partnering with other agencies (such as NZTA) to institute awareness and training programmes aimed at motor cyclists and young drivers about road safety<sup>53</sup>; and
- contracts with NZ sporting institutions (such as NZ Football, NZ Rugby, NZ Netball and NZ Rugby League to deliver an injury-prevention programme called ACC SportSmart<sup>54</sup> that is centred around a warming-up and reducing the risk of injury in sport. SportSmart is aimed particularly at youth-sport injury and awareness<sup>55</sup>.

#### **6.2.6 ACC's funding regime assessed against FENZ's legislated funding principles**

##### **Stable**

Excluding investment revenue, ACC receives approximately 27 percent of its funding from general taxation, 54 percent from levies based on wage revenue earned in the country, and 19 percent from levies on motor-vehicle registration and petroleum purchases. All of these revenue sources are relatively stable. It is unlikely that wages in NZ will drop substantially over any one period or that demand for motor-vehicle travel will substantially and irrevocably drop, at least in the short to medium terms. Even so, if motor vehicle travel did fall, then presumably the likelihood of injury will also fall as there would be fewer vehicle users. Thus, funding should automatically scale with risk.

While general taxation funding is considered a reasonably stable source, there may be future political risk if central government does not consider funding the non-earners' or the treatment-injury accounts is in the best interest of New Zealand taxpayers. However, as a general rule, funding from general taxation is considered stable.

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<sup>52</sup> Source: <https://www.acc.co.nz/about-us/how-levies-work/paying-levies-if-you-own-or-drive-a-vehicle/>.

<sup>53</sup> <https://www.acc.co.nz/preventing-injury/road/>.

<sup>54</sup> <https://accsportsmart.co.nz/>.

<sup>55</sup> See <http://fit4football.co.nz/>, <https://www.coachingtoolbox.co.nz/rugbysmart>, <http://netballnz.co.nz/useful-info/netball-smart> and <http://www.nzrl.co.nz/my-game/players/player-fundamentals/> for detail.

## ***Universal***

Funding for ACC comes in large part tied to wages earned and paid to workers (through the earners' and workers' which are levied on wages) or general taxation funding (through the non-earners' account). This means those who are employed are subsidising those who are not working. However, a strong majority of people are workers and presumably a larger incidence of accidents happen to workers as opposed to non-workers (so cross subsidisation is likely to be relatively small).

Tourists are covered by ACC through the Non-Earners', Motor Vehicle or Treatment Injury Accounts for accidental cover. They do not contribute directly to the workers' or earners' fund but they do, however, contribute to the motor-vehicle fund if they rent a motor vehicle.

For the above reasons, ACC's funding mechanisms are not completely universal as they do not encompass those not working or those tourists who receive ACC benefits but do not contribute to ACC's funding in a direct way.

## ***Equitable***

ACC is a good example of a funding model where the level of use is not certain but the level of expected use can be linked to the level of risk associated with an activity and that has moved to being more equitable over time. ACC has made many changes to its funding approach in recent times to better reflect the risk of access to the service. At a high level, ACC covers everyone and charges everyone. It then adds extra charges for factors that increase the risk of an accident, like being employed in more risky occupations (like forestry) and driving a higher risk vehicle. Everyone who works or employees people contributes to the fund that covers them and everyone who is not working is funded through general taxation (from central government). ACC adjusts the contributions of the risk-exposed users to reflect industry, firm-level and vehicle-class risk exposures to an injury. In this light, ACC has developed a more equitable funding regime: those who are more likely to require the cover pay more, and those who will likely require a higher level of support in the event of an accident contribute more.

However, ACC does not take into account the history of claims in funding the earners' and non-earners' account as it does for the workers' account. In the insurance sector, if an individual makes a claim, the person's premium will often increase if the person is higher risk. Similarly, to be more equitable, the ACC's earners' and non-earners' account could in principle risk adjust by person. However, the cost of this action could well outweigh the benefits given the level of assessment and administration required.

Overall, with the possible exceptions of the earners' and non-earners' accounts, ACC has sought to keep its funding mechanism equitable and adjusted for the risk of use.

## ***Predictable***

ACC's changes to its charges on a year-to-year basis have generally not been large, as depicted in Figure 5 in the above section. The maximum earners' levy rate since the new fully funded approach came into effect in 1999 has been 2.04 percent (GST inclusive), with a minimum of 1.1 percent. Also, the changes to the work account levy are capped at maximum and minimum changes per year, smoothing the financial burden and uncertainty for payers. However, the complex nature of CU's may cause problems/risks for businesses in understanding the requirements they need to commit to. In noting this caveat, however,

ACC's efforts to communicate the requirements, through, for example, online resources and calculators, should be recognised.

### **Flexible**

ACC's funding mechanism retains flexibility to adapt to changes in demand. The main exception to this is the cap on alterations to the workers' account levies. However, most of ACC's funding is from rates on motor vehicles and wages that can be adjusted over time to ensure ongoing financial sustainability.

## **6.3 Civil Aviation Authority**

The Civil Aviation Authority (CAA) is the authority governing aviation in New Zealand. It sets standards and regulations for general aviation safety in New Zealand. This extends to pilot licencing and ongoing registration (including medicals and flight reviews), routine inspections, and overseeing commercial air travel and other activities that require safety oversight.

The CAA is funded by a series of fees, levies, and hourly charges on users; contract revenue from the Ministry of Transport (MoT); and Crown funding.

The CAA has five output classes:

1. Policy and regulatory strategy;
2. Outreach;
3. Certification and licencing;
4. Surveillance and investigation; and
5. Security service delivery.

The first four output classes operate under the CAA's regulatory function while the security service delivery output class operates under the security service function. The regulatory function of the CAA accounts for approximately 32 percent of total spending while the security function accounts for approximately 68 percent of spending. Spending closely matches revenues collections from users and central government.

The CAA is funded on the principle that the beneficiary of the CAA's service/function pays the cost of the burden they impose on the system. This principle underlies the CAA's recent triennial funding review where the CAA undertook consultation and analysis into who the beneficiaries of the specific services/goods that it delivers are, be they public, private or club goods<sup>56</sup>.

The CAA details the cost of providing its service and revenue collection by service line. The following subsections of this report present the costs and revenue collection by service line.

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<sup>56</sup> Source: <https://www.caa.govt.nz/funding/index-2/>.

### 6.3.1 Cost of delivering outputs

Figure 6 below depicts the percentage of CAA's expenditure by output class for the 2015/2016 financial year<sup>57</sup>.

**Figure 6: CAA spending breakdown**

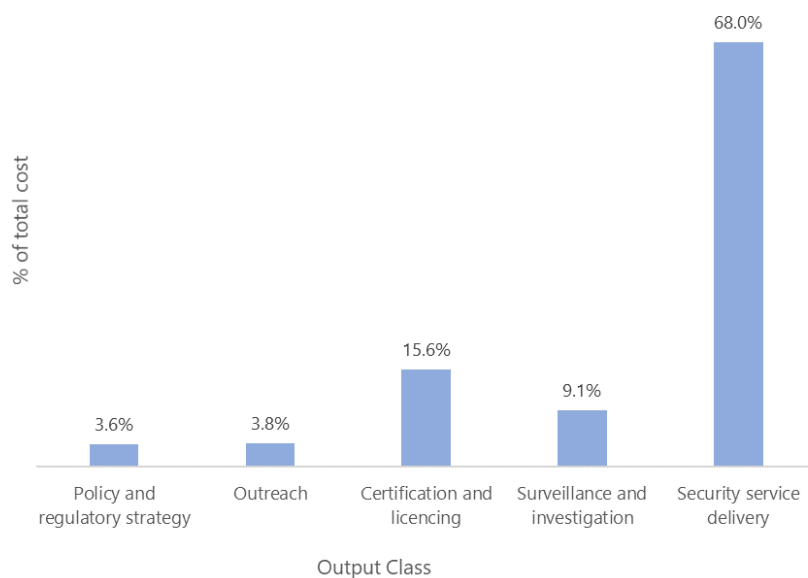


Figure 6 above shows that approximately 3.6 percent of the total cost of delivering all services is spent on policy and regulatory strategy and a further 3.8 percent on outreach. Another 15.6 percent is spent on certification and training and 9.1 percent is spent on surveillance and investigation. The cost of delivering the regulatory functions of the CAA (ie, all of the above) makes up 32 percent of total cost. The remaining 68 percent is spent on the security service delivery output class, which makes up its entire security function.

Figure 7 below provides a breakdown of the CAA's costs.

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<sup>57</sup> Excludes eliminations.

**Figure 7: CAA's cost breakdown**

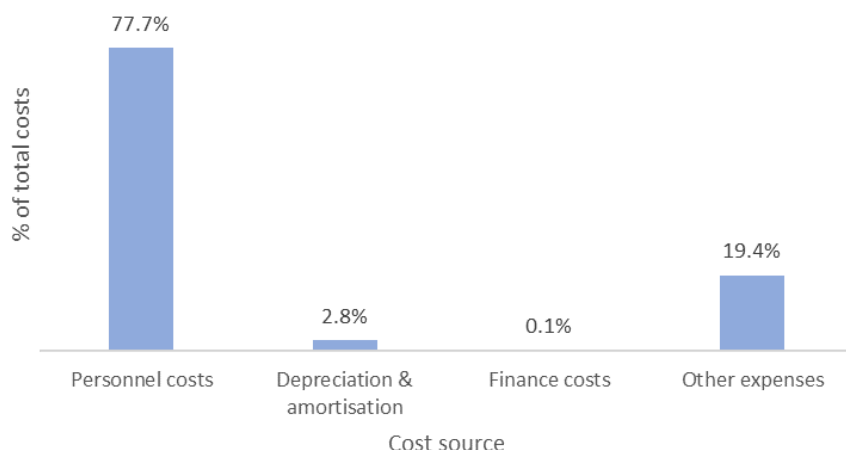


Figure 7 above highlights the principal cost driver for the CAA is personnel expenditure, making up 78 percent of total costs. Approximately 20 percent is classed as other expenses (primarily involving lease commitments).

### 6.3.2 Funding

The CAA is primarily funded by users through fixed fees, levies and hourly charges. A small portion of the CAA's funding also comes from the central government through Vote Budget allocations as well as via contract revenues from MoT. Approximately 97 percent of the CAA's funding comes from users and 3 percent from government.

All participants in the aviation industry (commercial and private) pay a participation levy based on the weight of the operators' aircraft. Fixed fees are largely charged for personal licencing with some aspects of licencing such as "monitoring of, or carrying out checks in relation to, certificate of approval holder" being charged at a standard hourly rate. Aircraft registration and related activities are charged at fixed fees with an annual fixed fee to all registered owners of aircraft for maintenance of the NZ aircraft register. All passengers of domestic and international flights are charged a levy that is typically added to the cost of their plane ticket. All other associated charges are priced at an hourly rate - this includes charges associated with monitoring or approvals that are specific to the user<sup>58</sup>.

Figure 8 below shows the percentage of revenue attributed to each output class.

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<sup>58</sup> For a full list of fees, levies and charges see: [https://www.caa.govt.nz/Legal\\_Information/CAA\\_Fees\\_and\\_Charges.pdf](https://www.caa.govt.nz/Legal_Information/CAA_Fees_and_Charges.pdf).



**Figure 8: CAA's funding by output class**

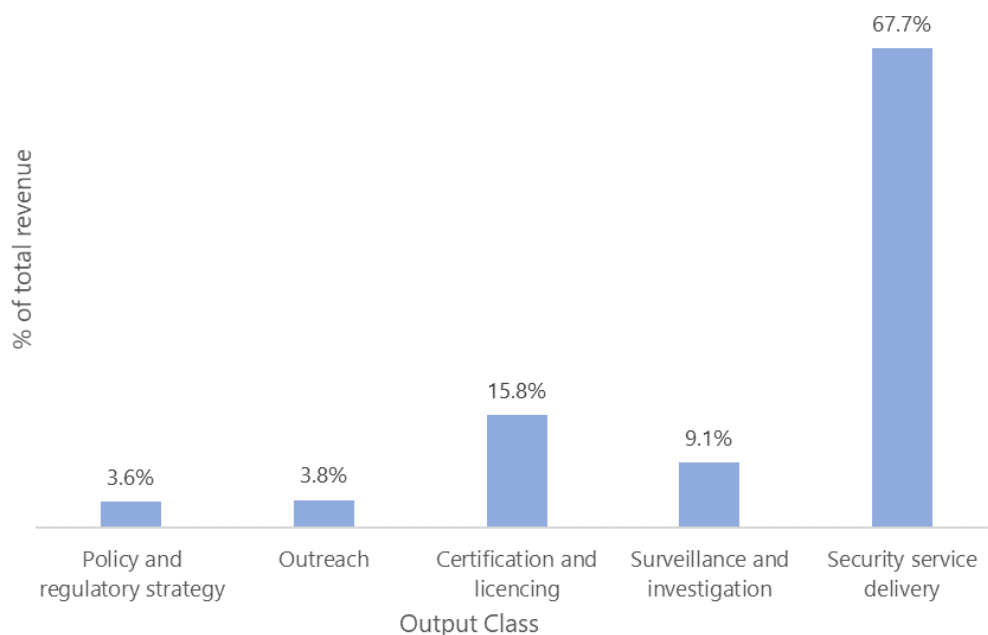


Figure 8 above shows that approximately 68 percent of revenue is collected from the security function approximately 4 percent of revenue is collected from the policy and outreach output class, approximately 16 percent is collected from certifying and licencing, and 9 percent is collected from the surveillance and investigation activities.

Figure 9 below presents the proportion of funding received from each funding source by the CAA.

**Figure 9: CAA's revenue collection sources**

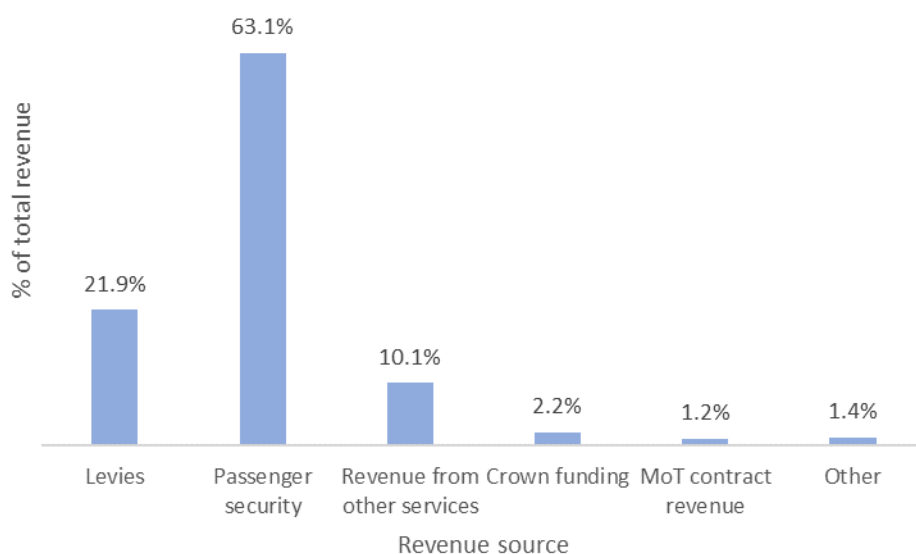


Figure 9 above shows that a majority of the CAA’s funding comes from passenger security (approximately 63 percent). A further 22 percent comes from charges to aviation users in the form of levies, 10 percent from other services (fees and charges) and most of the remaining funding from central government in the form of Crown funding and MoT contracts.

Table 3 below provides a comprehensive breakdown of funding of the CAA by funding source and output class.

**Table 3: CAA’s funding by source and output class**

| (\$0000)                       | Crown funding | MoT contracts | Levies   | Fees and charges | Contracted services | Passanger security charges | Other   | Total     |
|--------------------------------|---------------|---------------|----------|------------------|---------------------|----------------------------|---------|-----------|
| Policy and regulatory strategy | \$1,779       | \$1,353       | \$1,348  | \$45             |                     |                            |         | \$4,525   |
| Outreach                       |               |               | \$4,748  |                  |                     |                            | \$115   | \$4,863   |
| Certification and licencing    |               |               | \$13,048 | \$6,605          |                     |                            | \$478   | \$20,131  |
| Surveillance and investigation | \$908         |               | \$8,678  | \$1,699          |                     |                            | \$280   | \$11,565  |
| Security service delivery      | \$145         |               |          |                  | \$4,499             | \$80,089                   | \$1,325 | \$86,058  |
| Total                          | \$2,832       | \$1,353       | \$27,822 | \$8,349          | \$4,499             | \$80,089                   | \$2,198 | \$127,142 |

Table 3 above shows that approximately 39 percent of the funding for the policy and regulatory strategy output class comes from Crown/Vote funding, 30 percent from MoT contracts, 30 percent from levies, and the remaining 1 percent comes from fees and charges.

The goal of the CAA is to charge the beneficiary of the service and not necessarily the direct user, so it is sensible that a larger portion of funding for the policy and regulatory strategy comes from the central government. There is seen to be public good in having a functioning aviation system in NZ so that is publicly funded. The club of aviation users also derive benefit in having the policy and regulatory arm of the aviation system, so some funding coming from levies (to users of the aviation system).

Certification and licencing receives 65 percent of its revenue from levies, 33 percent from fees and charges and the remaining 2 percent from other sources. The beneficiaries of a functioning certification and licencing arm of the CAA are primarily:

- those receiving the licence who are able to operate in the aviation system (for personal or commercial use); and
- the consumers of aviation (mainly passengers) who receive surety that their pilot is fit to fly.

Therefore the funding comes primarily from the users of the system in the form of levies (coming from both consumers and the club of users including pilots) and also directly from the recipients of the licence (in the form of direct fees and charges).

A majority of the surveillance and investigation funding comes from levies (75 percent) with 15 percent from fees and charges, and 8 percent sourced from Crown funding. In order to operate within the aviation system, an operation must prove, in an ongoing way, that it is operating safely, and in the event of an incident the cause needs to be uncovered.

The majority of the benefit for surveillance and investigation of the aviation system lies with the club of users of the system and in some cases the private operator requiring the surveillance or investigation. Therefore, the split between levies (from the club of users), fees and charges (from the direct recipient) and the public funding appears to align with the general funding principle of beneficiary pays.

Lastly, 93 percent of the funding from the CAA's security function comes from passenger security charges and the remainder comes from other contracted services related to security, other sources, and a small portion is appropriated from Crown funding. This again appears to be generally in line with the CAA's funding goal where the primary beneficiary of the passenger security service, the passengers, pay the great majority of the costs with some benefit seen to accrue to the general public from having secure passenger travel. Presumably some other funding comes from contracts related to security, although the amount of this funding and where it comes from is unclear.

From the analysis above it appears that the general funding principle of beneficiary pays is being closely followed by the CAA, however we have not investigated in detail the distribution and split of the services that the CAA provides by specific service.

### **6.3.3 Recent changes to the funding regime**

The CAA has recently completed its triennial funding review and has made some alterations to its funding regime. The key changes include<sup>59</sup>:

- removing the hourly charge for routine surveillance (audits and inspection), except in cases where follow-up activity is required;
- the addition of activity-based operations safety levies for air transport and commercial transport operators;
- reducing the medical certification application fee from \$272.17 to \$105 (GST exclusive). The fixed fee covers the application, with any follow-up requirements being charged hourly (follow-up was originally covered in the fee);
- equalisation of the domestic and international passenger safety levy to a common value of \$1.60 (GST exclusive); and
- removing the participation levy for "out of service" aircrafts.

The CAA has stated that the changes to the funding regime are aimed at decreasing any visible cross-subsidisations.

The CAA has removed the standard hourly charge for routine surveillance as it deems the surveillance service is not purely a private good. There is a club-good component that all users of the aviation system receive from having a safe aviation system. The CAA has therefore deemed the routine portion of all surveillance be funded through a levy to users, not just the operator required to undertake the surveillance. If an operator is found non-compliant and follow-up assessment is required, the CAA has deemed the operator is the exacerbator and should cover the additional cost.

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<sup>59</sup> Triennial funding review summary of changes can be found at: [https://www.caa.govt.nz/assets/legacy/funding/J004752-Fees-and-Levies-booklet\\_FF\\_3.0\\_Web\\_Spreads\\_nd.pdf](https://www.caa.govt.nz/assets/legacy/funding/J004752-Fees-and-Levies-booklet_FF_3.0_Web_Spreads_nd.pdf).

The addition of activity-based safety levies for commercial operators involves levies on different aviation activities that had previously not been levied. These activities have been deemed by the CAA to be cost/risk exacerbators in the aviation system. The new levied activities and calculation process of levied amount include:

- agricultural aviation – levy calculated on per tonne dropped;
- adventure aviation – levy calculated on per hour flown and per descent made (for skydiving operations);
- freight – levy calculated on a per tonne transported basis; and
- other operations (less than 20,000 passengers per year) – levy calculated on per hour flown.

These levies are to increase contributions from certain sectors of the aviation system to fund certain aspects that are shifting from hourly cost recovery charges to levy funded (like the surveillance service above).

The medical certification application fee has been lowered to more accurately reflect the club-private good mix of a medical certificate. The beneficiaries of a functioning medical unit that sets and reviews standards and medical requirements on pilots are the pilots who are allowed to operate, either commercially or privately, and the users of the aviation system, primarily passengers. The CAA has therefore reduced the fixed fee cost on the pilots and made up the funding deficit from users in the form of levies. Also, currently the fee that each pilot pays for a medical application covers some aspects that only benefits the single applicant and will not affect other pilots applying for a medical application. For example, if a pilot applies for a medical certification and does not pass, that pilot can apply for an accredited medical conclusion (AMC) where a member of the CAA's medical unit will review the case and make a conclusion on the pilots' airworthiness. Currently this extra cost to the CAA for the pilots who will require it is priced into the application fee. The CAA has altered this so that any medical that requires an AMC, which takes more than two hours to process, will be charged on an hourly basis to more accurately reflect the beneficiary of the service, the special case pilot, and not all pilots.

Currently, there are different levy rates placed on international and domestic passengers (domestic levy is currently \$1.71 per passenger and the international levy is \$1.30 per passenger). There is also a special agreement between Australia and New Zealand setting a levy that cannot be affected. The CAA has reasoned that passengers are the primary beneficiaries of a safe aviation system so the levy should stand, but it does not consider there is a material difference in the benefit received by international or domestic passengers. Therefore, the CAA is equalising the levy rates between domestic and international travel<sup>60</sup>.

Lastly, the participation levy has been removed for any aircrafts that are not in service. This is reasonable because if an aircraft is not in service it is not participating in the aviation system and therefore not benefiting from any of the services provided by the CAA.

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<sup>60</sup> Para 86 of [https://www.caa.govt.nz/assets/legacy/funding/2014\\_Funding\\_Disn.pdf](https://www.caa.govt.nz/assets/legacy/funding/2014_Funding_Disn.pdf).

### 6.3.4 CAA's funding regime assessed against FENZ's legislated principles

#### **Stable**

The funding mechanism for the CAA depends on aviation activity in the country. If aviation activity declines in New Zealand, with, for example, decreased air travel resulting in reduced passenger safety levy collection, the CAA would have to subsidise its security function with funds from other sources. However, due to the funding structure of beneficiary pays, in the case of decreased passenger levy collections the CAA's security function would shrink due to lower demand as opposed to needing subsidisation from other sources. In the short-term there are rigidities to this as most of the CAA's expenses are towards personnel (for instance, rigidities would include severance packages for the downsized staff). In general, we consider the CAA's funding approach to be stable.

#### **Universal**

Funding for the CAA is shared between central government (the public), consumers of the aviation system in New Zealand, and commercial and private practitioners of aviation in New Zealand. It therefore appears to be universally charged to all who benefit from the aviation system in New Zealand.

#### **Equitable**

As stated previously, the CAA is funded on a beneficiary-pays principle. As discussed in Section 6.3, the CAA appears to have analysed and distributed its funding sources in a way that is consistent with the funding principle of beneficiary pays. The CAA has broken the total of its operation into output classes where the policy and regulatory strategy output class is funded in part by the central government (in the form of Crown funding from the Vote funds) to represent the public good attained from having a regulated aviation sector in New Zealand; in part by contracts from MoT reflecting the club good of having a fully operational and regulated transport infrastructure in New Zealand; and then by private users of the aviation system through levies.

The certification and licencing output class is funded through levies on the users of the aviation system representing the benefit to the club of aviation users, as well as fees and charges to the individuals benefiting from being licenced to fly or participate in the system. It is our understanding that this output class will also include some public funding after the changes of the triennial funding review are enacted - through the new funding of the medical certificates.

The surveillance and investigation output class is funded through public funds. This represents the public good of safely operating the aviation system. Levies to users of the aviation system reflect the club benefit of ongoing vigilance of the aviation system and fees and charges to the end user (typically an aviation operator) who get to operate in the aviation sector. Lastly, the security function is largely funded by passenger security charges reflecting the notion that passengers are the primary beneficiaries of being safe.

The above indicates the CAA is generally charging the beneficiaries of the service it provides on an equitable basis; however, we have not considered the specific costs and collection of the output classes. To look at the question of equity differently, Table 4 below presents revenue and expenditure associated with the funding sources taken from the

reserves accounts for the CAA's regulatory function. These figures are taken from the CAA's financial accounts<sup>61</sup>.

**Table 4: CAA's regulatory function reserves accounting**

| <b>Regulatory function</b> |            |                |                           |                                  |           |
|----------------------------|------------|----------------|---------------------------|----------------------------------|-----------|
| (\$0000)                   | Fixed fees | Hourly charges | Other (Crown funding/MoT) | General funds (including levies) | Total     |
| Revenue                    | \$2,917    | \$5,432        | \$4,040                   | \$28,695                         | \$41,084  |
| Expense                    | -\$4,218   | -\$10,946      | -\$5,187                  | -\$20,171                        | -\$40,432 |
| Net surplus/deficit        | -\$1,301   | -\$5,514       | -\$1,147                  | \$8,524                          | \$652     |

Table 4 above shows that for the regulatory function of the CAA, the fixed fees, hourly charges and the other funding accounts all recorded a net loss, whereas the general funds account reports a surplus. The losses are recouped from the CAA's total general reserves and the surplus is partially transferred to the CAA's general reserves. The same pattern occurred in 2015, which may indicate an ongoing trend.

**Table 5: CAA's security function reserves accounting**

| <b>Security function</b> |                                 |                            |                   |           |
|--------------------------|---------------------------------|----------------------------|-------------------|-----------|
| (\$0000)                 | International Pax safety charge | Domestic Pax safety charge | Other fees/levies | Total     |
| Revenue                  | \$58,445                        | \$21,653                   | \$4,803           | \$84,901  |
| Expense                  | -\$54,841                       | -\$24,992                  | -\$4,802          | -\$84,635 |
| Net surplus/deficit      | \$3,604                         | -\$3,339                   | \$1               | \$266     |

Table 5 presents the reserve accounting for the security function. It shows that the international passenger levy account reports a surplus while the domestic passenger safety account records a loss. The loss is covered by a larger residual balance in the account brought forward from 2015 and both accounts contribute a small proportion of the CAA's general reserves account. This is less consistent with the 2015 accounting and may reflect the passenger levy collections and expenses are more volatile over time. Also, gains in passenger levies are correctly appropriated to fund the club good of the aviation sector.

While the above figures may be somewhat misleading due to the nature of the accounting rules, it does indicate some possible cross subsidisation of funding from levy funds to the funding of fixed fee and hourly charge accounts.

Overall, our assessment is the CAA has closely followed its funding guidelines and is, therefore, in general charging the users of the aviation system and the general public on an equitable basis. However, CAA's specific fees, charges and levies have not been analysed in detail in this report.

<sup>61</sup> P 94 2016 CAA Annual report.

## **Predictable**

Outside of the CAA's triennial funding review, fees, rates and charges are and have been relatively stable and predictable throughout time. Some adjustments have been made to some fees and the hourly rate to accurately reflect the cost or expected cost of the service. However, we do not view these changes as having a meaningful unforeseen impact on the CAA or those who fund it. These adjustments are calculated and noted in advance when the regulation amendments are made. We therefore consider the CAA's funding regime reasonably predictable for both the users who fund its operations and the CAA to carry out its ongoing operations effectively.

## **Flexible**

While the CAA appears to have some options to alter various rates to better reflect the true cost of delivery, to make meaningful changes to the funding system the CAA needs to carry out a lengthy process (like its recent triennial funding review). If major changes to the aviation landscape in New Zealand were to occur, the CAA would have little power to alter its funding regime rapidly, other than to request additional funding from central government and/or proceed with a funding review.

## **6.4 Other funding regimes considered**

While this chapter focusses on the ACC and CAA, we also considered and investigated several other funding regimes within NZ for evidence of best-practice and applicability to FENZ.

### **6.4.1 Ministry of Primary Industries**

The Ministry of Primary Industries (MPI) is another example of a user/beneficiary pays approach to cost recovery. MPI charges a series of levies and fees on imports, exports and production that cover both direct and indirect costs associated with the services provided<sup>62</sup>.

For example, within its biosecurity business unit, MPI receives funding for readiness and response. The response funding is of interest and of possible relevance to FENZ due to its prepared but uncertain nature. If a primary industry suffers a biosecurity incident or outbreak (such as foot and mouth disease) the effects are far reaching.

In the event of an outbreak that affects animals, a fruit grower would be less affected than an animal farmer, and vice versa. However, ex-ante both farmers would want the unit to have the capabilities to minimise the effect to them. Therefore, in principle all should contribute to the preparation and readiness of NZ to a bio-security event. Currently, the biosecurity business unit is funded through a biosecurity system entry levy (levied on all participants), which funds data collection and general risk assessment and monitoring (considered 'industry goods' by MPI). MPI also collects a series of fixed fee and hourly charges to direct users of inspections, testing, audits and permits and a joint border management system that levies border crossings also funding NZ Customs.

The readiness and response operations are currently completely crown funded. However, there have been recent developments to make the funding mechanism more effective and representative of the service being provided. The government and the industry have

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<sup>62</sup> See <https://www.mpi.govt.nz/importing/overview/fees-and-charges-general/> for details.



entered into a deed to share funding and decision making related to readiness and response outcomes<sup>63</sup>. The funding agreement currently has twelve signatories and while this type of funding is a move toward best practice, it is still under development.

Overall, approximately 70 percent of MPI's total funding comes in the form of Crown funding and the remainder of the funding is sourced through a series of fees and levies aimed at the end user as the primary beneficiary. In some instances, levies are placed to share the cost over the club of beneficiaries (such as import and export levies on animal products). However, it appears that this is only in a few cases and to a clearly defined club of users (such as incorporated entities that are importers), which is different to the requirements of FENZ's services.

#### **6.4.2 Earthquake Commission**

The Earthquake Commission (EQC) is another example of a funding model where outcomes are uncertain. EQC provides insurance for loss or damage in the event of a natural disaster such as an earthquake, natural landslip, volcanic eruption, hydrothermal activity or a tsunami. EQC's insurance product (EQCover) is charged at a rate of 20 cents per \$100 of home and contents fire insurance up to a maximum. The levy only covers those who have insurance and is charged automatically through an insurance policy. It is guaranteed by the government and covers a maximum of \$100,000 for house damage and \$20,000 damage for contents in the event of a natural disaster<sup>64</sup>.

There are some clear similarities and some differences between EQC and FENZ. Both funding regimes are simple and funded via an insurance levy. The EQC levy, like FENZ, is charged based on the insured fire value. This makes sense for EQC because the EQC is liable for the property damage in the event of a natural disaster - which should be directly related to the insured value in the event of an incident.

There are, however, some fundamental differences between the two models. Most notably, if you do not have insurance then you do not qualify for EQCover. On the other hand, everybody is able to use FENZ's services, regardless of whether they contribute to their funding or not.

Also, EQC sets and collects premiums to cover the expected cost of a natural disaster for those who take out the relevant insurance. In the event of a natural disaster, the EQC will use these collected premiums to pay out those who have insurance. In this sense, the EQC regime is a fairly standard form of insurance and suits the insurance model. FENZ's funding regime, on the other hand, is designed to cover the ongoing "readiness to respond" costs) and not to insure fire-related damage to property. Therefore, it is less reasonable to base FENZ's funding on the insurance model.

#### **6.4.3 Some other NZ regimes**

Land Information New Zealand (LINZ) receives just under 40 percent of its funding from the Crown and expects all of its user/beneficiary funds to come directly from the user in the form of a fee for service. While we deem this best practice for the service provided by

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<sup>63</sup> Source: <https://www.mpi.govt.nz/protection-and-response/biosecurity/government-industry-agreement/>.

<sup>64</sup> Source: <https://www.eqc.govt.nz/what-we-do/eqc-insurance>.

LINZ, it is not sufficiently comparable to the requirements of FENZ where beneficiaries are less direct<sup>65</sup>.

New Zealand Customs is funded through direct fees at the border. The fees are priced to recover the cost of running the service.

NZ Police in 2016 made amendments to the Policing Act, 2008 to allow some of its inter-agency vetting service costs to be recovered<sup>66</sup>. This is an interesting shift for NZ Police which has realigned its funding regime more closely to other comparable countries, which in large part allow for this inter-agency cost recovery. However, the NZ Police changes are only recent and still coming into effect and NZ Police will in the long-term remain majority taxpayer funded.

Other agencies and programmes considered during this research which have some form of cost recovery, but remain funded mostly through general taxation, include the Ministry of Social Development, the New Zealand Environmental Protection Authority, the Ministry of Transport (namely its national farebox recovery policy) and Maritime NZ.

## 6.5 Lessons for FENZ's funding regime

This section has outlined examples within New Zealand where good-practice cost-recovery approaches have been employed by government agencies.

The CAA has been highlighted as a good example of a cost-recovery regime as it provides a mix of public, club and private services and it allocates the costs of its different services in an effort to minimise cross-subsidisation between different users and user-groups. We consider this to be best-practice given the nature of the CAA's business.

FENZ could increase the equity of its funding by more actively analysing the appropriate beneficiaries of its services and classifying service delivery as either a private good, club good or public good. For instance, allocating its funding by service or cost centre as opposed to pooling its resources as appears to be proposed, would help FENZ better understand its costs and efficiently charge the beneficiaries of its services.

ACC has been highlighted as a good example of cost-recovery where an individual's requirement to use the service is uncertain. All earners and motor vehicle owner/operators contribute to ACC's funding firstly by likelihood of use and also by likely level of use in the event of using the system. Earners contribute through a proportion of their wages. However, in the event of an accident ACC is liable to deliver a portion of the injured person's wages. Motor-vehicle owners pay more if it is deemed that in the event of a crash they are likely to be harmed more and therefore inflict a higher burden on the system. Firms contribute to ACC's expected costs based on likelihood of injury relative to other job types, the firm's specific history of workplace safety relative to other firms doing the same job, and the expected level of burden placed on the system in the event of an injury. This is considered best-practice as charges are based on the probability of use and level of use in the event of use.

FENZ could move to more probability-dependent funding. As with ACC, the risk-based charges could then be overlaid with adjustments for individual use over a given year. This

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<sup>65</sup> Figures sourced from: <http://www.linz.govt.nz/about-linz/publications/annual-report>.

<sup>66</sup> Source: <http://www.police.govt.nz/sites/default/files/publications/nzpvcs-cost-recovery-guide.pdf>.

is an implementable change that could increase the equity of FENZ's funding regime. FENZ could also set up a contribution pool by response type and adjust the required contributions over time by offering a no-false-callout bonus and recovering the lost funding from frequent users of the false alarms. This would more properly reflect direct use while not deterring well-intentioned calls.

ACC and CAA have both shown that these types of funding regimes are implementable, sustainable and transparent. These two funding operations both reflect best principles funding approaches because they allot costs to beneficiaries and adjust for probability of use.

## 7 Fire-service funding in Australia

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### 7.1 Introduction

While there are limitations to the comparability of the cost-recovery approaches of FENZ and those of other government agencies in New Zealand, it is possible also to look further afield to the funding and cost-recovery approaches of fire services in other countries for insight and lessons that can be learnt. This report continues by first presenting and analysing the funding approaches for fire services in Australia and then in other selected countries.

We have reviewed in detail the funding and cost-recovery systems by state in Australia. Of the six states, Queensland, South Australia and West Australia employ what we consider models of fire service cost-recovery systems from which FENZ could take practical examples from. This section presents detailed discussion of the systems in these three states. This is followed by a brief discussion of the other three states.

### 7.2 South Australia

The fire services in South Australia (SA) are largely levy funded, with a system known as the Emergency Service Levy (ESL). The ESL in SA was established in 1999, and includes a levy on properties and a levy on motor vehicles.

#### 7.2.1 *Motor-vehicle levy*

Motor-vehicle owners pay their fire-service levy at the same time as they pay their vehicle registration. The rate of the levy depends on the value of the vehicle.

#### 7.2.2 *ESL on property components*

The ESL in SA has a fixed charge and a variable charge component. Together these two calculations combine to make up the ESL.

##### 7.2.2.1 *Fixed charge*

The general level of fixed charge for 2016/17 is \$50 per property. This is charged equally on all properties, except for community use (which are charged at \$20 per property) and those in Regional area 3, which is outside of council area (these properties do not pay a fixed charge).

##### 7.2.2.2 *Variable charge*

The variable charge is based on four components:

- 1) capital value;
- 2) area factor;
- 3) land-use factor; and
- 4) prescribed levy factor

### 7.2.2.3 Capital value

This is the value of the house as determined by the Valuer-General.

### 7.2.2.4 Area factor

The SA government divides the state into four emergency-service areas, and give each an 'area factor' based on the varying levels of emergency-service provision. The four areas and their area factors are illustrated in Table 6 below.

**Table 6: South Australia emergency-service areas and area factors**

| Emergency services area | Areas covered  | Area factor |
|-------------------------|--|-------------|
| Regional area 1         | The areas of the cities and towns of Berri, Goolwa, Kadina, Loxton, Millicent, Mt Barker, Mt Gambier, Murray Bridge, Naracoorte, Nuriootpa, Pt Augusta, Pt Lincoln, Pt Pirie, Renmark, Tanunda, Victor Harbor and Whyalla. | 0.8         |
| Regional area 2         | The part of the State outside of "Regional Area 4" and "Regional Area 1" but still within a council area.  | 0.5         |
| Regional area 3         | The part of the State not within a council area.   | 0.1         |
| Regional area 4         | Land within all metropolitan councils, the Adelaide Hills Council, Corporation of the Town of Gawler, City of Onkaparinga and City of Playford.  | 1           |

Those in metropolitan areas with high levels of emergency-service provision have the highest area factor of 1, while rural properties which receive a lower level are charged the lowest factor of 0.1.

### 7.2.2.5 Land-use factor

Properties are divided into seven land-use categories, and each is given a land-use factor. Table 7 below gives these land-use categories and their factors.

**Table 7: Land-use factors in South Australia**

| Land use category     | Land use factor |
|-----------------------|-----------------|
| Commercial (CO)       | 1.044           |
| Industrial (IN)       | 1.815           |
| Residential (RE)      | 0.4             |
| Rural (RU)            | 0.3             |
| Other (OT)            | 0.5             |
| Special Community Use | 0.1             |
| Vacant Land (VA)      | 0.3             |

Residential properties face a land-use factor of 0.4. For commercial and industrial properties, this is significantly higher at 1.044 and 1.815 respectively. Rural and vacant land are charged at a lower rate of 0.3, while special-community use properties are charged at a factor of 0.1.

#### 7.2.2.6 *Prescribed-levy factor*

The final part of the calculation is the prescribed-levy rate, which is set annually by the SA government. The levy rate for 2016/17 is 0.001266, and this rate is charged equally across all property types.

#### 7.2.2.7 *Other inclusions*

There are two equity-based reductions available for the ESL, designed for pensioners and other property owners with lower means to make ESL payments.

The first is a general remission. The general remission has the effect of reducing the prescribed levy factor from 0.001266 to 0.000260. This lower factor substantially reduces the total ESL payment for eligible property owners.

The second reduction is a concession of up to \$46 per year.

Eligibility for the general remission and/or a concession depend on the characteristics of the property owner. Certain property owners can be eligible for both reductions.

Alongside the common inclusion of providing reductions for pensioners, the ESL in SA provides concessions for a number of residents. These include residents who receive one of the following Centrelink payments:

- Newstart allowance;
- Sickness allowance;
- Widow allowance;
- Youth allowance;
- Partner allowance;
- Parenting Payment;
- Special benefit;
- Community Development Employment Project;
- New Enterprise Incentive Scheme;
- ABSTUDY;
- Austudy;
- Farm Household Allowance; and
- War widow pension under legislation of the United Kingdom or New Zealand.

The concession is up to a maximum of \$46 per year, and residents must send an application to the local government in order to be prove eligibility.

#### 7.2.2.8 *Final calculation*

The final calculation is:

*Fixed charge + (capital value x area factor x land use factor x levy rate) – concession = ESL*

To illustrate the ESL in practice, the SA government has provided two example cases, as illustrated in Figure 10 below.

**Figure 10: South Australian Emergency Service Levy examples**

| Example 1:   | Example 2:   |         |  |          |                             |          |  |              |         |  |         |                     |         |                             |         |
|--|--|---------|--|----------|-----------------------------|----------|--|--------------|---------|--|---------|---------------------|---------|-----------------------------|---------|
| Bill and Sue own a residential property valued at \$300 000 in Regional Area 4. As they are not entitled to any remissions, concessions or reductions, their ESL is calculated using the prescribed levy rate of 0.001266.   | Bruce and Mavis own (and reside in) a residential property valued at \$300 000 in Regional Area 4. As they are eligible for a general remission and a concession, their ESL is calculated using the effective levy rate of 0.000260. |         |  |          |                             |          |  |              |         |  |         |                     |         |                             |         |
| <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Fixed charge</td> <td style="text-align: right;">\$50.00</td> </tr> <tr> <td><b>+</b> Variable charge<br/>(\$300 000 x 1.0 x 0.4 x 0.001266)</td> <td style="text-align: right;">\$151.90</td> </tr> <tr> <td><b>=</b> ESL Amount Payable</td> <td style="text-align: right; border-top: 1px solid black;">\$201.90</td> </tr> </table> | Fixed charge   | \$50.00 | <b>+</b> Variable charge<br>(\$300 000 x 1.0 x 0.4 x 0.001266) | \$151.90 | <b>=</b> ESL Amount Payable | \$201.90 | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Fixed charge</td> <td style="text-align: right;">\$50.00</td> </tr> <tr> <td><b>+</b> Variable charge<br/>(\$300 000 x 1.0 x 0.4 x 0.000260)</td> <td style="text-align: right;">\$31.20</td> </tr> <tr> <td><b>-</b> Concession</td> <td style="text-align: right;">\$46.00</td> </tr> <tr> <td><b>=</b> ESL Amount Payable</td> <td style="text-align: right; border-top: 1px solid black;">\$35.20</td> </tr> </table> <p style="font-size: small; margin-top: 5px;">In this example the Government has contributed a total of \$166.70 to the Community Emergency Services Fund. This comprises the general remission of \$120.70 plus the concession of \$46.00.</p> | Fixed charge | \$50.00 | <b>+</b> Variable charge<br>(\$300 000 x 1.0 x 0.4 x 0.000260) | \$31.20 | <b>-</b> Concession | \$46.00 | <b>=</b> ESL Amount Payable | \$35.20 |
| Fixed charge   | \$50.00  |         |  |          |                             |          |  |              |         |  |         |                     |         |                             |         |
| <b>+</b> Variable charge<br>(\$300 000 x 1.0 x 0.4 x 0.001266)   | \$151.90   |         |  |          |                             |          |  |              |         |  |         |                     |         |                             |         |
| <b>=</b> ESL Amount Payable  | \$201.90   |         |  |          |                             |          |  |              |         |  |         |                     |         |                             |         |
| Fixed charge   | \$50.00  |         |  |          |                             |          |  |              |         |  |         |                     |         |                             |         |
| <b>+</b> Variable charge<br>(\$300 000 x 1.0 x 0.4 x 0.000260)   | \$31.20  |         |  |          |                             |          |  |              |         |  |         |                     |         |                             |         |
| <b>-</b> Concession  | \$46.00  |         |  |          |                             |          |  |              |         |  |         |                     |         |                             |         |
| <b>=</b> ESL Amount Payable  | \$35.20  |         |  |          |                             |          |  |              |         |  |         |                     |         |                             |         |

Example 1<sup>67</sup> shows the ESL charge for a \$300,000 residential property located in the metropolitan area. The property’s owners face the standard fixed charge of \$50, alongside a variable charge which is calculated by combining the cost of the property, an area factor of 1, a land use factor of 0.4 and the prescribed levy factor of 0.001266. Their total payment for the year is \$201.90

Example 2 shows the ESL for a property of the same value located in the same metropolitan area, but one that is eligible for both the general remission and a concession. This means that the property’s owners are charged using the effective levy rate of 0.000260, and also receive a \$46 concession. Their final payment for this year becomes \$35.20.

### 7.2.2.1 Collection agency

The ESL in SA is collected by local government, and can be paid online, by telephone, in person, by credit card or mail<sup>68</sup>.

### 7.2.3 Assessment against the legislated principles

#### **Stable**

The SA ESL provides consistent annual funding to the fire service in SA. It is based around capital value, location, and property type, none of which are factors likely to face significant fluctuation between years.

#### **Universal**

Unlike the ESL in Western Australia (discussed below), SA includes motor vehicles in its ESL charge. By charging a levy on both properties and motor vehicles, the ESL in SA ensures that all parties who receive benefit from provision of the fire service pay their portion of its funding. 25 percent of all emergency services callouts in SA are road-accident

<sup>67</sup> Source: [https://www.revenuesa.sa.gov.au/\\_data/assets/pdf\\_file/0003/7293/GuideToESL2017.pdf](https://www.revenuesa.sa.gov.au/_data/assets/pdf_file/0003/7293/GuideToESL2017.pdf)

<sup>68</sup> Source: <https://www.revenuesa.sa.gov.au/taxes-and-duties/emergency-services-levy/payments2>

related<sup>69</sup>, making up a reasonable portion of fire-service costs. The inclusion of motor vehicles in the ESL therefore improves the universality of this system, as well as promoting equitable charging across all who benefit from the service.

### ***Equitable***

By dividing properties by area and changing an area factor based on that area's level of fire-service cover, the ESL ensures that properties pay a charge that is proportionate to the services they receive. Rural properties are likely to receive a lower level of fire service coverage, and slower response times than metropolitan properties, and accordingly pay less for this service.

SA's ESL also includes two forms of income-rated reductions: a general remission and a concession. These reduce the ESL cost to pensioners and a wide range of residents with limitations on their ability to pay. These reductions could also be viewed as adding to the equitability of the system, as they link the amount charged to the resident's ability to pay.

### ***Predictable***

As far as providing a predictable stream of income for the SA government, the ESL operates effectively. As for predictability of the ESL charge from a household perspective, annual levy increases over the past few years have faced some unpopularity amongst residents. 2015 saw an increase in ESL charges of 9 percent, followed by a 1.5 percent increase in 2016. After these rises, the 2017 pre-budget announced a 1.1 percent reduction in ESL charges on metropolitan properties this year, due to a \$10 million surplus from last year's funds. The government stated that a wet 2016 summer saw a reduction in bushfires, and thus costs were running under budget.

### ***Flexible***

As discussed in the predictability section above, the SA government has the ability to adjust ESL rates from year to year, which allows a high level of flexibility to respond to budgeting changes or changes in the fire-services landscape.

## **7.3 Western Australia**

The main form of funding for fire services in Western Australia (WA) is also called the Emergency Services Levy (ESL), introduced in 2003. The ESL replaced the previous insurance-based funding system, and offered the following advantages, as described by the WA government:

- funding and equipment is allocated to where it is most needed – previously funding was only spent in the area it was collected, leaving some departments under-resourced;
- under the previous insurance-based system, not everyone contributed; and
- property owners are more aware of their contribution - the previous insurance-based system lacked transparency.

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<sup>69</sup> Source: <http://www.revenuesa.sa.gov.au/taxes-and-duties/emergency-services-levy/frequently-asked-questions2#concessions>.



### 7.3.1 How the ESL works in WA

Each year, the cost of operating fire services is determined through a budgetary process, where the required level of ESL funding is calculated. Table 8 below shows this budget for 2016/17, which includes around \$339 million in funding from the ESL.

**Table 8: Western Australia DFES funding budget, 2016/17**

| Funding Source                                 | \$Million      |
|--|----------------|
| Emergency Services Levy *                      | 338.891        |
| State Government Appropriation                 | 18.702         |
| Other Revenue & Commonwealth Government Grants | 28.171         |
| <b>Total DFES Funding</b>                      | <b>385.764</b> |

\* The ESL collections include \$16 million paid by the State Government for ESL on its own property.

The ESL in WA is charged exclusively on properties, and does not include provisions for a motor-vehicle charge. How much a property is charged depends on three factors:

1. location (this determines its ESL category and its given ESL rate);
2. the property's Gross Rental Value (GRV); and
3. the declared minimum and maximum ESL charge thresholds.

Other revenue includes some appropriation for direct user-charges<sup>70</sup>.

#### 7.3.1.1 Location

Properties in different locations are charged at different rates, on the basis that location affects the type and level of services available to the property. Properties with more services available to them contribute more, while those with a more basic level of fire protection pay a lower rate. Table 9 below illustrates the five ESL categories, alongside descriptions of the emergency services available to each location and the subsequent ESL rate.

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<sup>70</sup> [https://www.dfes.wa.gov.au/publications/Annual%20Reports/DFES\\_Annual\\_Report\\_2015-2016.pdf](https://www.dfes.wa.gov.au/publications/Annual%20Reports/DFES_Annual_Report_2015-2016.pdf).

**Table 9: Western Australia ESL categories and rates**

| ESL category | Location description             | Emergency response   | ESL Rates       |
|--------------|----------------------------------|--|-----------------|
| 1            | Perth Metropolitan Fire District | Network of CFRS stations and the SES   | 0.012672        |
| 2            | Regional Cities                  | CFRS station plus a VFRS brigade and the SES   | 0.009504        |
| 3            | Urban Metropolitan Area          | A VFRS brigade and/or BFB supported by the network of CFRS stations in the metropolitan region and the SES | 0.006336        |
| 4            | Country Towns                    | VFRS and the SES or BFB equipped with breathing apparatus and the SES                                      | 0.004435        |
| 5            | Pastoral / Rural Areas           | Communities supported by the state-wide SES network and generally a BFB                                    | \$71 fixed rate |
|              | Mining Tenants                   |  | \$71 fixed rate |

*Terms*

|      |   |
|------|---|
| CFRS | Career Fire and Rescue Services                 |
| VFRS | Volunteer Fire and Rescue Service               |
| BFB  | Local Government Bush Fire Brigades             |
| SES  | State Emergency Service                         |
| VFES | DFES Volunteer Fire and Emergency Service Units |

The WA government provides guidelines on where the boundaries between zones lie, and which municipalities fit within which zones. As Table 2 shows, the ESL rate is higher for metropolitan residents, who receive the most comprehensive fire-protection service, and thus pay a larger proportion of the levy.

The WA government is able to adjust the set of ESL rates from year to year in accordance with the fire-service's funding requirements.

**7.3.1.2 Gross Rental Value**

Gross Rental Value (GRV) is a measure used to approximate the amount that a property could be rented for in a year. The WA government states that it has chosen to use GRV in the ESL calculation because it is an accepted measure for calculating what a property is worth, and generally an indication of the owner's capacity to pay. GRV's are also calculated by an independent body called the 'Valuer General at Landgate', and is an established valuation system in WA.

**7.3.1.3 Minimum and maximum ESL thresholds**

The minimum and maximum charges are an integral part of the ESL, with the aim of equitable charging for each property. The WA government states that the minimum and maximum charges are in place to ensure:

*"property owners at the lower end of the scale pay enough while those at the top don't pay too much."*

Under the minimum and maximum charge section of the ESL, properties are divided into

two categories, which are effectively residential and non-residential. Table 10 below gives the various minimum and maximum ESL thresholds, per ESL category for these two property types.

**Table 10: Western Australian minimum and maximum thresholds**

| ESL category | Vacant, Residential and Farming |         | Commercial, Industrial and Miscellaneous |           |
|--------------|---------------------------------|---------|--|-----------|
|              | Minimum                         | Maximum | Minimum                                  | Maximum   |
| 1            | \$71                            | \$375   | \$71                                     | \$213,000 |
| 2            | \$71                            | \$275   | \$71                                     | \$156,000 |
| 3            | \$71                            | \$184   | \$71                                     | \$104,000 |
| 4            | \$71                            | \$130   | \$71                                     | \$73,000  |
| 5            | \$71 per rate notice            |         | \$71 per rate notice                     |           |
| Mining       | \$71 per rate notice            |         | \$71 per rate notice                     |           |

With these thresholds in place, even if a household in the city centre has a GRV of \$10 million, it faces a maximum ESL charge of \$375. Were that same \$10 million property to be located in a country town (ESL category 4), it would face a maximum of a \$130 in ESL charge. The same system applies for commercial properties, however as is evident the maximum threshold is significantly higher for commercial properties. The logic behind this system is that properties with higher GRV are not overcharged to an extent that is grossly disproportionate to their benefit from the fire service.

#### **7.3.1.4 Final calculation**

When each of these elements are put together, the final calculation for WA's ESL is as follows:

*ESL category rate x GRV (limited by maximum thresholds per category and building type) - concession = ESL*

#### **7.3.1.5 Other inclusions**

As with other rates and charges in WA, pensioner and senior rebates are available for the ESL charge. Interest of 11 percent per annum can be charged in the event of late payment.

#### **7.3.1.6 Collection agency**

The ESL is collected by local governments, who send property owners their annual ESL charge alongside their rates charges. Each local council then sends the collected ESL funds directly to the Department of Fire and Emergency Services. Local governments are paid an annual fee to assist with covering the cost of billing and collecting the levy.

#### **7.3.2 Assessment against the legislated principles**

##### **Stable**

The WA ESL is billed to property owners alongside their annual rates, and provides a stable form of funding for the Department of Fire and Emergency Services in WA.

## **Universal**

A large reason the WA government chose to move from the previous insurance-based scheme to the ESL was the previous insurance scheme lacked universality, as the uninsured were excluded and the underinsured were undercharged. The ESL, which is effectively a property tax, on the other hand, ensures all properties are charged. WA does not include a motor vehicle charge; the reason for this is unclear.

## **Equitable**

The purpose of the location-based ESL factors is to charge properties more equitably. Metropolitan properties enjoy a more extensive level of fire coverage, and are likely to receive a prompt and potentially better-equipped response in the event of a fire than their rural counterparts. Accordingly, these properties pay a higher proportion of the ESL. According to the WA Department of Fire Services, ESL funding for 2015/16 was \$323.3 million, with 82.3 percent funded from metropolitan sources with the remaining 17.7 percent from regional sources<sup>71</sup>.

The minimum and maximum thresholds included in the ESL are aimed at reducing the possibility of under or overcharging. Because the ESL is calculated using the GRV of each property, higher-value properties pay a higher ESL charge. These thresholds ensure that this charge does not go beyond what is reasonable and fair for these properties. However, it appears that the large discrepancy between the maximums of residential and commercial levy contributions could be improved by further risk adjustments.

Another aspect of equitability is whether or not the levy incorporates measures to incentivise self-management of fire hazards, and thus account for the lower risk profile of properties with sprinkler and alarm systems. The WA system does not include this sort of provision.

## **Predictable**

The factors that make up the ESL in WA are relatively stable, and are likely to produce a fairly predictable annual level of funding.

As for predictability for property owners, the fact that the ESL rate is adjusted annually by the WA state government means that property owners may face fluctuating ESL charges from year to year. The 2016/17 ESL was 5.7 percent higher than the previous year<sup>72</sup>.

The state government also carries out annual reviews of the ESL category boundaries and classifications. If there is a change to the delivery of emergency services in a certain area, the boundaries of affected properties are amended accordingly. The WA government provides the following reasons for a possible boundary change:

- a change in the delivery of emergency services, ie, the opening of a new fire station;
- the development of vacant land, expanding the response area of that area's fire department; and
- the development of vacant land into properties which results in a change of

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<sup>71</sup> Source: [https://www.dfes.wa.gov.au/publications/Annual%20Reports/DFES\\_Annual\\_Report\\_2015-2016.pdf](https://www.dfes.wa.gov.au/publications/Annual%20Reports/DFES_Annual_Report_2015-2016.pdf).

<sup>72</sup> Source: <https://www.erawa.com.au/cproot/17088/2/ESL%20Review%20-%20Issues%20Paper.PDF>.

service level.

In accordance with these ongoing developments, each year the state government outlines boundary changes and amendments to the five ESL categories. Annual boundary updates and ESL category changes may result in confusion among property owners, especially if these reclassifications impact on the ESL of a property multiple times. For commercial properties in particular, which generally face a significantly higher ESL, these changes can have a large impact on the levy expense.

### **Flexible**

The annual review of ESL rates and boundary categories as mentioned above, while reducing the predictability of the levy for property owners, provide the state government with more flexibility to adjust to changes in the landscape or new funding requirements.

## **7.4 Queensland**

Queensland has one of the most longstanding property levies of the fire services in Australia, first introduced in 1984. The levy has evolved over the years to what is now known as the 'Emergency Management Levy' (EML). Queensland's EML is solely applied to property, with motor vehicles not levied. In 2015/16, the EML represented approximately 74 percent of the fire-service's total funding with approximately 13 percent from appropriation (government) revenue, 9 percent from direct user charges and fees and 5 percent from grants<sup>73</sup>.

### **7.4.1 Calculation**

The Queensland EML has two components; the levy class (a location-based factor) and levy group (based on the use of the property).

#### **7.4.1.1 Levy class**

Five different levy classes exist, with properties classified on the basis of the kind of fire services provided within their given area. Table 11 below shows these levy classes.

**Table 11: Queensland's Emergency Management Levy classes**

| Levy class | Level of fire service  |
|------------|--|
| A          | 24 hour, 7 day, permanent staff (at least 16 full time fire officers); |
| B          | Mixed auxiliary and permanent staff (6-15 full time fire officers);    |
| C          | Mixed auxiliary and permanent staff (1-5 full time fire officers);     |
| D          | Currently auxiliary staff only; and                                    |
| E          | Remainder of State.  |

<sup>73</sup> Source: <https://www.qfes.qld.gov.au/about/annualreport/Documents/2015-16/QFES%20Annual%20Report.pdf>.

The levy charged on a property is based on the level of fire-service provision in the area or the district. Properties in metropolitan areas fall under levy class A, which is charged the highest level of levy. Details of which districts fall under which levy class are provided in the 'Fire and Emergency Services Regulation 2011'.

#### 7.4.1.2 Levy group

The second component of the EML is the levy group, which is based on the use of the property. Properties are categorised into 16 levy groups, with those in levy group 1 paying the lowest EML, and levy group 16 paying the highest. Vacant land falls under levy group 1, while residential properties are in levy group 2. Groups 3-16 include commercial and industrial properties, increasing in size and risk factors<sup>74</sup>. Appendix 2 shows these 16 groups, which are made up of over 160 property types.

Each of the 16 levy groups has a corresponding set of charges across the 5 service-level levy classes. For example, those in levy group 2, which includes all residential properties, small offices and clubrooms are charged at the following rates:

- Class A - \$203.20
- Class B - \$161.20
- Class C - \$119.20
- Class D - \$99.60
- Class E - \$99.60

Levy group 3, which includes churches, libraries, small guesthouses and service stations, are charged at the following rates:

- Class A - \$492.80
- Class B - \$392.40
- Class C - \$292.80
- Class D - \$244.00
- Class E - \$244.00

Levy group 8 is made up of industrial buildings (4001 – 5500sqm), commercial buildings (3501 – 5500sqm), small tertiary education centres and tourist attractions over 10,000sqm. They are charged at the following rates:

- Class A - \$7,296.80
- Class B - \$5,740.40
- Class C - \$4,375.00
- Class D - \$3,647.00
- Class E - \$1,458.40

The highest levy group, group 16 is made up of multi-floor (20 level +) casinos and oil or fuel depots and refineries with a capacity of over 250 million litres. Group 16 pays the following rates:

- Class A - \$397,576.40
- Class B - \$318,060.60
- Class C - \$238,541.40

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<sup>74</sup> Source: <https://www.qfes.qld.gov.au/about/Documents/FAQs-for-General-Public.pdf>.

- Class D - \$198,786.00
- Class E – \$1,458.40

#### 7.4.2 *Collection agency*

The EML is collected by local councils alongside rates paid by each property.

#### 7.4.3 *Other inclusions*

Some property types in Class E (located in rural areas) are not included in the EML. These are:

- cemetery;
- club that is not a licensed premise;
- church, church hall or community hall;
- community protection centre;
- library, museum, art gallery or zoo;
- tourist attraction (less than 4050m<sup>2</sup>);
- airfield; and
- showground or racecourse.

If located in more metropolitan areas (Classes A – D) then these property types are all liable to pay the EML.

A 20 percent discount is available on the EML for the principle place of residence for pensioners and repatriation health card owners.

#### 7.4.4 *Rural fire levy*

Some rural districts in Queensland are not only obligated to pay the EML, they are also charged an annual 'Rural fire levy'. The purpose of this charge is to contribute to funding of small volunteer fire services in certain districts. Table 12 shows these charges below.

**Table 12: Queensland's Rural Fire Levy rates**

| <b>Rural Fire Levy 2016/17</b>                                |      |
|---|------|
| Black River & District, Rollingstone                          | \$50 |
| Bluewater   | \$55 |
| Bluewater Estate, Paluma                                      | \$35 |
| Clevedon, Cungulla, Rupertswood                               | \$40 |
| Crystal Creek, Saunders Beach, Lime Hills Elliott, West Point | \$30 |
| Horseshoe Bay, Major Creek, Reid River                        | \$25 |
| Oak Valley, Purono  | \$20 |
| Rangewood   | \$60 |
| Toolakea  | \$12 |

As for their EML payments, rural properties fall under levy class E, so households are charged \$99.60 of EML alongside this rural fire levy. "Double charging" rural properties has proven somewhat unpopular within these communities. Not only is it confusing having two separate charges, but some rural fire departments claim that despite the fact residents are now being charged more, the rural fire departments themselves are not receiving a reasonable portion of the EML funding<sup>75</sup>.

#### *7.4.5 Assessment against the legislated principles*

##### **Stable**

The Queensland EML system provides consistent and stable funding for the fire service in Queensland. Contributions are solely funded through a levy on property collected by local authorities.

##### **Universal**

The EML is an effective system for achieving the goal of universality as all property owners contribute to funding the fire service in Queensland. As with other Australian states, one of the major problems surrounding Queensland's previous insurance-based levy was undercharging of the uninsured and underinsured. The property-charge system on the other hand ensures that each property owner who receives benefits from the provision of fire services contributes to funding the services.

Motor vehicles are not included in the EML in Queensland. Motor-vehicle owners can thus be seen as uncharged for the emergency services the fire services provides.

##### **Equitable**

Properties in Queensland are classified by both levy classes and levy groups, the combination of which categorises properties relatively comprehensively in terms of their potential benefit from/cost to the fire services. Thus, for example, while large apartments in the city centre which enjoy reasonable cover from the fire service against the risk of pay a reasonably high EML, small libraries in the country side are charged a lot less.

While other fire levies often divide properties into commercial, residential, industrial and so forth, the EML's 16 different levy groups divides property types further, according to size and risk factors. Queensland's use of 5 levy classes from A - E also separate properties effectively in terms of the level of fire service they receive. Furthermore, and importantly, unlike most levy-based funding regimes, Queensland's levy is not based on property value but risk and location. This is a departure from other regimes that apply a property-value based system which (if not adjusted for risk and use) is an ability-to-pay funding structure as opposed to Queensland's beneficiary-pays approach.

Rural properties in Queensland are charged both the 'Rural Fire Levy' as well as the EML. While their EML charge is significantly lower than that on metropolitan properties, having two separate charges may cause some residents to question the service they receive for both of these charges.

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<sup>75</sup> Source: <http://www.abc.net.au/news/rural/2014-11-25/rural-fire-volunteers-fuming-about-new-emergency-services-levy/5916430>



The levy is collected solely from property tax and therefore some services that may be consumed by people not from the area – eg, rescues from car crashes - will be cross subsidised by property owners in the area of the crash.

As it stands the levy does not appear to incentivise self-protection or risk mitigation incentives. The funding regime for the Queensland fire service could be more equitable if the levy system included risk-mitigation incentives. This would charge properties that are already mitigating risk (and therefore at a lower probability of use) less, more closely reflecting a user-pays approach).

### ***Predictable***

The Queensland government is able to see the levy group and levy class of all properties in its state, and can thus predict the likely level of funding per annum. On the other hand, regular adjustments to the levy rates may create a lack of predictability for property owners.

### ***Flexible***

The levy class and levy group systems provide flexibility to the Queensland state government to ensure an up-to-date and accurate charging mechanism.

For example, if a fire department which was once Levy class C - mixed auxiliary and permanent staff (one to five full-time fire officers) - grew to have eight full-time officers, the residents would subsequently be charged at the levy class B level. This system does not involve having to adjust borders on a map of the state, rather it uses the fire department size as the basis for classification.

The Queensland state government is also able to annually update the levy rates for each group and each levy class, in response to cost or structure changes within the fire departments.

## **7.5 Other funding regimes in Australia**

While the levy systems in SA, WA and Queensland have been identified as three best-practise examples in Australia, we consider briefly below the systems in place in the other three states.

### ***7.5.1 Victoria***

In 2013, Victoria established the 'Fire Services Property Levy' (FSPL), in place of the previous insurance-based funding system. The FSPL operates in a similar way to the property levies used in the other three states previously mentioned. Due to its similarity to these systems, this subsection provides only a brief overview of the FSPL.

As with the ESL in South Australia, the FSPL is made up of a fixed and a variable charge. The 2017/18 fixed-charge rates are \$107 for residential properties and \$216 for non-residential properties.

The variable charge is based on three components; capital improved value (CIV), location and property type. Each property is charged on a 'cents per \$1,000 of capital improved value' basis. The level of charging depends on whether the property is located in an area covered by the Metropolitan Fire Brigade (MFB) or the Country Fire Authority (CFA). The

variation in rates between CFA and MFB represents the different costs associated with funding each service. A full breakdown of the emergency and non-emergency response roles of both of these organisations is provided in Appendix 5.

Finally, properties are divided into six residential and non-residential property types. FCPL rates vary across property types, in accordance with the difference in cost/potential cost to the fire service. The variable rate for properties in Victoria is displayed in Table 13 below.

**Table 13: Variable rates on properties in Victoria<sup>76</sup>**

| Property sector                            | Country Fire Authority | Metropolitan Fire Brigade |
|--|------------------------|---------------------------|
| Residential                                | 12.2                   | 5.6                       |
| Commercial                                 | 99.9                   | 52.3                      |
| Industrial                                 | 157.4                  | 81.5                      |
| Primary production                         | 24.8                   | 13.8                      |
| Public Benefit                             | 12.6                   | 5.6                       |
| Vacant (excluding vacant residential land) | 46.7                   | 6.5                       |

Table 13 above shows the levy rates payable to the different fire districts by property types. It shows the highest rate is charged to industrial property under CFA jurisdiction at \$1.574 per \$1000 of capital improved value and the lowest rate is charged to residential and public benefit property under MBF jurisdiction at 5.6 cents per \$1,000 of capital improved value.

An interesting point about the FSPL in Victoria is that, unlike other states, the variable charge for regional properties is around double that for metropolitan properties. One relevant contributing factor to this is that Victoria has a long history of proneness to bushfires, including the "Black Saturday" bushfires in 2009. Emergency response for this event cost the state \$65 million<sup>77</sup>. Proneness to large-scale events of this nature mean that the CFA in Victoria must be highly prepared for bush and wildfire, with a high funding requirement for this department.

Finally, the FSPL also includes a \$50 concession for pensioners, war veterans, widows and those who already receive rates concessions.

Adding each of these components together, the FSPL charge takes the following format:

$$\text{Fixed charge} + (\text{capital improved value} \times \text{levy rate}) - \text{concession (if applicable)} = \text{FSPL}$$

As an example, the calculation for a \$300,000 residential property, based in the MFB area, with no concession is \$123.80. Were this same property covered by the CFA, this charge is \$143.60. Despite the fact the variable charge for properties in the CFA area is approximately double that of MFB, the combination of fixed and variable charge results in only a 16 percent higher charge for the CFA property in this example.

<sup>76</sup> Rates are measured as cents per \$1,000 of capital improvement value.

<sup>77</sup> Source: <http://australianbusinessroundtable.com.au/assets/documents/Report%20-%20Social%20costs/7.%20The%20cost%20of%20natural%20disasters%20-%20Australian%20experiences.pdf>.

## 7.5.2 Tasmania

Tasmania employs a hybrid funding system, which, alongside funding from the state government, is made up of three main revenue streams. These are a property tax called the 'fire services contribution'; the insurance fire levy; and the motor vehicle levy.

The fire services contribution is charged on the capital value of properties, at a rate set by each local council, with a required minimum charge of \$38 per property. This minimum charge is indexed to CPI, and thus can fluctuate from year to year accordingly.

The insurance fire levy is charged monthly, at a rate of 2 percent for marine-cargo insurance, 14 percent on aviation hull insurance and 28 percent on other classes of insurance. The motor vehicle levy is currently charged at a flat rate of \$17 per vehicle.

Tasmania uses a combination of these three methods to charge residents, most of whom have an obligation to pay all three charges, while families with two cars will even pay this levy twice. This multifaceted system would likely result in complications for fire service budgeting, as well as potential unrest among residents who may feel they are being heavily charged.

### 7.5.2.1 New South Wales

New South Wales (NSW) predominantly funds its fire service through the Emergency Services Levy (ESL). The ESL is quite different from that used in other states in that it is charged to insurers at the end of each year who pass the cost onto policy holders. Insurers are given estimated required contributions from the NSW government at the end of each year based on the insurers estimated market share for that year. Final calculations are then given to the insurers approximately several months after when market share data is finalised. This means that insurers estimate the required ESL they will be required to pay and pass that on to the clients based on the open insurance policies relating to NSW Home (including onsite caravan), Motor and Fire and Industrial Special Risks (ISR) insurance policies<sup>78</sup>. It is unclear from available information whether the charging system allows for capping of contributions or the level of differentiation that is made by insurers when charging the levy to clients. It appears that there is little legislative or regulated prescription as to what the levy rates are and how they are charged. However, the NSW government does have oversight and audit ability to ensure insurance companies are acting in good faith<sup>79</sup>.

It has been estimated that the ESL adds about 21 percent on average to household insurance premiums. Some insurers also collect a portion of ESL from motor insurance premiums and some commercial insurance products<sup>80</sup>. This means that there is no pre-determined or set levy rate for property of users. Cost is added to premiums for all contributors on a year to year basis. The split between residential and non-residential contributions and the level of differentiation among contributors and the presence of any capping is unclear.

The ESL represents approximately 74 percent of the funding collected, with approximately 12 percent contributed by local governments (if the fire service has a station in the council

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<sup>78</sup> Source: <http://www.dailytelegraph.com.au/news/nsw/fire-and-emergency-services-levy-delayed-insurance-companies-say-bills-will-rise-by-thousands/news-story/630ac46b6c5a51e95d65d9198fd6d5a8>.

<sup>79</sup> Source: <https://www.insuranceandrisk.com.au/nsw-emergency-services-levy-transition-the-key-facts/>.

<sup>80</sup> Source: <https://www.insuranceandrisk.com.au/nsw-emergency-services-levy-transition-the-key-facts/>.

fire district, otherwise the contribution from the local authority is not required) and the remaining 14 percent coming from the state government<sup>81</sup>. Fire Rescue NSW charges users for attending non-fire-related hazardous material emergency for more than one hour or attending repeat avoidable false-alarm calls.

In December 2015, a reform was announced to remove the insurance-based ESL and introduce the Fire and Emergency Services Levy (FESL), a property-based levy which would be collected by local authorities and charged on council rates.

The reform was first recommended following a 2013 parliamentary inquiry which found that 36 percent of landowners didn't have home or contents insurance. A property-based levy would mean the uninsured contributed to the funding of the fire service<sup>82</sup>.

Under the proposed changes to the funding system, the average fully insured household was estimated to be better off with the average levy paid being estimated as \$185, representing an average saving of \$47 for a fully insured household. The estimate of the government was that 58.1 percent of the fire service's costs would be recovered from residential, 26.7 percent would be recovered from commercial land, 10.4 percent would be recovered from industrial land, 4.6 percent would be recovered from farmland and 0.3 percent from public-benefit land (defined as churches, parks and alike).

Reporting around the time indicates that central urban areas like Sydney would face steep increases in levy contributions due to their high property values relative to other areas<sup>83</sup>. Other reports show large increases to some commercial property owners who, in some documented examples, expected increases from \$490 under the insurance levy to \$3,700 under the property levy<sup>84</sup>.

The changeover was scheduled for July 1<sup>st</sup>, 2017 but the NSW government announced on May 30<sup>th</sup>, 2017 that it intended to defer the introduction of the new levy. The reason given was the unfair outcomes the new regime was likely to create for small/medium businesses. In order to address these issues, the government has decided to delay implementation, and is currently reviewing again the levy system.

## 7.6 Lessons for FENZ from the Australian funding regimes

FENZ can take some guidance from the Australian examples for funding fire services. Many Australian states have adopted and implemented sustainable funding regimes for fire and emergency services that have direct allowances for risk, based on the likelihood of service and the service provided in the event of use. SA, WA, Queensland and Victoria all differentiate to varying degrees between property type and location of a property when charging fire-service levies.

Queensland breaks levy contributors into five broad groups based on the likely service that would be received in the area of the contributor. Areas with twenty-four-hour, seven day a week fire houses that employ at least sixteen full time fire fighters contribute the most

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<sup>81</sup> Source: <https://www.fire.nsw.gov.au/page.php?id=48>

<sup>82</sup> Source: <http://www.smh.com.au/nsw/nsw-homeowners-set-to-pay-185-annual-fire-services-levy-via-council-rates-20170306-qurif9.html>

<sup>83</sup> Source: <http://www.smh.com.au/nsw/revealed-what-you-will-pay-under-the-new-fire-services-levy-20170428-gvumk1.html>

<sup>84</sup> Source: <http://www.smh.com.au/nsw/its-a-shambles-cabinet-considering-fire-levy-changes-amid-furore-20170524-gwbyax.html>

and areas that are covered by auxiliary staff only contribute the least. This is sensible because if a fire station is well staffed and equipped then the surrounding properties are the direct beneficiaries of the readiness and should therefore take on a larger funding burden. Queensland then overlay this this funding by likely response rate with grouping by property use based on likely required response in the event of an incident and the risk of an incident occurring. There are sixteen property use groups aggregated from 160 property types. Residential property or small commercial property (single-level shop fronts) located in a well-staffed and equipped area contributes \$203.20 whereas, at the other end of the spectrum, 20+ level casinos (containing very high risk and high required response in an incident) and large oil or fuel depots (with very high required response and high risk of an incident) both belong to the highest property use group and contribute almost \$400,000 per year.

Queensland offers a good example of beneficiary pays for the response rate and response requirement the contributor would receive in the event of an incident. It implements cost-recovery principles consistent with minimising cross-subsidisation between contributors.

SA and WA have funding that is levied relative to property value and is adjusted for location, with metro areas typically contributing less than more remote areas, representing contribution to readiness and response received by a user. SA and WA also include adjustments for property type. SA adjusts the contributions by adding an additional rate on the property value that varies by property type, with industrial-use property having the highest rate (therefore contributing more) and special-use property (eg, churches) having the lowest rate. WA doesn't adjust the overall levy rate but applies minimum and maximum contributions by property type. Victoria also charges based on property value and differentiates levy rates by six property use categories and which fire service jurisdiction the property is in (Victoria has two fire-service jurisdictions).

Overall, the general approach employed by most Australian states show care taken to minimise cross-subsidisation among beneficiary groups, with those who receive (or are likely to receive) the most services contributing the most. This is achieved by differentiating the levy by broad property type and estimating the costs by broad user groups. While this approach necessarily entails somewhat more complexity than is the case in New Zealand, the Australian fire services and their users seem to be able to manage the increased complexity without any undue difficulties.

## 8 Funding of fire and emergency services in other countries

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### 8.1 Introduction

This section firstly presents a high-level summary of the general funding regimes for fire services from various different countries. After investigating the general approaches, we have identified two specific examples of best practice. In Section 8.3 we present the fire-service funding system for Washington State, and in Section 8.4 we present the regime employed by Florida State. Section 8.5 summarises some other operations considered throughout the course of this study.

### 8.2 High-level summary of fire-service funding in other countries

#### 8.2.1 *England*

There are 46 fire authorities in England, including 6 metropolitan, 24 combined authorities, 15 county authorities and the London Fire and Emergency Planning Authority. These authorities are funded firstly through general government funding from the Department for Communities and Local Government, which provided about £1 billion of funding in 2015/16. In the last four years however, the level of government funding for fire authorities has fallen by an average of 28 percent in real terms. The remainder of funding is primarily made up of local council rates, and council tax freeze grants from the government, varying in level per municipality<sup>85</sup>. In the last 5 years, metropolitan fire authorities increased their council tax rate by approximately 6.3 percent to help make up for reductions in central government funding. The central government funding decrease over the last 5 years has nevertheless resulted in spending cuts and a reduction in protection and prevention activities across the country, with some authorities reducing the number of firefighters sent to certain incidents.

#### 8.2.2 *United States*

States and municipalities in the United States operate a combination of public and private fire departments, and use a variety of funding methods. The most common method of funding is through property taxes, usually set at a rate per dollar of assessed property value. Some areas like Casper, Wyoming have specific user charges for certain fire service call-outs. Community fundraising is a common funding method among local brigades, while others, like Kent RFA, gain revenue from contract services with neighbouring municipalities. Having analysed the cost-recovery systems used across various states, the 'fire-benefit charge' in Washington and the 'Fire Assessment' in Florida were the two unique charging systems that stood out. These two states are discussed in detail in Sections 8.3 and 8.4 below.

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<sup>85</sup> This report provides a breakdown of the funding system in England  
<http://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7482>

### **8.2.3 Canada**

Canada is made up of around 3,500 fire departments, which tend to be the responsibility of each respective city and municipality. Toronto Fire Service (TFS) is the largest municipal fire service in Canada, consisting of 83 fire stations and over 3,000 personnel. Their operating budget for 2017 is \$440 million, of which 96 percent is from property taxes<sup>86</sup>. The City of Vancouver also funds its fire service through general council rates. In 2017, fire service costs in the City of Vancouver are budgeted at \$119 million and are funded through the City Council's operating revenues, which are made up of property tax (57 percent), a utility fee (19 percent) alongside additional fees and income<sup>87</sup>.

### **8.2.4 Singapore**

Fire protection services in Singapore are one role of the Singapore Civil Defence Force (SCDF), who also operates rescue, emergency and ambulance services. The SCDF is operated by the Ministry of Home Affairs, funded through general government revenue<sup>88</sup>.

### **8.2.5 France and Italy**

The fire service in France is split into two categories, one provisioned by the French Military in Paris and Marseille, while in the rest of the country the service is operated under the Ministry of the Interior. The Paris Fire Brigade is run by the French Army, while the Naval Fire Battalion provision fire services in Marseille<sup>89</sup>. Fire and rescue service in Italy is provided by the Ministry of Interior.

### **8.2.6 Brazil**

As with the French system, fire services in Brazil are largely provided by the military, whereby all firefighters are members of the military police. Private businesses which legally require fire protection acquire services from the private market.

### **8.2.7 Denmark**

Denmark's fire service provision is unique in that 2/3rd of the country's fire services are provided by a private multi-national organisation called Falck (discussed in section 8.5 below).

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<sup>86</sup> Source: [http://www1.toronto.ca/City%20Of%20Toronto/Strategic%20Communications/City%20Budget/2017/Analyst%20Notes/Operating/Fire\\_op\\_Jan4\\_158p.pdf](http://www1.toronto.ca/City%20Of%20Toronto/Strategic%20Communications/City%20Budget/2017/Analyst%20Notes/Operating/Fire_op_Jan4_158p.pdf)

<sup>87</sup> Source: <http://vancouver.ca/files/cov/vancouver-2017-budget.pdf>

<sup>88</sup> [http://www.singaporebudget.gov.sg/budget\\_2013/expenditure\\_overview/mha.html](http://www.singaporebudget.gov.sg/budget_2013/expenditure_overview/mha.html)

<sup>89</sup> Source: <http://www.fireengineering.com/articles/2008/11/fire-services-in-france-an-overview-of-command-training.html>



## 8.3 Washington State's fire-benefit charge

### 8.3.1 Introduction

A number of fire departments in Washington State operate with a mixed funding model, which typically includes a property tax alongside a Fire Benefit Charge (FBC). The FBC is a service-benefit charge on properties, based on the principle of proportionately spreading the costs of the fire service over those who benefit from it.

Washington state law allows districts to collect up to 60 percent of their operating budget from the FBC. Districts without the FBC can charge each property a property tax of up to \$1.50 per \$1,000 of assessed property value, while districts with the FBC can charge up to \$1.00 per \$1,000<sup>90</sup>. Additional revenue tends to include service contracts with other fire departments, grants and fundraising as well as user charges for services such as transport in medical emergencies that are charged to the beneficiary's insurance and permit fees<sup>91</sup>.

The primary focus of our analysis of the Washington State is the FBC and how it operates as a cost-recovery mechanism for the state's fire departments. It must be kept in mind however, that though a number of departments in Washington use the FBC as a revenue stream, it usually contributes less than half of their budget, with most of the other revenue coming from the property tax.

### 8.3.2 Components of the fire-benefit charge

The FBC charges properties on the basis of specific attributes that influence the property's fire risk and the associated costs of fire-service provision. The calculation is as follows:

*FBC = property size ( $\sqrt{\text{square feet}}$ ) x 18 x category factor x response factor x discount x hazard factor*

This formula was generated by the National Fire Academy (NFA) and Insurance Services Office (ISO) in Washington. The five variables of property size, category factor, response factor, discount and hazard factor are discussed in turn below.

#### 8.3.2.1 Property size

The FBC charges are based on the size (square footage) of each property. Property value is not part of the FBC calculation. This means that even if one person's house is worth twice as much as another's, if they are the same size they will be charged the same amount. The justification for this is that the value of the house is not the main determinant of the cost of putting out a fire. What does impact on the costs however is the size of the house, as it will likely affect the scale of the fire. This applies even more for commercial buildings, where there will clearly be a large cost difference between attending a fire in a 3,000 square foot office than its 300,000 square foot neighbour.

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<sup>90</sup> The Kent Regional Fire Authority's (part of Puget Sound) regular levy for the year 2015 was \$0.95 per \$1,000 on an assessed valuation of \$16,630,159,825 for a total regular levy of \$15,801,200, <http://portal.sao.wa.gov/ReportSearch/Home/ViewReportFile?isFinding=false&arn=1018540>

<sup>91</sup> For reference the 2016 year the Valley Regional Fire Authority received approximately 48.5 percent of its funding through the Fire Benefit Charge, 42.5 percent through property tax, 1.5 percent transport fees, 5.5 percent through government contracts and grants, 1.4 percent through permits and fees and 0.7 percent classified as other revenue. <http://www.vrfa.org/pdf/2016%20VRFA%20Annual%20Report%20Low%20Res.pdf>



### 8.3.2.2 Category Factor

There is some variance across districts in the ways properties are categorised, however they are generally split into the following categories:

- residential;
- mobile homes;
- apartments; and
- commercial.

The commercial category covers all non-residential properties, including storage facilities, warehouses and offices.

Each property type has a category factor (CF). This accounts for the cost variation between servicing different types of properties. Table 14 below illustrates the property-type category factors for four districts in Washington. Category factors were not available for the other districts. The figures below are all for a property of the same size<sup>92</sup>.

**Table 14: Category factor for each property type across Washington fire districts**

|                 | Residential | Mobile Home | Apartment | Commercial | Mobile Home pad |
|-----------------|-------------|-------------|-----------|------------|-----------------|
| Central Piere   | 0.44        | 0.33        | 0.45      | 1.0        | -               |
| Puget           | 0.8         | 0.75        | 1.6       | 1.1        | \$50            |
| Woodville       | 0.28        | 0.15        | 0.02      | 1.0        | -               |
| Valley Regional | 1.0         | 0.8         | -         | 1.0        | -               |

This table illustrates quite a significant variation in category factors (CFs) between these four districts. Central Piere's CF for commercial is 127 percent higher than for residential property, while Puget's is 37 percent higher, Woodville's is 250 percent higher, and Valley Regional charge residential and commercial properties equally.

As for apartments, while Woodville's CF is surprisingly small on this property type, in Puget district they face the highest CF among property types. Valley Regional do not include a separate cost factor for apartments. It can thus be assumed that Valley Regional treats apartments as residential properties.

Puget are the only district who specifically charge for mobile home pads, at a flat rate of \$50.

### 8.3.2.3 Response factor

Response factor is the portion of the formula that accounts for the cost to the fire department of providing its services to a given property. Renton Regional Fire Authority describes its response factor as follows:

*"The effective response force factor is relational to the size of force in firefighters and equipment required to deliver the required fire flow".*

<sup>92</sup> Source: <http://pugetsoundfire.org/wp-content/uploads/2016/12/2017-Benefit-Charge-Formula-Sheet-1.pdf>  
[http://www.centralpiercefirer.org/user\\_defined/Documents/FireBenefitCharge/FBC-FAQ.PDF](http://www.centralpiercefirer.org/user_defined/Documents/FireBenefitCharge/FBC-FAQ.PDF)

Northshore, Valley Regional and Woodville all describe this response factor figure as a 'Cost per Gallon' of providing fire services.<sup>93</sup>

#### 8.3.2.4 Discounts

A common feature across each district's FBC is the inclusion of discounts for elderly, properties with sprinklers, alarms and other factors. Table 15 below outlines the discounts incorporated into the FBC in six districts.

**Table 15: FBC discounts across Washington fire districts**

|                 | Elderly discount | Sprinklers discount | Alarm discount | Agriculture discount |
|-----------------|------------------|---------------------|----------------|----------------------|
| Central Piere   | Y                | 20%                 | N              | N                    |
| Northshore      | Y                | 50%                 | N              | N                    |
| Puget Sound     | Y                | 10%                 | Y              | Y                    |
| Renton Regional | Y                | 10%                 | Y              | Y                    |
| Valley Regional | Y                | 10%                 | N              | N                    |
| Woodville       | Y                | 30%                 | N              | N                    |

All districts have a discount for the elderly. Both the eligibility criteria and the size of the elderly discounts vary between districts, however they tend to be based on age and income factors.

The sprinkler discount is also common across all districts, ranging from a 10 to 50 percent reduction in the FBC. This provides a large incentive to install certified sprinkler systems, and self-mitigate fire risk.

Renton Regional and Puget Sound also include reductions for properties with monitored fire-alarm systems. Properties in the Renton Regional district receive a 7.5 percent reduction for providing proof of a 24-hour monitored alarm system. Puget Sound divides its alarm discount into four categories, illustrated in Table 16 below.

**Table 16: Puget Sound alarm discount**

| Alarm type              | Discount |
|-------------------------|----------|
| Manual Local Alarm      | 2%       |
| Manual Central Alarm    | 5%       |
| Automatic Local Alarm   | 3%       |
| Automatic Central Alarm | 8%       |

As with the system in Renton Regional, properties with alarm systems must provide a "certificate of service" of their alarm system in order to receive the reduction.

<sup>93</sup> An example of all rates for Puget Sound Fire Authority can be found at <http://pugetsoundfire.org/wp-content/uploads/2016/12/2017-Benefit-Charge-Formula-Sheet-1.pdf>

The inclusion of an agriculture discount is also unique to Renton Regional and Puget Sound. Both have a 75 percent reduction on FBC for “auxiliary structures, such as barns and/or storage sheds, used in conjunction to dairy, farming, and other agricultural operations.”<sup>94</sup>

### 8.3.2.5 Hazard factor

The hazard factor is the fifth FBC component, and it is only incorporated in the Renton Regional and Puget Sound calculation. All other districts calculate FBC solely on the four factors discussed above. Renton Regional Fire Authority describe the hazard factor as:

*“represent(ing) the degree of risk caused by the use, processing, or storage of hazard materials with a building. The hazard factor reflects the need for larger and/or more specialized effective response forces.”<sup>95</sup>*

The hazard factor charges in accordance with the increased costs involved with high-risk properties. It is only assessed on commercial buildings, and the charges are as follows:

- 30 percent increase when products or uses with high combustibility or high rates of heat release are present; and
- 40 percent increase when products or uses with high quantities of flammable, combustible or hazardous materials are present.

This hazard factor acknowledges the link between the fire risk of a given property and the costs/potential costs to the fire service.

### 8.3.2.6 The overall funding formula

The combination of the five elements described above produces the FBC, as repeated below:

*FBC = property size ( $\sqrt{\text{square feet}}$ ) x 18 x category factor x response factor x discount x hazard factor*

The Valley Regional Fire department’s website includes a simple calculator to help property owners estimate their FBC cost. An example of this calculation for a 3,000 square foot residential house with sprinklers is shown in Figure 11. below.

**Figure 11: FBC Calculator – Valley Regional Fire**

**Use The Calculator To Approximate Your FBC For 2017.**

If you own a multi-family property with more than four units, please call us for assistance.

Square Feet:

Category Factors (CF):

Senior Discount?  No  Yes

Sprinkler System Discount?  No  Yes

Your estimated FBC for 2017 is: **\$315.11**

<sup>94</sup> Source: <http://rentonrfa.org/benefitcharge/discounts/>

<sup>95</sup> Source: <http://rentonrfa.org/benefitcharge/faqs/>

Although the combination of elements that make up the FBC may make it sound complex, calculating the FBC for a property is a straight-forward process. It involves inputting a property's size, category, and whether or not the property qualifies for a discount.

### **8.3.3 Collection agency**

Though property owners may choose to, they are not personally required to calculate or submit their FBC payment. This process is undertaken by the local government, which has the square footage and category of each property on public record. The FBC is then paid to the local government alongside annual taxes for that property.

It is then the property owner's responsibility if they wish to apply for discounts. As mentioned, the sprinkler and alarm discounts require a 'certificate of service', while proving qualification for an elderly discount may require proof of income and other information.

### **8.3.4 Washington state law surrounding the FBC**

The rules surrounding the FBC are outlined in Revised Code of Washington (RCW) 52.18.010. The Code states that for a district to introduce the FBC it must first gain 60 percent local voter approval, and is then subject to review every six years. As mentioned, those districts who charge an FBC are then limited to a property tax of \$1.00 per \$1,000 property value, while those without the FBC may charge up to \$1.50 per \$1000.

The law states that properties owned by religious organisations used for religious services are exempt from the FBC. This includes properties used for kindergarten, primary or secondary educational purposes by religious organisations. Other common exemptions included in each district's guidelines include public schools (because they already pay a per student stipend for fire services), federal property, and entities who contract with the fire service.

### **8.3.5 Assessment against FENZ's legislated principles**

#### **Stable**

The combination of a property tax and the FBC provides a stable system for fire-service funding. One of the comments made by multiple districts with the FBC in the National Fire Academy's review of funding mechanisms was that one of the best things about the FBC is that it is "stable, predictable and more flexible". Another district commented that the main issue with the FBC was the requirement for public vote every six years. Within these years the fire service enjoys stable funding, but it is difficult to plan beyond this voting period.

One large advantage of the FBC system is that funding does not fluctuate with changes in the property market in the same way that a property tax does. Though fire services may benefit from higher property taxes during house price booms, they suffer from lower funding when the property market is down, despite the fact there is no real link between the cost of the provision of fire services and the cyclical state of the property market. The FBC is likely to be a more stable source of funding, because the factors that influence the amount of FBC funding (property size, property type) tend to remain relatively stable in the medium term.

## **Universal**

The cost-recovery system in Washington is targeted specifically at properties. Neither the property tax element nor the FBC include charges for motor vehicles, despite the fact that those who are involved in roadside accidents also benefit from fire services.

## **Equitable**

One key feature of the FBC that incorporates variation in risk is the hazard factor for high-risk properties. Commercial properties with what are deemed hazardous or highly combustible products are charged 30 or 40 percent more<sup>96</sup>. This means that a chemical factory pays 40 percent more than a producer of office stationery for example, to acknowledge the different fire-risk level of these two properties. It is more likely that the chemical factory will at some point require fire services, and in this event the services are also likely to be costlier than the office stationery factory may require. Thus, these two users are treated differently, in a manner that aligns with their difference in cost and risk.

The second way that the FBC treats properties according to risk is by charging properties of the same type and the same size at an equal rate. Rather than linking the charge to a property's value, the FBC's charge is based on property size and type as these factors have a stronger correlation with the variation in cost and risk between properties. If two residential properties of the same size are considered, it seems likely that the cost of servicing a fire at each of these properties will be similar. Extinguishing a fire in an apartment building on the other hand may require more time and resources, and thus in most districts the FBC charge on apartment buildings is higher than residential properties.

The provision of discounts for sprinkler systems and monitoring alarms is a feature of this system which strongly promotes better outcomes. It rewards those who have taken steps to mitigate and self-manage the fire risk, acknowledging that this significantly reduces the risk profile of these properties, and thus reduces the potential costs to the fire service. Every district with the FBC includes a sprinkler discount, ranging from 10 percent to 50 percent. Two districts also include fire-alarm discounts, further incentivising self-management.

A discount on the levy provides property owners with a financial incentive to install sprinklers and self-manage fire risk and offsets the cost of installation of the sprinkler or alarm. The New Zealand Fire Service estimate that the average cost of installing sprinklers in a new house is one to two percent of a building's price. Homesafe, one of NZ's large fire-safety companies, claims that sprinkler systems can begin at around \$3,000 for an average three-bedroom home. For pre-existing structures, the cost of sprinkler instalment tends to be higher.

The NZ Fire Service estimates that the existence of a sprinkler system materially reduces the cost of a fire. While the average house fire causes approximately \$42,000 worth of damage in fire and smoke damage, the average cost is only \$2,000 for properties with sprinkler systems installed<sup>97</sup>. However, as in Washington the discount is given only for installations of approved fire-sprinkler systems. This would add an oversight cost to the levy collections in New Zealand.

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<sup>96</sup> It should be noted that the hazard factor is only in use in two of the six Washington fire districts discussed.

<sup>97</sup> Source: [http://homesprinklers.fire.org.nz/home\\_owners.html](http://homesprinklers.fire.org.nz/home_owners.html)

## **Predictable**

As noted in the discussion on stability, districts with the FBC in place have discussed predictability as one of its advantages. It gives fire departments the ability to assess the cost level of providing the service and tune the FBC accordingly.

One issue relating to predictability that some districts found, was the issue of public awareness and understanding of how the FBC operates, and exactly what property owners are paying for. The study on Washington fire service funding previously mentioned found that public misunderstanding of the levy was a common theme. A number of districts responded that because their residents did not understand the FBC, they later returned to a full property tax. The lack of understanding among residents lead to the misconception that the FBC was an additional tax. The calculation for the FBC takes more time to process and understand than a simple tax on property value, which in these cases clearly lead to confusion among property owners, and an unwillingness to agree with payments. One district stated that they used "aggressive factual education through homeowner's associations and district mailing" in order to educate residents on how the FBC works. This illustrates the importance of transparency and public awareness with any new cost-recovery initiative.

## **Flexible**

A fire department's ability to adjust the 'response factor' element of their FBC provides flexibility in the face of cost changes. As described, this response factor is where the department incorporates the cost of fire-service provision. Thus, if the costs of fire-service provision rise, these can be accommodated through adjustments in the response factor.

## **8.4 Florida's fire-assessment regime**

### **8.4.1 Introduction**

In 1992, the State of Florida authorised the use of 'assessments' for fire-department funding. The fire assessment is a charge on property to recover the costs of providing that property with fire-protection services. It is based on the principle that costs are spread proportionately over the beneficiaries of a service. A number of districts in Florida use fire assessments to contribute to their funding regime, usually between 30-50 percent of their budget. The remainder is generally generated through a standard property tax.

Because the backbone of the fire assessment is that beneficiaries of the fire service pay their portion of the cost, the fire departments can only use assessments to fund first-response services that directly benefit properties. When a department establishes a fire assessment, it must be based around a clear budget of direct expenditure service provision. General department expenses or overheads cannot be included in the assessment fee.

The law on assessments states that they must charge users on a "fair and reasonable basis". The law does not, however, include provisions for how a fire department is to apportion its assessment charge across different property owners. This means that each district tends to use its own methodology. The City of Gainesville and the City of Lake City provide two examples of how fire assessments are structured.

#### 8.4.2 City of Gainesville

The City of Gainesville is a district in Florida which use an assessment to contribute to fire-service funding. This assessment funds around 50 percent<sup>98</sup> of the fire department's costs, and is charged on properties based on three factors. These include:

1. hazard classification;
2. square footage; and
3. historical demand.

Based on these three factors, each property is assigned 'Factored Fire Protection Units' (FFPU). These are used "as a proxy for the number of firefighters and other associated personnel, quantity and size of apparatus and other firefighting equipment necessary to provide fire protection to a particular building."<sup>99</sup> The property's charge is based on its assigned number of FFPU's.

To assign hazard classifications, the City of Gainesville fire department refers to NFPA Standard 1142 "on water supplies for suburban and rural fire fighting" produced by the National Fire Protection Association. This document provides guidelines for giving buildings a hazard ranking from 3 (high hazard) to 7 (low hazard). Appendix 3 gives the hazard rankings that NFPA have assigned across all building types. Buildings classified hazard 3 (the highest hazard rating) include, for example, buildings used for cereal, flower and linseed mills, plywood manufacturing and die casting. Hazard 7 (the lowest hazard) includes residential houses, hotels, museums and schools. Assigning one of five hazard classifications to around 100 different building types, this system is thorough, without being overly complex in application.

The City of Gainesville Fire Department combines a property's hazard classification with its total square footage, alongside a historical demand for fire services calculation. Though the exact formula used is not known, the department does say that the historical demand estimate is based on annual incident reports for each hazard class.

This department's fire assessment also includes a sprinkler discount for properties with approved automatic sprinklers. These properties are eligible for a 10 percent reduction in FFPU's – which translates to a 10 percent discount on their assessment. An elderly discount is also in place, as well as a discount for low-income residents. The low-income discount, which varies according to the total number of household members, is applicable to households which earn under a certain income.

Once each of these elements is put together, the assessment in the City of Gainesville looks like the following:

*Fire assessment = hazard classification x square footage x historical demand x discount factor (if applicable)*

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<sup>98</sup> Noted for FY 2011 <http://www.cityofgainesville.org/Portals/0/GFR/FireAssessmentFactSheet.pdf>, more recently for the surrounding Alachua County (of which Gainesville is a part) the fire assessment fee represents approx. 70% of the funding with the remainder coming from Public Service Tax (PST), Communications Service Tax (CST) and Sales Tax, not property taxes, <http://alachuacofl.boardsync.com/Web/GenFile.aspx?ad=4592>

<sup>99</sup> Source: [http://www.cityofgainesville.org/GainesvilleFireRescue\(GFR\)/FireAssessment.aspx](http://www.cityofgainesville.org/GainesvilleFireRescue(GFR)/FireAssessment.aspx)



### 8.4.3 Lake City

Lake City has been using a fire assessment since 2002 as part of its fire department's funding. The first step in calculating the assessment is estimating the total funding requirement for the year. This is not to be confused with the total budget for the fire service, it is the budget of direct costs that fit within this assessment. Table 17 below shows the funding requirement calculation for Lake City Fire Department's (LCFD's) fire assessment<sup>100</sup>.

**Table 17: Lake County Fire Department's total assessed costs, FY 2016**

| Description  | FY 2016 Assessed Costs |
|--|------------------------|
| <b>Expenditures<sup>(1)</sup></b>                          |                        |
| Personal Services  | \$1,512,137            |
| Operating  | \$495,514              |
| Capital Outlay   | \$61,000               |
| <b>Total Net Expenditures</b>                              | <b>\$2,068,651</b>     |
| <b>Miscellaneous Assessment Expenditures</b>               |                        |
| Statutory Discount <sup>(2)</sup>                          | \$82,746               |
| <i>Subtotal - Misc. Assessment Expenditures</i>            | <i>\$82,746</i>        |
| <b>Total Assessment Funding Requirements<sup>(3)</sup></b> | <b>\$2,151,397</b>     |

For 2016, the plan was to fund \$2,151,397 of direct costs through a fire assessment.

Having established the cost of providing its fire services, the next step is to calculate how to charge this cost out over the different property owners (beneficiaries). This is done by calculating the demand for fire services by property type, and charging the costs out according to this demand.

LCFD assesses demand by analysing data obtained from the National Fire Incident Reporting System of all the fire incidents in the area over the previous five years. Incidents are made up of single alarm, multiple alarm and special response. Single alarm calls tend to require only one vehicle and thus little time and cost, so they are excluded from the analysis. Multiple alarm and special response calls are used, as these represent the primary call-out costs to the LCFD. Table 18 below shows the rate of incidents per property category across these 5 years.

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<sup>100</sup> Source: <http://www.lcfla.com/documents/Misc/Lake%20City%20Fire%20Assessment%20FINAL%202015%20-%207-24-15%20V2.pdf>

**Table 18: LCFD’s incidents by property category, 2010-14**

| Property Rate Category             | 2010 through 2014 <sup>(1)</sup> |                        |                       |
|------------------------------------|----------------------------------|------------------------|-----------------------|
|                                    | Total Incidents                  | Frequency Distribution | Resource Distribution |
| <b>Residential</b>                 |                                  |                        |                       |
| Single Family                      | 373                              | 31.2%                  | <b>32.7%</b>          |
| Multi-Family                       | 133                              | 11.1%                  | <b>11.2%</b>          |
| <b>Nonresidential</b>              |                                  |                        |                       |
| Hotel/Motel                        | 60                               | 5.0%                   | <b>4.1%</b>           |
| Commercial                         | 452                              | 37.8%                  | <b>32.4%</b>          |
| Industrial/Warehouse               | 25                               | 2.1%                   | <b>2.4%</b>           |
| Government                         | 46                               | 3.8%                   | <b>3.4%</b>           |
| Institutional-Religious/Non-Profit | 21                               | 1.8%                   | <b>3.4%</b>           |
| Vacant/Agricultural Land           | 86                               | 7.2%                   | <b>10.4%</b>          |
| <b>Total</b>                       | <b>1,196</b>                     | <b>100.0%</b>          | <b>100.0%</b>         |

As seen in Table 18, there tends to be a difference between ‘Frequency Distribution’ and ‘Resource Distribution’. While the frequency distribution shows the number of callouts, the resource distribution calculation accounts for the difference in time and resources of attending to a fire at different property types.

The next step is to allocate the assessed costs (\$2,151,397) across each of the property types, based on the distribution of resources required per property type.

**Table 19: LCFD’s distribution of resources by property category**

| Description/Property Rate Category       | Distribution of Resources <sup>(2)</sup> | FY 2016 Assessed Costs <sup>(3)</sup> |
|--|--|---------------------------------------|
| <b>Funding Requirement<sup>(1)</sup></b> |  | <b>\$2,151,397</b>                    |
| <b>Residential</b>                       |  |                                       |
| Single Family                            | 32.7%                                    | \$703,507                             |
| Multi-Family                             | 11.2%                                    | \$240,956                             |
| <b>Non-Residential</b>                   |  |                                       |
| Hotel/Motel                              | 4.1%                                     | \$88,207                              |
| Commercial                               | 32.4%                                    | \$697,053                             |
| Industrial/Warehouse                     | 2.4%                                     | \$51,634                              |
| Vacant/Agricultural Land                 | 10.4%                                    | \$223,745                             |
| Government                               | 3.4%                                     | \$73,147                              |
| Institutional-Religious/Non-Profit       | 3.4%                                     | \$73,147                              |
| <b>Total</b>                             | <b>100.0%</b>                            | <b>\$2,151,396</b>                    |

Having established the total assessed cost per property type, LCFD calculates the distribution of assessed costs to property units. LCFD charges all households at a uniform rate, charges per square foot for non-residential buildings, and treats each vacant/agricultural unit as a single parcel. Table 20 below shows how the costs are spread over each of these categories and the final rate that each property is charged.

**Table 20: LCFD’s assessment rates by property category**

| Property Rate Category             | Unit          | Fire Assessment Allocation <sup>(1)</sup> | Adjusted Fire Assessment Allocation <sup>(2)</sup> | Number of Units <sup>(3)</sup> | Calculated Rate per Unit <sup>(4)</sup> |
|------------------------------------|---------------|---|--|--------------------------------|---|
| <b>Residential</b>                 |               |   |  |                                |   |
| Single Family                      | dwelling unit | \$703,507                                 | \$765,379  | 3,318                          | \$230.67                                |
| Multi-Family                       | dwelling unit | \$240,956                                 | \$262,145  | 1,749                          | \$149.88                                |
| <b>Non-Residential</b>             |               |   |  |                                |   |
| Hotel/Motel                        | square feet   | \$88,207                                  | \$96,005   | 782,238                        | \$0.1227                                |
| Commercial                         | square feet   | \$697,053                                 | \$758,416  | 5,136,092                      | \$0.1477                                |
| Industrial/Warehouse               | square feet   | \$51,634                                  | \$56,211   | 1,372,316                      | \$0.0410                                |
| Vacant/Agricultural Land           | parcel        | \$223,745                                 | \$54,064   | 1,172                          | \$46.13                                 |
| Government                         | square feet   | \$73,147                                  | \$79,588   | n/a                            | n/a                                     |
| Institutional-Religious/Non-Profit | square feet   | \$73,147                                  | \$79,588   | n/a                            | n/a                                     |

Single-family dwelling units are charged at \$230.67 per unit, multi-family are charged \$149.88. Industrial/Warehouses properties pay the lowest of the non-residential category, at \$0.041 per square foot, followed by Hotel/Motel at \$0.1227 and lastly Commercial property at \$0.1477. Vacant and agricultural land is charged significantly less at \$46.13 per parcel.

The entire calculation follows the steps below:

*total incidents (per category) > frequency (per category) > fire resources required (per category) > cost allocation (per category) > number of units (per category) > rate per unit.*

#### **8.4.4 Collection agency**

As with Washington’s fire assessment charge, local governments bill property owners for the fire assessment alongside their annual taxes. If residents wish to either question their fire assessment or apply for discounts, it is up to them to download the appropriate form and complete a discount application.

#### **8.4.5 Assessment against FENZ’s legislated principles**

### **Stable**

The components of the fire assessment; hazard classification, square footage, historical demand and discount factor, tend to be relatively stable in nature. It is unlikely, for example, for there to be a large change in the square footage of properties or hazard classifications from year to year. One situation that could occur is a boom in popularity of sprinkler systems. In the City of Gainesville (which has a sprinkler discount), this may result in less fire assessment funding being collected than expected. However, in this case, the net outcome is assessed as positive, because households with sprinklers cost fire departments less to protect, and significantly improve the overall safety of residents.

### **Universal**

The fire assessment is charged on all property types, with the exemption of some government and charity-related buildings. The level of insurance does not change the fire-assessment fee for a given property.

Fire departments in Florida do not include a charge on motor vehicles. Despite the inevitable cost to fire departments of roadside incidents, these are not incorporated in their charging mechanism. Lack of a motor-vehicle charge means that some motor-vehicle owners who are not property owners may be benefiting from services from the fire department without paying their portion of the costs.

### ***Equitable***

With historical demand for fire services used to determine the fire assessment levy, the fire assessment is designed so that beneficiaries of the fire service pay a proportionate and fair amount for the services they receive.

The City of Gainesville fire service's hazard classification system goes further in treating properties of different characteristics equitably. Due to their different risk profiles, stables, for example, pay a higher assessment than laundry shops, while laundry shops pay more than mortuaries. Though residential properties are all treated with equally low hazard classifications, the system accounts specifically for the differences in fire risk between non-residential properties.

As with Florida's Fire Benefit Charge, the City of Gainesville's sprinkler discount promotes self-mitigation and self-management of fire risks. This discount results in a more equitable fire services charge, because in the event of a fire, properties which have sprinkler systems in place will typically cost the fire services less to protect. With sprinklers in action, the fires will often already be extinguished by the time the fire service arrive.

### ***Predictable***

Property owners in Florida are charged for fire services through both property taxes and fire assessments. Though property taxes tend to be charged at a fairly predictable rate, the level of the fire assessment can fluctuate according to the funding requirements of the fire service each year. Unfortunately, not a lot of information is available online about historical fire assessment rates among different districts.

### ***Flexible***

The amount of funding that fire departments generate from the fire assessment is specific to an annually generated budget. This provides flexibility for the fire service to adjust its assessment in the case of fluctuations in cost of fire-protection services.

Regular reviews of the cost allocation rates for different property types is also an important feature of the fire assessment. Lake County Fire Department, for example, reviews its cost-allocation rates every few years, in accordance with the most recent historical data on the distribution of incidents. Table 8 below illustrates how the distribution of resources per property category has changed over time.

**Table 21: LCFD’s distribution of resources by property category**

| Description          | Total Resources   |                   |          |
|----------------------|-------------------|-------------------|----------|
|                      | Avg. of 2008-2010 | Avg. of 2008-2014 | % Change |
| Residential          | 87.7%             | 84.9%             | -3%      |
| Hotel/Motel/RV Park  | 1.8%              | 1.9%              | 6%       |
| Commercial           | 5.0%              | 5.1%              | 2%       |
| Industrial/Warehouse | 0.9%              | 1.0%              | 11%      |
| Institutional        | 4.7%              | 7.1%              | 51%      |

To account for this change, Lake County has adjusted its rate schedule accordingly, as illustrated in Table 9 below.

**Table 22: LCFD’s rates schedule**

| Rate Category              | Unit             | Current | Calculated | % Change (2015-2016) |
|----------------------------|------------------|---------|------------|----------------------|
| Residential                | DU               | \$181   | \$175      | -3.3%                |
| Hotel/Motel/RV Park        | Room or RV Space | \$44    | \$48       | 9.1%                 |
| Commercial (15K sf)        | Building         | \$2,205 | \$2,286    | 4%                   |
| Industrial/Warehouse (15K) | Building         | \$288   | \$332      | 15%                  |
| Institutional (15K)        | Building         | \$2,844 | \$4,269    | 50%                  |

This illustrates not just the flexibility of this measure, but the fluid way it attempts to accurately charge costs according to those who generate them/receive benefit from the service. With the use of historical data, changes in use behaviour by different property types are reflected by changes in the way they are charged, ensuring proportionate and equitable charging.

## 8.5 Other examples identified

### 8.5.1 Denmark's private fire service

In contrast to the classic public fire service model, the majority of Denmark's emergency services are provided by a private multinational organisation called Falck. Opening its first fire station in 1922, Falck now provide fire services to around 2/3's of the 98 Danish municipalities. It also provides around 85 percent of Denmark's ambulance services, while public operations make up the remainder of these services<sup>101</sup>.

Falck's operations are not limited to within Denmark. Falck serves communities in 46 countries, with a large presence particularly in Nordic countries, other parts of Europe and growing operations in North America. Falck is also the world's largest international rescue company. It operates across four business areas: Emergency, Assistance, Healthcare and Safety Services. Fire services are within the 'Emergency' business area, and although they feature as a core service, these are by no means the only area that Falck operate in.

In Denmark, Falck's fire services operate based on contracts with the local government of each municipality. Falck does not charge on a 'per fire basis', it charges annually for full coverage of a district, regardless of the number of incidents in a given year. This provides each municipality with the choice between public provision of fire services or contracting these services out to Falck. Given that Falck is a commercial company, information is not publicly available on the methodology Falck uses to charge each specific district. As with any contract, it can be assumed Falck charge based on the level of service and cost of providing that service. Based on the widespread coverage of fire services that Falck provide in Denmark, it clearly provides a service that competes strongly with that of public fire services.

The Ministry of Interior is responsible for ensuring fire services operate in accordance with the laws. The Ministry has a 'Rescue Board' which travels to different fire departments and inspects call-out and response times and the overall quality of the service. The 'National Fire Inspection' is another agency that checks and controls departments, in particular their level of training and equipment standards.

A study of the private and public fire services in Denmark found significant differences in cost structures between these two types of entities<sup>102</sup>. In terms of per capita costs, Falck's private fire services' costs are only one third as much as public fire services. The reasons provided in the study are:

- cost reductions achieved by Falck through joint production of other services alongside fire services;
- competition from alternative sources of supply; and
- the separation of government regulation and provision of these services.

Figure 12 below comes from Falck's 2016 annual report and shows the make-up of a portion of Falck's industrial fire service.

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<sup>101</sup> Source: Falck Annual Report 2016

<sup>102</sup> Source: <http://www.christianregenhardcenter.com/symposium-series/2002/2000/PDF%20Files/hansen.PDF>

**Figure 12: Flack’s industrial firefighting brigades**

**Industrial firefighting brigades services**

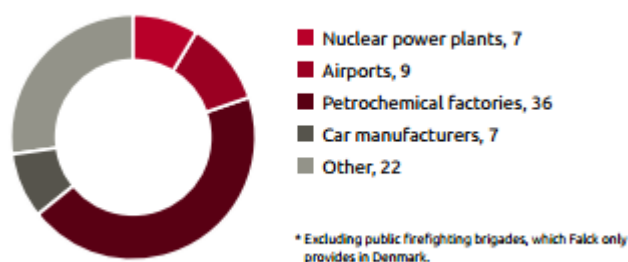


Figure 12 above highlights that Flack has the ability to contract for individual services and the associated risks. The necessary resources are priced by contract. The ability of Falck to contract for specific tasks that carry unique risk exposures may increase the overall efficiency of its funding.

**8.5.2 Other user fees in the US**

User fees, where beneficiaries are charged the part or whole cost of a specific service, are a common funding method used by many fire departments in the USA. The Fire Service Institute from the University of Iowa explains the theory of fire service user-fees as:

“The basic rationale for instituting fees for emergency service is that, while taxes pay for the capacity to respond, fees pay for the actual response”<sup>103</sup>.

With this principle in mind, numerous fire services charge fees to fund the cost of responding to specific incidents.

Albany Fire Department in New York researched the use of specific user fees in other departments in the US<sup>104</sup>. As the table below illustrates, hazardous mitigation response, emergency medical transport, false alarms and motor vehicle extraction were found to be the most common services charged through specific user fees.

<sup>103</sup> Sourced from p23 of <https://www.hsdl.org/?abstract&did=14269> quoted from Callahan, P., & Oster, G. (1999). *Assessing fees for fire and emergency services*. University of Iowa, Institute of Public Affairs, Fire Service Institute.

<sup>104</sup> Source: <https://www.hsdl.org/?abstract&did=14269>



**Table 23: User fees charged by US fire departments**

| <u>Service for Which Fees are Assessed:</u> | <u>Number of Depts. Assessing Fees</u> | <u>Average Fee</u> |
|---|--|--------------------|
| Hazardous Mitigation Responses              | 12                                     | \$ 240.20          |
| Emergency Medical Transport                 | 9                                      | \$ 688.88          |
| False Alarm Activations                     | 6                                      | \$ 175.00          |
| Extrication on Motor Vehicle Accidents      | 6                                      | \$ 250.00          |
| Plans Review                                | 5                                      | \$ 270.00          |
| Other Services                              | 5                                      | \$ 5.00            |
| Response/Suppression of Illegal Burns       | 4                                      | \$ 150.00          |
| Fire Code Inspections                       | 4                                      | \$ 75.00           |
| Suppression of Structure Fires              | 3                                      | \$ 500.00          |
| Technical Rescue Responses                  | 3                                      | \$ 466.67          |
| Fire Code Re-inspections                    | 3                                      | \$ 50.00           |
| Suppression of Wildland Fires               | 2                                      | \$ 125.50          |
| Suppression of Motor Vehicle Fires          | 2                                      | \$ 250.00          |
| Emergency Medical Non-Transport             | 2                                      | \$ 300.00          |
| Water Rescue Responses                      | 2                                      | \$ 100.00          |
| Engine Assists on Medical Responses         | 1                                      | Unreported         |
| Public Assists                              | 1                                      | Unreported         |
| Agency Assists                              | 1                                      | Unreported         |
| Fire Investigations                         | 1                                      | Unreported         |

This form of fee is consistent with user-pays principles. User fees for specific callouts rely on billing users post-event, and the ability of users to pay accordingly. The Albany survey found an average collection rate of 84 percent, a relatively high level for such ex-post fees.

### **8.5.3 Charleston City**

Charleston City in South Carolina charge a “fire protection fee” upon the owner of all residences, buildings or structures within the city limits. The fee operates similarly to other models discussed, charging properties by square footage, with a separate rate for residential and non-residential properties. Table 24 below shows the rates for both residential and commercial property owners, who are charged monthly.

**Table 24: Charleston City's residential fire protection fee rates**

Residential Rates:

| <u>Square Footage</u> | <u>Yearly</u> | <u>Monthly</u> | <u>Square Footage</u> | <u>Yearly</u> | <u>Monthly</u> |
|-----------------------|---------------|----------------|-----------------------|---------------|----------------|
| 1 to 1,000            | 15.00         | 1.25           | 10,001 to 15,000      | 225.00        | 18.75          |
| 1,001 to 1,500        | 22.00         | 1.83           | 15,001 to 20,000      | 300.00        | 25.00          |
| 1,501 to 2,000        | 29.00         | 2.42           | 20,001 to 25,000      | 375.00        | 31.25          |
| 2,001 to 2,500        | 38.00         | 3.17           | 25,001 to 30,000      | 450.00        | 37.50          |
| 2,501 to 3,000        | 45.00         | 3.75           | 30,001 to 35,000      | 525.00        | 43.75          |
| 3,001 to 3,500        | 52.00         | 4.33           | 35,001 to 40,000      | 600.00        | 50.00          |
| 3,501 to 4,000        | 60.00         | 5.00           | 40,001 to 45,000      | 675.00        | 56.25          |
| 4,001 to 4,500        | 68.00         | 5.67           | 45,001 to 50,000      | 750.00        | 62.50          |
| 4,501 to 5,000        | 75.00         | 6.25           | 50,001 to 55,000      | 825.00        | 68.75          |
| 5,001 to 5,500        | 83.00         | 6.92           | 55,001 to 60,000      | 900.00        | 75.00          |
| 5,501 to 6,000        | 91.00         | 7.58           | 60,001 to 65,000      | 975.00        | 81.25          |
| 6,001 to 6,500        | 98.00         | 8.17           | 65,001 to 70,000      | 1,050.00      | 87.50          |
| 6,501 to 7,000        | 106.00        | 8.83           | 70,001 to 75,000      | 1,125.00      | 93.75          |
| 7,001 to 7,500        | 113.00        | 9.42           | 75,001 to 80,000      | 1,200.00      | 100.00         |
| 7,501 to 8,000        | 120.00        | 10.00          | 80,001 to 85,000      | 1,275.00      | 106.25         |
| 8,001 to 8,500        | 127.00        | 10.58          | 85,001 to 90,000      | 1,350.00      | 112.50         |
| 8,501 to 9,000        | 135.00        | 11.25          | 90,001 to 95,000      | 1,425.00      | 118.75         |
| 9,001 to 9,500        | 143.00        | 11.92          | 95,001 to 100,000     | 1,501.00      | 125.08         |
| 9,501 to 10,000       | 150.00        | 12.50          | 100,000 and over      | 3,000.00      | 250.00         |

**Table 25: Charleston City's commercial fire protection fee rates**

Commercial Rates:

| <u>Square Footage</u> | <u>Yearly</u> | <u>Monthly</u> | <u>Square Footage</u> | <u>Yearly</u> | <u>Monthly</u> |
|-----------------------|---------------|----------------|-----------------------|---------------|----------------|
| 1 to 1,000            | 42.00         | 3.50           | 25,001 to 30,000      | 1,265.00      | 105.42         |
| 1,001 to 1,500        | 63.00         | 5.25           | 30,001 to 35,000      | 1,476.00      | 123.00         |
| 1,501 to 2,000        | 85.00         | 7.08           | 35,001 to 40,000      | 1,687.00      | 140.58         |
| 2,000 to 2,500        | 106.00        | 8.83           | 40,001 to 45,000      | 1,897.00      | 158.08         |
| 2,501 to 3,000        | 127.00        | 10.58          | 45,001 to 50,000      | 2,108.00      | 175.67         |
| 3,001 to 3,500        | 149.00        | 12.42          | 50,001 to 55,000      | 2,319.00      | 193.25         |
| 3,501 to 4,000        | 170.00        | 14.17          | 55,001 to 60,000      | 2,529.00      | 210.75         |
| 4,001 to 4,500        | 191.00        | 15.92          | 60,001 to 65,000      | 2,739.00      | 228.25         |
| 4,501 to 5,000        | 211.00        | 17.58          | 65,001 to 70,000      | 2,950.00      | 245.83         |
| 5,001 to 5,500        | 232.00        | 19.33          | 70,001 to 75,000      | 3,161.00      | 263.42         |
| 5,501 to 6,000        | 253.00        | 21.08          | 75,001 to 80,000      | 3,372.00      | 281.00         |
| 6,001 to 6,500        | 274.00        | 22.83          | 80,001 to 85,000      | 3,582.00      | 298.50         |
| 6,501 to 7,000        | 295.00        | 24.58          | 85,001 to 90,000      | 3,792.00      | 316.00         |
| 7,001 to 7,500        | 316.00        | 26.33          | 90,001 to 95,000      | 4,003.00      | 333.58         |
| 7,501 to 8,000        | 337.00        | 28.08          | 95,001 to 100,000     | 4,214.00      | 351.17         |
| 8,001 to 8,500        | 358.00        | 29.83          | 100,000 to 125,000    | 5,268.00      | 439.00         |
| 8,501 to 9,000        | 380.00        | 31.67          | 125,001 to 150,000    | 6,322.00      | 526.83         |
| 9,001 to 9,500        | 401.00        | 33.42          | 150,001 to 175,000    | 7,375.00      | 614.58         |
| 9,501 to 10,000       | 422.00        | 35.17          | 175,001 to 200,000    | 8,428.00      | 702.33         |
| 10,001 to 15,000      | 632.00        | 52.67          | 200,001 to 225,000    | 9,482.00      | 790.17         |
| 15,001 to 20,000      | 843.00        | 70.25          | 225,001 to 250,000    | 10,536.00     | 878.00         |
| 20,001 to 25,000      | 1,054.00      | 87.83          | 250,000 and over      | 12,643.00     | 1,053.58       |

The Charleston City fire-protection fee includes a 'homestead exception' for residents who are 65 or older, who qualify for a \$25 exception.

### 8.5.4 Woodland Avenue Fire Protection District

Woodland Avenue Fire Protection District operates a volunteer-run fire-protection district in Stanislaus County, California<sup>105</sup>. In mid-2015, a Fire Benefit Assessment was established to generate funding for the Woodland Avenue Fire Protection district. This benefit assessment divides properties into seven categories:

- Residential <3,000 sq. ft.;
- Residential >3,000 sq. ft.;
- Commercial and Industrial;
- Agricultural;
- Non-agricultural, underdeveloped or vacant land;
- Institutional developed (public assembly, educational, religious); and
- Institutional underdeveloped (Publicly owned).

Each category is charged at a different rate, based on the benefit received from fire service provision. Table 26 below shows these rates<sup>106</sup>.

**Table 26: Woodland Avenue’s fire-benefit assessment rates**

| <b>Woodland Avenue FPD Assessment By Property Category</b>        |   |                        |
|---|---|------------------------|
| <b>Property Category</b>  | <b>Proposed Maximum Annual Assessment</b> | <b>Unit of Measure</b> |
| Residential <3,000 sq. ft.  | <b>\$81.65</b>                            | /Structure             |
| Residential >=3,000 sq. ft.                                       | <b>\$102.07</b>                           | /Structure             |
| Commercial and Industrial   | <b>\$0.0362</b>                           | /Square Foot           |
| Agricultural  | <b>\$1.05</b>                             | /Acre                  |
| Non-Agricultural Undeveloped or Vacant Land                       | <b>\$0.78</b>                             | /Acre                  |
| Institutional Developed (Public Assembly, Educational, Religious) | <b>\$149.83</b>                           | /Parcel                |
| Institutional Undeveloped (Publically Owned)                      | <b>\$0.78</b>                             | /Acre                  |

## 8.6 Lessons for FENZ from funding regimes in other countries

The funding regimes examined above, like most of the Australian cases examined in Section 7, adjust the level of funding contribution to the fire service by the probability of use and the level of use in the event of an incident.

Washington State allows its municipalities to charge for the fire service partially through the Fire Benefit Charge. The driving variable within the charge is the property size and not property value. This is consistent with the evidence that a fire in a larger property typically requires more resources to fight. Municipalities within Washington State also adjust charges for the type of property covered, cost of response and the hazard level in the event of a required response. Lastly, discounts are offered in all cases, offering an incentive for certain risk mitigation such as sprinkler systems (regardless of property

<sup>105</sup> Source: <http://www.stanislauslafco.org/info/PDF/MSR/Districts/Fire.2016.pdf>

<sup>106</sup> Source: <http://www.wafpd.com/documents/Woodland%20Fire%20Info%20Flier%20Proof.pdf>

type). This form of adjustment is an example of an implementable best-practice approach to funding that could be useful to FENZ as it considers post-transition funding policy.

Gainesville, Florida also includes a hazard classification that involves grouping 97 sub-categories of property types into five risk bands based on the use of the property (involving differing charges for property type classified further than the high level residential or commercial). It also adjusts charges based property size and as with ACC a historical demand consideration to its calculation. Lake City, Florida further details the operating expenditure for its fire service on an expected cost basis and charges the expected beneficiaries based on historical demand by classified property types.

All examples but Gainesville, contain two or more sub-categories for charging residential property and all examples detailed (except for the Valley Regional Fire Service in Washington State) have multiple sub-categories for charging non-residential property. These range from Puget, Woodville, Renton differentiating between commercial property and apartment complexes to Lake City, Florida differentiating between hotels, commercial property, industrial property and warehousing to Gainesville, Florida differentiating between 97 different property types and then amalgamating them based on risk into five risk bands.

Risk-rating by differentiating charges for different property types would improve the equitability of the funding regime for FENZ by more closely aligning the charges to users with the costs they impose on the system. Those property types that are likely to access the service should be contributing more for its existence. The same is true of implementing some form of risk-mitigation incentive.

These examples demonstrate that risk-adjusted contributions to levy funded fire services are implementable and sustainable.

## 9 Lessons for FENZ's funding regime

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This report has provided several examples of funding regimes from New Zealand and other countries that are likely to be helpful in creating a funding regime for FENZ that is more closely aligned to the funding principles set out in the Fire and Emergency Act 2017. Some of the lessons that FENZ could adopt include:

- clearly identifying the type of service FENZ provides, estimating the cost of each service and matching the charges to the beneficiaries with the cost they are expected to incur;
- charging on the basis of probability and level of use;
- offering discounts for risk-mitigation measures like sprinklers and alarms; and
- charging specific users for the costs of specific services like responding to false alarms.

Clearly identifying and costing the different services and matching the charges to the beneficiaries of the service would help improve the equitability of FENZ's funding regime.

In all the overseas examples identified (where data was available) the fire service providers had some significant element of general taxpayer (or ratepayer) funding and some degree of specific-user charging. However, the proportion of specific user charges was typically small (less than 10 percent of total funding in most cases).

Having different funding mechanisms would help diversify FENZ's funding base and could more closely align the cost of a response to the service level that would be received by specific contributors. This could involve adjusting the level of contribution by distance, level of staff and the level of equipment of fire services in the area of the contributor's property (consistent with that seen in some Australian states). Alternatively, charging could be based on property size as a proxy for cost of response, as identified in the US examples.

To more equitably charge for probability and level of use, FENZ could look to the ACC as a good model. For its work account, ACC differentiates its fees by industry type: ACC amalgamates 539 industry types into 142 levy risk groups. While this may seem too high a degree of differentiation, it seems to work reasonably well for ACC.

The fire-service providers in other countries analysed in this report also aim (to varying levels) to charge based on risk. The jurisdictions categorise properties in different ways in order to charge each property type at an appropriate rate. Gainesville (Florida) and Queensland are two examples of extensive categorisation of property types, with 97 and 72 categories of properties respectively. In the Gainesville system, each one of the 97 property types fit into one of five levy-hazard classification groups. Queensland places each of the 72 property types into one of 16 levy classes.

Table 27 below summarises the property-type classifications used for funding purposes by the fire services analysed in this report. The table lists the property classifications used by different municipalities/states when setting their charges. The total number of property types that have different charges is presented in the final column. The table highlights



that when compared against its peers, FENZ (along with WA) appears to be the outlier by differentiating between only two category types when setting its charges.

**Table 27: Property categorisations used for funding different fire services**

| Area                              | Residential categories  | Non-residential categories   | Total categories |
|-----------------------------------|---|--|------------------|
| Queensland                        | 1 levy group (encompassing 3 property-use types)                                      | 16 levy groups (encompassing 69 property-use types, see Appendix 2)                        | <b>16</b>        |
| South Australia                   | Residential<br>Rural  | Commercial<br>Industrial<br>Special community use<br>Vacant<br>Other                       | <b>7</b>         |
| Victoria                          | Residential   | Commercial<br>Industrial<br>Primary production<br>Vacant<br>Public benefit                 | <b>6</b>         |
| Lake City (Florida)               | Single family<br>Multi family   | Hotel<br>Commercial<br>Industrial/warehouse<br>Vacant/agricultural                         | <b>6</b>         |
| Gainesville Florida               | 1 hazard classification group (encompassing approx. 5 residential property-use types) | 5 hazard classification group (encompassing approx. 92 non-residential property-use types) | <b>5</b>         |
| Central Pierce (Washington State) | Residential<br>Mobile home  | Commercial<br>Apartment building<br>Multistory triplex                                     | <b>5</b>         |
| West Australia                    | Vacant, residential and farming   | Commercial, industrial, misc.  | <b>2</b>         |
| New Zealand                       | Residential   | Non-residential  | <b>2</b>         |

Table 27 above shows that Queensland has the highest degree of differentiation, with 16 different categories for charging purposes. Among the other fire departments, the average number of property types is around four. The current and proposed funding system in New Zealand, on the other hand, splits properties into residential and non-residential, with no subsections.

The examples described in this report illustrate the ability of fire services to differentiate properties on the basis that they represent a different level of risk and cost to the fire service. Furthermore, several fire services (such as Florida and Queensland) classify property-use type and level of risk associated with that property at a more granulated basis and then, as with ACC’s risk-adjusting approach, property-use types are aggregated. This is consistent with a bottom-up approach to the estimation of costs and charges, whereas FENZ has taken a top-down approach where risk and risk groupings aren’t assessed.

Washington’s Puget and Renton Fire Authorities both include a Hazard factor, which results in charges 30 to 40 percent higher for producers and users of highly combustible, flammable or hazardous products.

In New Zealand there is certainly potential to separate non-residential properties according to their risk/expected cost to the fire service. Use could be made of the General Property Use (New Zealand Fire Service classifications) that have already been noted in this report. This classification system is made up of 47 non-residential property types that fit into the 11 general property use categories<sup>107</sup>. Appendix 4 shows the full list of 47 NZFS property classifications.

With the building classifications already established, and the historical data to form the basis for estimating fire cost/risk, dividing properties beyond just residential and non-residential would seem quite simple and feasible, with the exception of complications associated with the use of an insurance levy system and group insurance policies.

In addition to differentiating by property type, each of the Australian fire departments discussed divide properties according to their location in order to account for the different level and types of services they receive. This is especially important in Australia because of the size of each state. Typically, contributors located in metropolitan areas will contribute more because in the event of an incident the response received will come from a fire station that is generally better staffed and better equipped for the response. Metropolitan contributors therefore pay a premium for the benefit of having a highly ready and responsive fire service.

The United States examples identified and presented in this report show that the funding regime can include adjustments for risk-mitigation mechanisms adopted by users. Fire-risk mitigation is expensive and, to help incentivise risk mitigation, discounts are provided for approved risk-mitigation techniques. Both Washington and Florida include sprinkler discounts and, in the case of some Washington departments, fire-alarm-system discounts. These discounts not only incentivise self-protection, but also increase general public safety and treat better protected properties equitably - in accordance with their lower cost to the service. Implementing such risk-mitigation discounts would require some monitoring and enforcement mechanisms. However, the U.S. examples show that these adjustments are possible.

Another feature of the funding seen in the U.S. is that multiple funding systems often work in tandem. Municipalities in Washington have the option of recovering part of the cost of the fire service through a levy that is based on property value and part through a levy that is based on property size. This diversifies the funding base and better reflects the actual costs that would be imposed on the system in the event of a call out. It follows the evidence that a fire on a larger property will generally cost more to fight.

One final common feature across the fire services reviewed in this report is that the charging systems are set annually on the basis of the budget for the year. Through this process there is a focus on linking projected costs of providing the fire service and the charge to its beneficiaries.

To implement these changes would take time, investment and additional data and information gathering on the part of insurance companies under the current insurance-based levy regime for funding FENZ. This however does not mean that the changes cannot be implemented, there would just need to be additional time and investment into

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<sup>107</sup> These categories are presented in BERL's 2012 "The Economic Costs of Fire in Non-residential Buildings" report, <https://fireandemergency.nz/assets/Documents/Research-and-reports/Report-126-economic-cost-in-non-residential-buildings.pdf>.



developing the appropriate infrastructure and collecting data on variables such as property size and property use. The alternative is to change the insurance-based levy to a system calculated and charged through rates and administered by local authorities. Local authorities have the charging infrastructure generally already set up and have information on each property within their area. We note that investment would still be required by the local authorities but the required level of investment would likely be lower than under an insurance-based scheme to achieve a funding regime that was more closely aligned to the legislated best-practice funding principles.

The funding regime for FENZ could benefit greatly by considering further the best-practice examples discussed in this report. The numerous cases discussed in the report demonstrate it is quite feasible to adjust charges for fire services for the risks imposed on the fire service by different property types, property locations and the likelihood of service use. It is also quite possible to charge in a way that incentivises risk-mitigating behaviour and thus reduces the risk of fires and associated risks of lives being lost.

## Appendix 1: NZFS response statistics, 2012-13

### *Nature of FENZ's services*

This Annex considers some high-level statistics on the nature of the services provided by the NZFS. We employ the "Emergency Incident Statistics, 2012-2013" from NZFS<sup>108</sup>. That document presents data and statistics on the response types of NZFS. While we present high-level breakdowns, we note that we do not have information on cost and response type, or total cost per service class.

Figure 13 below presents the high-level distribution of response type by the NZFS for the 2012/13 year.

**Figure 13: NZFS response type by number of callouts**

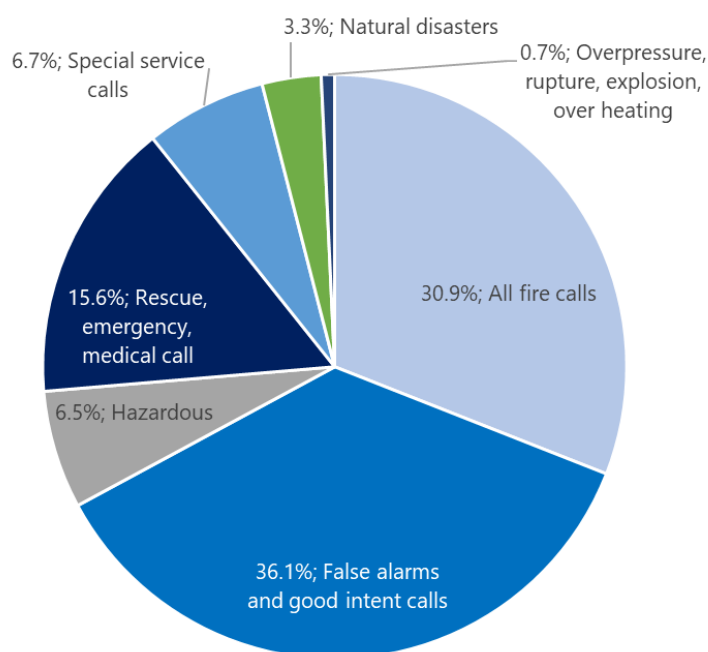


Figure 13 above shows that approximately 31 percent of NZFS call-outs were responses to real fires, 36 percent were false alarms and the remaining 33 percent were responses to non-fire services. The non-fire related services shown in Figure 13 are broken into rescue, emergency and medical calls representing 15.6 percent of NZFS's total responses, special service calls representing 6.7 percent of responses, hazardous emergency calls representing 6.5 percent of total responses, natural disaster responses representing 3.3 percent and finally overpressure, rupture or explosion calls representing 0.7 percent.

<sup>108</sup> The New Zealand Fire Service Emergency Incident Statistics 2012-2013

### Fire activity

As noted above, fire activity represented 31 percent of NZFS's responses for the 2012/13 year. Figure 14 below breaks down the response type of the substantiated fires.

**Figure 14: Fire response type**

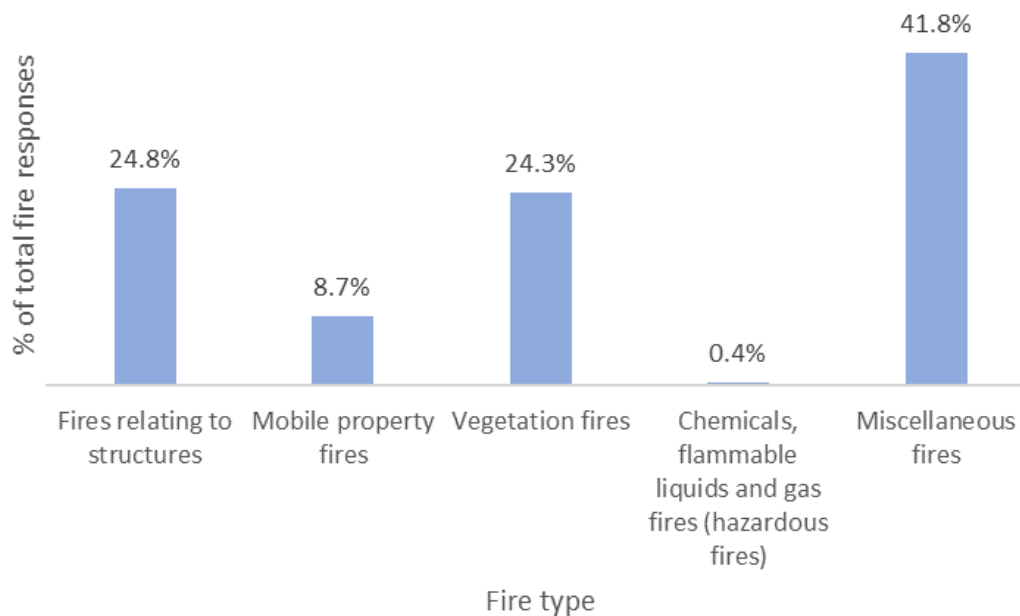
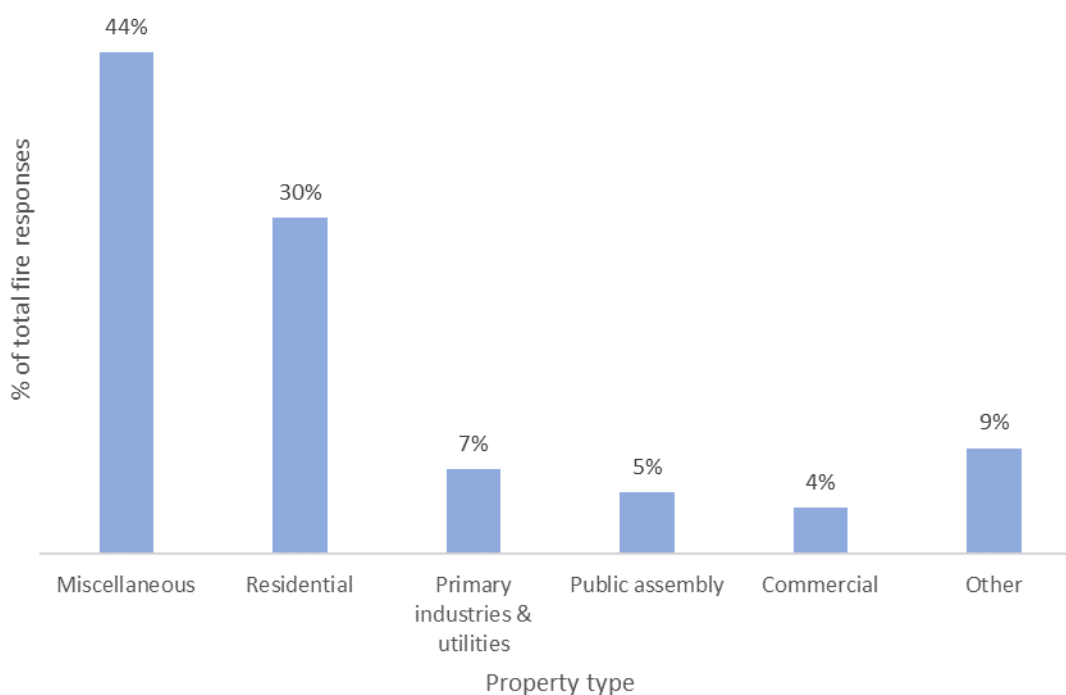


Figure 14 shows that approximately 25 percent of substantiated fire-related responses related to structure fires, 9 percent related to mobile property fires, 24 percent related to vegetation fires, 42 percent were classified as miscellaneous (which includes camp fires, rubbish or rubbish bin fires amongst others) and less than 1 percent were chemical fires.

Figure 15 below breaks down the responses to substantiated fires by the property type NZFS responded to.

**Figure 15: Responses to fires by property type**



Regarding the type of property, 30 percent of responses were for residential property, 7 percent primary industries and utilities, approximately 5 percent public assembly area, 5 percent commercial property and 44 percent miscellaneous (including special structures and roads/streets). The remainder of the call outs by property type classifications include storage, educational, public assembly and health care & institutional.

***Non-fire activity***

As presented above in Figure 15, non-fire activity makes up approximately 33 percent of NZFS's responses according to its 2012-2013 statistics report. This activity was broken into rescue, emergency and medical, special service, hazardous emergency calls, natural disaster and overpressure, rupture or explosion.

Figure 16 below presents the breakdown of the emergency-response classifications which represents 15.6 percent of the total fire service activity.

**Figure 16: Emergency-response type**

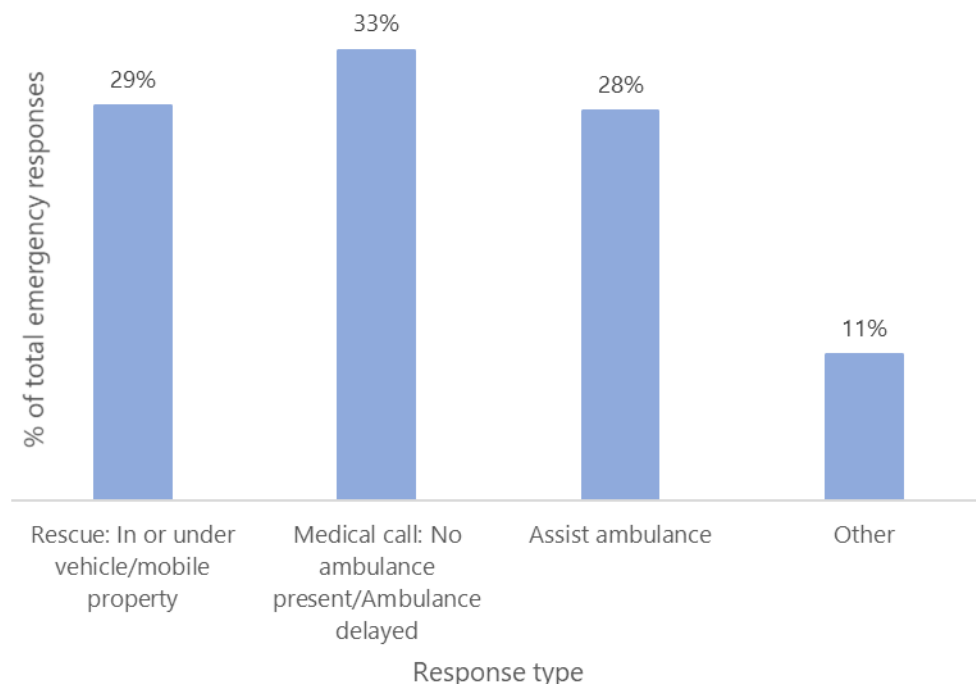
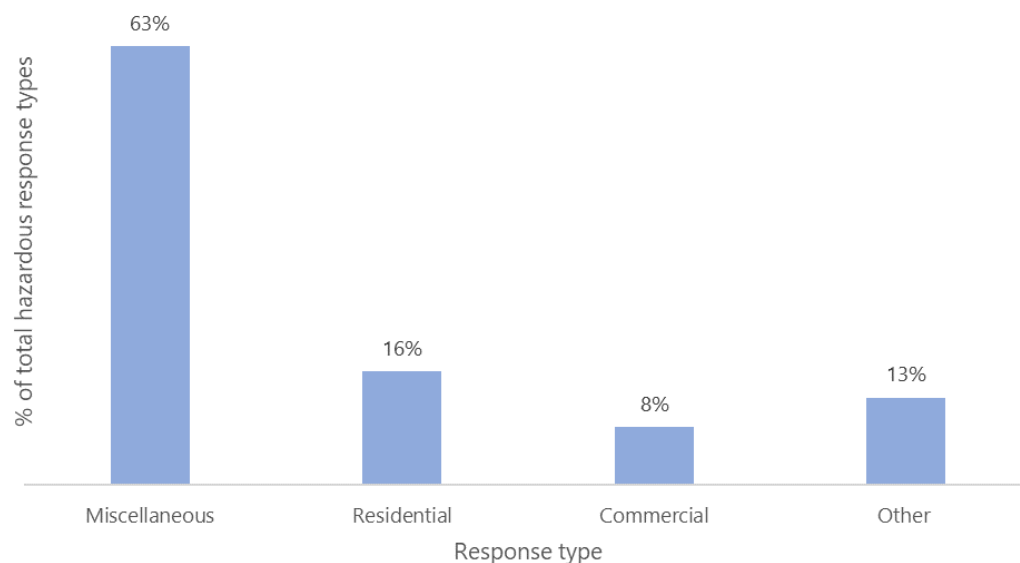


Figure 16 shows that, within the rescue and emergency response classification, 29 percent were rescues in or under a vehicle, 33 percent were medical calls where an ambulance was not present or delayed, 28 percent were ambulance assistance responses and the remainder included other rescues such as trapped in a building/structure, trapped in or under machinery and roof/cliff/tree rescue among others.

Figure 17 presents the breakdown of hazardous material responses which represents 6.5 percent of the total fire service activity.

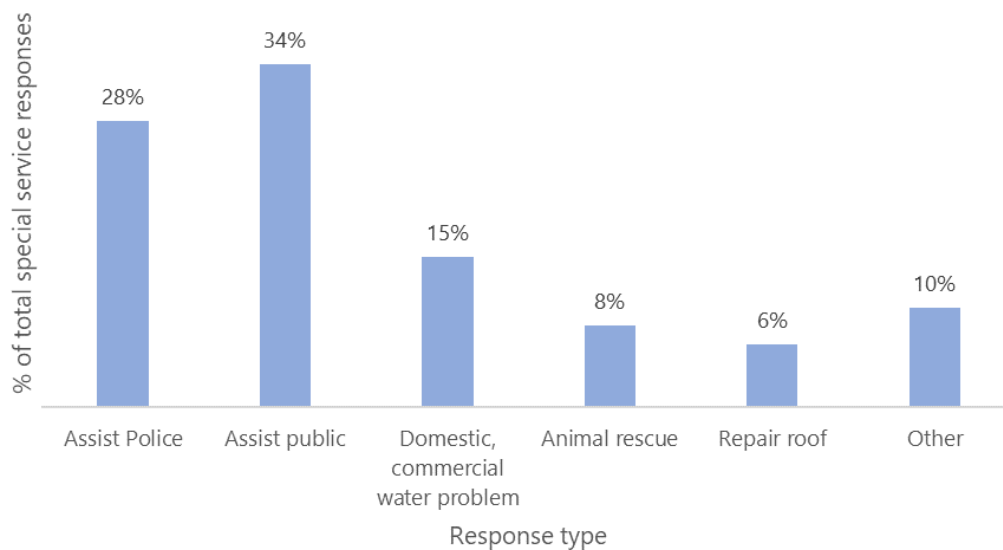
**Figure 17: Hazardous material response type**



The responses by NZFS to hazardous material incidents was further categorised. 16.3 percent of the responses were to residential occupants, 8.3 percent were to commercial and 3.4 percent were to primary industries and utilities. Most of the responses were classified as miscellaneous (63 percent), which largely relates to roads or streets, presumably from spills during transportation of chemicals or hazardous materials. The remainder involved educational facilities and public assemblies, among others.

Figure 18 below presents the special-service responses by type of response. Special-services responses represented 6.7 percent of the total NZFS activity.

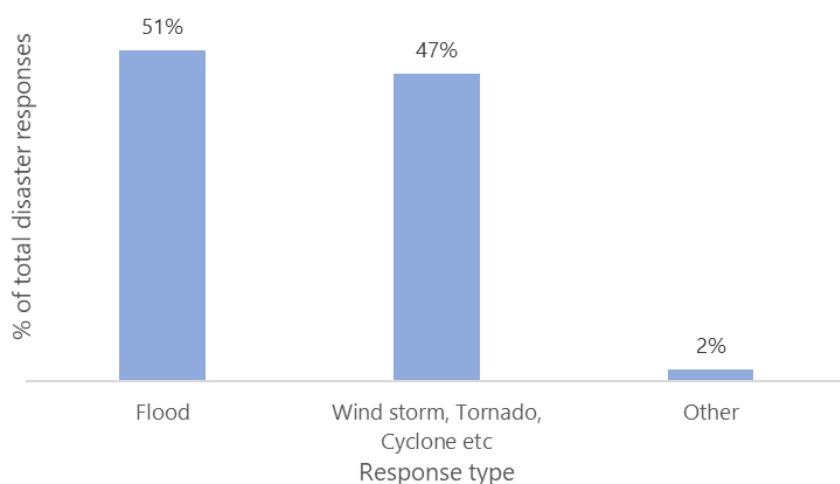
**Figure 18: Special-service response type**



Of the special-service calls in the non-fire activity, 28 percent were to assist the police, 34 percent were classified as assisting the public, 15 percent were domestic or commercial water problems, 8 percent was animal rescue, 6 percent was roof repair, and the remaining included smoke problems, aircraft standby and not elsewhere classified.

Figure 19 below presents natural-disaster responses by response type. Natural-disaster responses represented 3.3 percent of the total NZFS activity.

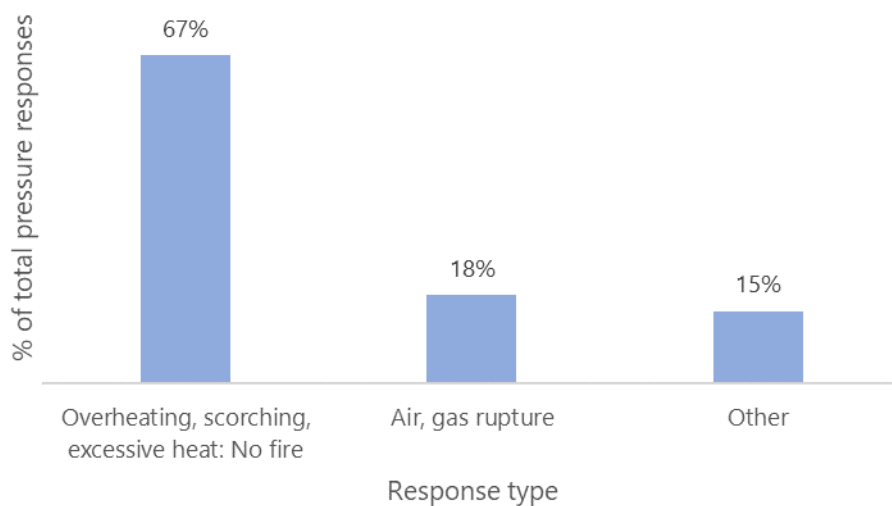
**Figure 19: Natural-disaster response type**



51 percent of the natural-disaster responses were related to flooding and 47 percent were related to extreme weather such as wind, storms and tornadoes. The remainder related to earthquakes and volcanic eruptions.

Figure 20 below presents the overpressure, rupture, explosives, overheating responses by response type. They represent 0.7 percent of the total NZFS activity.

**Figure 20: Overpressure, rupture, explosives, overheating responses by response type**



The overpressure, rupture, explosives, overheating classifications included subcategories of responses where 67 percent related to instances where there was overheating, scorching, excessive heat: no fire, 18 percent related to air or gas ruptures and the remaining relating to steam rupture and bomb or munition explosion with no fire or not elsewhere classified.

## Appendix 2: Queensland's levy groups

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### Levy group 1

- 1.01 Advertising hoarding
- 1.02 Jetty
- 1.03 Park or garden with no improvements other than fences or gardens
- 1.04 Vacant land, including vacant land with fence

### Levy group 2

- 2.01 Car park (1 level)
- 2.02 Cemetery
- 2.03 Club that is not licensed premises
- 2.04 Farm, or area used for grazing, with dwelling house
- 2.05 Industry (light, service or offensive) (gross floor area of less than 51m<sup>2</sup>)
- 2.06 Mini storage unit (gross floor area of not more than 85m<sup>2</sup>)
- 2.07 Office, shop or commercial premises, other than drive-in shopping centre (not more than 2 levels, gross floor area of less than 51m<sup>2</sup>)
- 2.08 Outbuilding
- 2.09 Park or garden, with building
- 2.10 Plant nursery
- 2.11 Residential flats or units that are not lots (not more than 2 flats or units)
- 2.12 Residential unit that is a lot
- 2.13 Single unit residence
- 2.14 Walkway (suspended or underground)
- 2.15 Transformer, substation, television or radio transmission tower

### Levy group 3

- 3.01 Caravan park (not more than 50 sites)
- 3.02 Car park (2 levels)
- 3.03 QEC service premises or education and care service premises
- 3.04 Church, church hall or community hall
- 3.05 Club that is licensed premises (not more than 2 levels)
- 3.06 Community protection centre
- 3.07 Construction site
- 3.08 Day care centre for aged, disabled or handicapped persons
- 3.09 Forest used for commercial growing or harvesting of timber (less than 10ha)
- 3.10 Funeral parlour
- 3.11 Guest house or hostel, with shared bathroom facilities (not more than 2 levels)
- 3.12 Industry (light, service or offensive) (gross floor area of 51–500m<sup>2</sup>)
- 3.13 Library, museum, art gallery or zoo
- 3.14 Marina, non-residential
- 3.15 Mini storage unit (gross floor area of more than 85m<sup>2</sup>)
- 3.16 Office, shop or commercial premises, other than drive-in shopping centre (not more than 2 levels, gross floor area of 51–250m<sup>2</sup>)
- 3.17 Outdoor storage area (less than 2025m<sup>2</sup>)
- 3.18 Residential flats or units that are not lots (more than 2 flats or units, not more than 2 levels)
- 3.19 Restaurant, including floating restaurant, that is not licensed premises
- 3.20 Outdoor sales area (less than 2025m<sup>2</sup>)
- 3.21 Service station



#### **Levy group 4**

- 4.01 Caravan park (51–100 sites)
- 4.02 Car park (3–4 levels)
- 4.03 Drive-in shopping centre (area devoted to buildings, roadways, parking and landscaping of less than 4050m<sup>2</sup>)
- 4.04 Drive-in theatre
- 4.05 Guest house or hostel, with shared bathroom facilities (3–4 levels)
- 4.06 Hotel or motel (not more than 2 levels)
- 4.07 Industry (light, service or offensive) (gross floor area of 501–1125m<sup>2</sup>)
- 4.08 Office, shop or commercial premises, other than drive-in shopping centre (not more than 2 levels, gross floor area of 251–500m<sup>2</sup>)
- 4.09 Outdoor storage area (2025–4050m<sup>2</sup>)
- 4.10 Residential flats or units that are not lots (more than 2 flats or units, 3–4 levels)
- 4.11 Restaurant, including floating restaurant, that is licensed premises
- 4.12 Outdoor sales area (2025–4050m<sup>2</sup>)
- 4.13 School (non-boarding) (not more than 100 pupils)
- 4.14 Theatre or cinema complex, not part of drive-in shopping centre (1 auditorium)
- 4.15 Tourist attraction (less than 4050m<sup>2</sup>)

#### **Levy group 5**

- 5.01 Airfield
- 5.02 Deagon Training Complex
- 5.03 Caravan park (more than 100 sites)
- 5.04 Drive-in shopping centre (area devoted to buildings, roadways, parking and landscaping of 4050–7500m<sup>2</sup>)
- 5.05 Forest used for commercial growing or harvesting of timber (10–40ha)
- 5.06 Industry (extractive) (less than 10,001m<sup>2</sup>)
- 5.07 Industry (light, service or offensive) (gross floor area of 1126–2000m<sup>2</sup>)
- 5.08 Office, shop or commercial premises, other than drive-in shopping centre (not more than 2 levels, gross floor area of 501–1012m<sup>2</sup>)
- 5.09 Office, shop or commercial premises, other than drive-in shopping centre (3–4 levels, gross floor area of less than 601m<sup>2</sup>)
- 5.10 Oil or fuel depot, including refinery (licensed capacity of less than 1,000,000L)
- 5.11 School (non-boarding) (101–500 pupils)
- 5.12 Showground or racecourse, other than major Brisbane venue
- 5.13 Tourist attraction (4050–10,000m<sup>2</sup>)

#### **Levy group 6**

- 6.01 Car park (more than 4 levels)
- 6.02 Club that is licensed premises (3–4 levels)
- 6.03 Drive-in shopping centre (area devoted to buildings, roadways, parking and landscaping of 7501–10,000m<sup>2</sup>)
- 6.04 Guest house or hostel, with shared bathroom facilities (5–6 levels)
- 6.05 Hotel or motel (3 levels)
- 6.06 Industry (light, service or offensive) (gross floor area of 2001–3000m<sup>2</sup>)
- 6.07 Office, shop or commercial premises, other than drive-in shopping centre (not more than 2 levels, gross floor area of 1013–3500m<sup>2</sup>)
- 6.08 Office, shop or commercial premises, other than drive-in shopping centre (3–4 levels, gross floor area of 601–1012m<sup>2</sup>)
- 6.09 Outdoor storage area (more than 4050m<sup>2</sup>)
- 6.10 Residential flats or units that are not lots (more than 2 flats or units, 5–6 levels)
- 6.11 Outdoor sales area (more than 4050m<sup>2</sup>)
- 6.12 School (boarding) (not more than 100 boarders)
- 6.12 School (boarding) (not more than 100 boarders)
- 6.13 School (non-boarding) (more than 500 pupils)
- 6.14 Tertiary residential quarters
- 6.15 Theatre or cinema complex, not part of drive-in shopping centre (2–3 auditoriums)
- 6.16 Welfare residence (not more than 50 beds)

#### **Levy group 7**

- 7.01 Forest used for commercial growing or harvesting of timber (more than 40ha)
- 7.02 Guest house or hostel, with shared bathroom facilities (more than 6 levels)
- 7.03 Hospital (not more than 50 beds)
- 7.04 Industry (light, service or offensive) (gross floor area of 3001–4000m<sup>2</sup>)
- 7.05 Office, shop or commercial premises, other than drive-in shopping centre (not more than 2 levels, gross floor area of 3501–5500m<sup>2</sup>)
- 7.06 Office, shop or commercial premises, other than drive-in shopping centre (3–4 levels, gross floor area of 1013–3500m<sup>2</sup>)
- 7.07 Residential flats or units that are not lots (more than 2 flats or units, 7–10 levels)
- 7.08 Tavern
- 7.09 Theatre or cinema complex, not part of drive-in shopping centre (4–6 auditoriums)

#### **Levy group 8**

- 8.01 Drive-in shopping centre (area devoted to buildings, roadways, parking and landscaping of 10,001–15,000m<sup>2</sup>)
- 8.02 Hotel or motel (4 levels)
- 8.03 Industry (extractive) (10,001–20,000m<sup>2</sup>)
- 8.04 Industry (light, service or offensive) (gross floor area of 4001–5500m<sup>2</sup>)
- 8.05 Office, shop or commercial premises, other than drive-in shopping centre (not more than 2 levels, gross floor area of more than 5500m<sup>2</sup>)
- 8.06 Office, shop or commercial premises, other than drive-in shopping centre (3–4 levels, gross floor area of 3501–5500m<sup>2</sup>)
- 8.07 Oil or fuel depot, including refinery (licensed capacity of 1,000,000–25,000,000L)
- 8.08 Residential flats or units that are not lots (more than 2 flats or units, 11–15 levels)
- 8.09 Tertiary education institution (not more than 500 students)
- 8.10 Theatre or cinema complex, not part of drive-in shopping centre (more than 6 auditoriums)
- 8.11 Tourist attraction (more than 10,000m<sup>2</sup>)
- 8.12 Welfare residence (51–100 beds)

#### **Levy group 9**

- 9.01 Albion Park Raceway
- 9.02 Club that is licensed premises (more than 4 levels)
- 9.03 Doomben Racecourse
- 9.04 Drive-in shopping centre (area devoted to buildings, roadways, parking and landscaping of 15,001–20,000m<sup>2</sup>)
- 9.05 Eagle Farm Racecourse
- 9.06 Hospital (51–100 beds)
- 9.07 Hotel or motel (5–6 levels)
- 9.08 Industry (heavy) (gross floor area of less than 3001m<sup>2</sup>)
- 9.09 Industry (light, service or offensive) (gross floor area of 5501–7500m<sup>2</sup>)
- 9.10 Office, shop or commercial premises, other than drive-in shopping centre (3–4 levels, gross floor area of more than 5500m<sup>2</sup>)
- 9.11 Office, shop or commercial premises, other than drive-in shopping centre (5–6 levels)
- 9.12 Residential flats or units that are not lots (more than 2 flats or units, more than 15 levels)
- 9.13 Royal National Agricultural and Industrial Association of Queensland showground
- 9.14 School (boarding) (more than 100 boarders)
- 9.15 Tertiary education institution (501–1000 students)
- 9.16 Welfare residence (101–200 beds)

#### **Levy group 10**

- 10.01 Drive-in shopping centre (area devoted to buildings, roadways, parking and landscaping of 20,001–30,000m<sup>2</sup>)
- 10.02 Hospital (101–200 beds)
- 10.03 Industry (extractive) (more than 20,000m<sup>2</sup>)
- 10.04 Industry (heavy) (gross floor area of 3001–7500m<sup>2</sup>)
- 10.05 Industry (light, service or offensive) (gross floor area of more than 7500m<sup>2</sup>)
- 10.06 Office, shop or commercial premises, other than drive-in shopping centre (7–10 levels)
- 10.07 Welfare residence (201–500 beds)

#### **Levy group 11**

- 11.01 Drive-in shopping centre (area devoted to buildings, roadways, parking and landscaping of 30,001–40,000m<sup>2</sup>)
- 11.02 Hospital (201–500 beds)
- 11.03 Hotel or motel (7–10 levels)
- 11.04 Industry (heavy) (gross floor area of 7501–15,000m<sup>2</sup>)
- 11.05 Office, shop or commercial premises, other than drive-in shopping centre (11–20 levels)
- 11.06 Oil or fuel depot, including refinery (licensed capacity of 25,000,001–50,000,000L)
- 11.07 Tertiary education institution (1001–5000 students)
- 11.08 Welfare residence (more than 500 beds)

**Levy group 12**

- 12.01 Brewery, other than brewery at which most of the brewed product is served
- 12.02 Bulk sugar terminal
- 12.03 Distillery
- 12.04 Drive-in shopping centre (area devoted to buildings, roadways, parking and landscaping of 40,001–60,000m<sup>2</sup>)
- 12.05 Hospital (more than 500 beds)
- 12.06 Hotel or motel (11–16 levels)
- 12.07 Industry (heavy) (gross floor area of more than 15,000m<sup>2</sup>)
- 12.08 Office, shop or commercial premises, other than drive-in shopping centre (21–29 levels)
- 12.09 Oil or fuel depot, including refinery (licensed capacity of 50,000,001– 100,000,000L)
- 12.10 Resort complex (gross floor area of less than 18,000m<sup>2</sup>)
- 12.11 Sugar mill, sugar factory or sugar refinery

**Levy group 13**

- 13.01 Bulk coal terminal
- 13.02 Drive-in shopping centre (1 shopping level, area devoted to buildings, roadways, parking and landscaping of more than 60,000m<sup>2</sup>)
- 13.03 Hotel or motel (17–25 levels)
- 13.04 Office, shop or commercial premises, other than drive-in shopping centre (30–40 levels)
- 13.05 Oil or fuel depot, including refinery (licensed capacity of 100,000,001– 150,000,000L)
- 13.06 Power station
- 13.07 Resort complex (gross floor area of 18,000–35,000m<sup>2</sup>)
- 13.08 Tertiary education institution (5001–10,000 students)

**Levy group 14**

- 14.01 Casino, including any accommodation, entertainment and restaurant facilities (not more than 20 levels)
- 14.02 Drive-in shopping centre (more than 1 shopping level, area devoted to buildings, roadways, parking and landscaping of 60,001–100,000m<sup>2</sup>)
- 14.03 Hotel or motel (more than 25 levels)
- 14.04 Integrated office, shop and commercial complex (more than 5 levels, underground parking facilities for more than 1000 vehicles and underground bus interchange)
- 14.05 Metal refinery or smelter
- 14.06 Office, shop or commercial premises, other than drive-in shopping centre (more than 40 levels)
- 14.07 Oil or fuel depot, including refinery (licensed capacity of 150,000,001– 200,000,000L)
- 14.08 Resort complex (gross floor area of more than 35,000m<sup>2</sup>)

**Levy group 15**

- 15.01 Drive-in shopping centre (more than 1 shopping level, area devoted to buildings, roadways, parking and landscaping of more than 100,000m<sup>2</sup>)
- 15.02 Oil or fuel depot, including refinery (licensed capacity of 200,000,001– 250,000,000L)
- 15.03 Tertiary education institution (more than 10,000 students)

**Levy group 16**

- 16.01 Casino, including any accommodation, entertainment and restaurant facilities (more than 20 levels)
- 16.02 Oil or fuel depot, including refinery (licensed capacity of more than 250,000,000L)

## Appendix 3: Florida's hazard-classification classes

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### 5.2.1 Hazard classification 3)

5.2.1.1 Occupancy hazard classification 3 shall be used for severe hazard occupancies

5.2.1.2 Occupancies having conditions similar to the following shall be assigned occupancy hazard classification number 3.

- 1) Cereal or flour mills
- 2) Combustible hydraulics
- 3) Cotton picking and opening operations
- 4) Die casting
- 5) Explosives and pyrotechnics manufacturing and storage
- 6) Feed and gristmills
- 7) Flammable liquid spraying
- 8) Flow coating/dipping
- 9) Linseed oil mills
- 10) Manufactured homes / modular building assembly
- 11) Metal extruding
- 12) Plastic processing
- 13) Plywood and particleboard manufacturing
- 14) Printing using flammable inks
- 15) Rubber reclaiming
- 16) Sawmills
- 17) Solvent extracting
- 18) Straw of hay in bales
- 19) Textile picking
- 20) Upholstering with plastic foams

### 5.2.2 Hazard classification 4)

5.2.2.1 Occupancy hazard classification 4 shall be used for high hazard occupancies

5.2.2.2 Occupancies having conditions similar to the following shall be assigned occupancy hazard classification number 4.

- 1) Barns and stables (commercial)
- 2) Building materials supply storage
- 3) Department stores
- 4) Exhibition halls, auditoriums and theatres
- 5) Feed stores (without processing)
- 6) Freight terminals
- 7) Mercantiles
- 8) Paper and pulp mills
- 9) Paper processing plants
- 10) Piers and wharves
- 11) Repair garages
- 12) Rubber products manufacturing and storage
- 13) Warehouses, such as those used for furniture, general storage, paint, paper and woodworking industries.

### 5.2.3 Hazard classification 5)

5.2.3.1 Occupancy hazard classification 5 shall be used for moderate hazard occupancies, in which the quantity or combustibility of contents is expected to develop moderate rates of spread and heat release. The storage of combustibles shall not exceed 12 ft. (3.66m) in height.

5.2.3.2 Occupancies having conditions similar to the following shall be assigned occupancy hazard classification number 5

- 1) Amusement occupancies
- 2) Clothing manufacturing plants
- 3) Cold storage warehouses
- 4) Confectionery product warehouses
- 5) Farm storage buildings, such as corn cribs dairy barns, equipment sheds and hatcheries
- 6) Laundries
- 7) Leather goods manufacturing plants
- 8) Libraries (with large stockroom areas)
- 9) Lithography shops
- 10) Machine shops
- 11) Metalworking shops
- 12) Nurseries (plant)
- 13) Pharmaceutical manufacturing plants

- 14) Printing and publishing plants
- 15) Restaurants
- 16) Rope and twine manufacturing plants
- 17) Sugar refineries
- 18) Tanneries
- 19) Textile manufacturing plants
- 20) Tobacco barns
- 21) Unoccupied buildings

5.2.4 **Hazard classification 6)**

5.2.4.1 Occupancy hazard classification 6 shall be used for low hazard occupancies in which the quantity or combustibility of content is expected to develop relatively low rates of spread and heat release.

5.2.4.2 Occupancies having conditions similar to the following shall be assigned occupancy hazard classification number 6

- 1) Armouries
- 2) Automobile parking garages
- 3) Bakeries
- 4) Barber or beauty shops
- 5) Beverage manufacturing plants/breweries
- 6) Boiler houses
- 7) Brick, tile and clay product manufacturing plants
- 8) Canneries
- 9) Cement plants
- 10) Churches and similar religious structures
- 11) Dairy products manufacturing and processing
- 12) Doctors' offices
- 13) Electronic plants
- 14) Foundries
- 15) Fur processing plants
- 16) Gasoline service stations
- 17) Glass and glass products manufacturing plants
- 18) Horse stables
- 19) Mortuaries
- 20) Municipal buildings
- 21) Post offices
- 22) Slaughterhouses
- 23) Telephone exchanges
- 24) Tobacco manufacturing plants
- 25) Watch and jewellery manufacturing plants
- 26) Wineries

5.2.5 **Hazard classification 7)**

5.2.5.1 Occupancy hazard classification number 7 shall be used for light hazard occupancies, in which the quantity or combustibility of contents is expected to develop relatively light rates of spread and heat release

5.2.5.2 Occupancies having conditions similar to the following shall be assigned occupancy hazard classification number 7

- 1) Apartments
- 2) Colleges and universities
- 3) Clubs
- 4) Dormitories
- 5) Dwellings
- 6) Fire stations
- 7) Fraternity or sorority houses
- 8) Hospitals
- 9) Hotels and motels
- 10) Libraries (except large stockroom areas)
- 11) Museums
- 12) Nursing and convalescent homes
- 13) Offices (including data processing)
- 14) Police stations
- 15) Prisons
- 16) Schools
- 17) Theatres without stages



## Appendix 4: NZFS's classification of non-residential property

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This Annex presents NZFS's classification of non-residential property types. The classifications below come from Appendix B of *"The Economic Cost of Fire in Non-residential Buildings"*, BERL, 2012.

### **General Property Use (NZFS classification)**

- 1 Airport
- 2 Boarding house, Half-way house, Dormitory
- 3 Church, Cemetery, Religious use
- 4 Commercial - not classified above
- 5 Commercial forestry
- 6 Communications, Research - not classified
- 7 Community hall
- 8 Conservation, Recreation park, Reserve
- 9 Construction, Renovation - not classified
- 10 Construction, Renovation, Demolition site
- 11 Doctors/Dentists emergency clinic, Medical
- 12 Educational, Health, Institutional - not classified above
- 13 Farming, Horticulture, Agricultural use
- 14 Hospital, Hospice, Rest home, Rehabilitation
- 15 Hotel, Motel, Lodge, Timeshare
- 16 Industrial, Manufacturing
- 17 Laboratory, Research use
- 18 Library, Museum, Art gallery, Court etc
- 19 Lifestyle block
- 20 Marae, Maori Culture use
- 21 Mine, Quarry, Oil well
- 22 Not Recorded
- 23 Office, Bank, Embassy, Fire/Ambulance/Police station
- 24 Open land
- 25 Passenger terminal
- 26 Power station
- 27 Prison, Correctional institution
- 28 Public Toilet
- 29 Railway property
- 30 Recreational use, Theatre, Indoor sport
- 31 Recreational, Assembly - not classified
- 32 Restaurant, Pub, Tavern
- 33 Road, Street, Motorway
- 34 Rubbish tip, Transfer station, Hazardous
- 35 Rural - not classified above
- 36 School: Pre-school through to Secondary
- 37 Service/Repair use, Dry cleaner, Laundry
- 38 Shop, Shopping mall, Supermarket, Service
- 39 Sports club, Health club
- 40 Sportsfield, Stadium
- 41 Storage, Warehousing
- 42 Stormwater, Harbour, Lake, River, Beach
- 43 Studio: Radio, TV
- 44 Telephone exchange, Communications use,
- 45 Unable to classify
- 46 University, Polytech, Teachers college,
- 47 Vacant building, Section

## Appendix 5: Victorian Fire Service: role description

### Emergency response

| MFB  | CFA   |
|--|---|
| <ul style="list-style-type: none"> <li>• Suppression of all types of fires.</li> <li>• Urban search and rescue, including road accidents.</li> <li>• Emergency Medical Response Fire Responder Program.</li> <li>• Emergencies on waters in Port Phillip Bay and the metropolitan river system.</li> <li>• Industrial accidents and fires which involve hazardous material handling and storage incidents.</li> <li>• Coordinated responses and interoperability with other emergency service agencies and the Department of Environment and Primary Industries.</li> <li>• Chemical, biological and radiological emergencies.</li> <li>• Strategic, expert advice to the State Government on major events and anti-terrorist activities.</li> </ul> | <ul style="list-style-type: none"> <li>• Wildfire suppression.</li> <li>• Structural fire suppression.</li> <li>• Transport related fire suppression.</li> <li>• Road rescue.</li> <li>• Technical rescue, such as high angle, trench and mine operations.</li> <li>• Hazardous materials transportation and storage incidents.</li> <li>• Manage Forestry Industry Brigades.</li> <li>• Major incident management of bushfires and assistance of other emergency activities including flood assistance. (with other emergency service agencies and the Department of Environment and Primary Industries).</li> <li>• Contribute (with Department of Environment and Primary Industries and State Emergency Service) to the State Aircraft Unit and aerial firefighting capability.</li> <li>• CFA also have a mine response brigade at Bendigo (Oscar 1).</li> <li>• Other emergency activities including flood assistance.</li> </ul> |

### Non-emergency response

| MFB   | CFA   |
|---|---|
| <ul style="list-style-type: none"> <li>• Input into the development of Australian Standards, Codes of Practice and Regulations affecting community safety.</li> <li>• Delivery of community safety activities including education to increase awareness and preparedness.</li> <li>• Conduct building regulation related inspections of fire and life systems and maintenance compliance.</li> <li>• Development of fire safety and emergency plans for major events.</li> <li>• Fire investigation and cause analysis, and the provision of data to the community and external authorities (within Privacy Act).</li> <li>• Review and inspection of the dangerous goods handling and storage practices and fire safety systems of major hazardous materials sites.</li> <li>• Representation on council advisory committees for fire prevention planning and community risk management.</li> <li>• Attendance at and participation with local councils in municipal emergency management planning exercise.</li> <li>• Provision of expertise, technical advice and skills acquisition services to interstate and international organisations.</li> <li>• Service and sale of fire safety equipment.</li> </ul> | <ul style="list-style-type: none"> <li>• Community awareness, education and safety programs.</li> <li>• Bushfire prevention and mitigation, including planned burning.</li> <li>• Bushfire community awareness and engagement.</li> <li>• Community capacity building.</li> <li>• Fire safety input planning for major community risks.</li> <li>• Fire prevention.</li> <li>• Land use planning advice at municipal level.</li> <li>• Maintain and sustain a volunteer workforce.</li> <li>• Technical services including building code related inspections, review and inspection of dangerous goods and major hazard facilities</li> <li>• Fire cause and origin investigation.</li> </ul> |