

Fire Research Report

An Evaluation of the 'Be Firewise' Programmes for Year 7 and 8, and Senior Secondary School Students

MartinJenkins

May 2013

The New Zealand Fire Service Commission (the Commission) contracted MartinJenkins to undertake an evaluation of the 'Be Firewise' programme which consists of two school-based fire safety programmes (one aimed at Year 7 and 8 students, and one aimed at senior secondary school students in Years 11-13). The primary purpose of the evaluation was to help the Commission to understand:

- how to better target and promote the two 'Be Firewise' programmes to schools who are not currently using them
- how to improve and strengthen programme delivery
- the extent to which teachers and students perceive the 'Be Firewise' programmes to contribute to improved levels of fire safety awareness and reduce risky behaviour amongst older children, in order to inform ongoing investment in these programmes.

The evaluation makes a number of recommendations for improvements to the programme including approaches to engaging with schools, clarifying responsibility for regional promotion and coordination of the programme, reviewing resourcing arrangements, improved delivery training and increasing the amount of online tasks available in the programme.

Communications, Fire Risk Management and Training are working together to improve the deployment of the overall Firewise Educational Programme. This evaluation provides key information to assist.

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**An Evaluation of the Be Firewise
programmes for Year 7 and 8 and
Senior Secondary School Students**

22 May 2013

Final Report

MARTIN^IJENKINS

Preface

This report has been prepared for The New Zealand Fire Service Commission by Nicole Brown, Robyn Ward and Donella Bellett from MartinJenkins (Martin, Jenkins & Associates Limited).

Our goal is to improve the effectiveness and efficiency of the organisations we work with. We do this by providing strategic advice and operational support in the following areas:

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Executive summary

Introduction

The New Zealand Fire Service Commission (the Commission) contracted MartinJenkins to undertake an evaluation of the *Be Firewise* programme which consists of two school-based fire safety programmes (one aimed at Year 7 and 8 students and one aimed at senior secondary school students in Years 11-13). The primary purpose of the evaluation was to help the Commission to understand:

- how to better target and promote the two *Be Firewise* programmes to schools who are not currently using them
- how to improve and strengthen programme delivery
- the extent to which teachers and students perceive the *Be Firewise* programmes to contribute to improved levels of fire safety awareness and reduce risky behaviour amongst older children, in order to inform ongoing investment in these programmes.

This report summarises the findings of the evaluation.

Approach

To understand the extent to which schools are aware of, and engage in, *Be Firewise* we conducted an online survey of all New Zealand schools teaching the year levels targeted by the programmes. Analysis of the sample indicated no obvious identifiable biases by New Zealand Fire Service (NZFS) region, school decile, school type or location (38% response rate).

Following the survey, we used a case study methodology to focus the enquiry on:

- how the NZFS promotes and supports the delivery of *Be Firewise* programmes
- the decision making processes within schools about whether to participate
- how schools implement *Be Firewise*
- the programmes' perceived value and impact on students as observed by teachers, principals and NZFS staff.

Five case studies were undertaken – one in each NZFS region. Each case study involved the following steps:

- Telephone interviews with two Fire Risk Management Officers (FRMOs) from each region. These staff are responsible for promoting the *Be Firewise* programmes to schools in their local area, and to some extent are also expected to encourage operational staff (ie local fire-fighters) to engage with schools to promote and deliver the programmes.

- Telephone interviews with teaching staff from three schools in each region. Schools were classified as delivering – indicating that the school had taught either of the *Be Firewise* programmes in the last two years – or non-delivering.
 - for each delivering school we interviewed the school principal and the teacher(s) who had taught the *Be Firewise* programme
 - for each non-delivering school we interviewed the school principal and/or the teacher(s) involved in making decisions about curriculum content in relevant subject areas.

Uptake

Uptake of both *Be Firewise* programmes is low, particularly when compared with take up rates of 92% reported for the Commission's Year 1 and 2 *Get Firewise* programme in 2008.¹ Only 49% of schools responding to the survey reported having ever delivered the Year 7 and 8 programme and only 9% reported delivering the senior secondary *Be Firewise - Party at Our Place* programme.

For schools responding to the senior secondary survey, the main factor inhibiting take up of the programmes was insufficient time in the teaching programme (cited by 57% of secondary school respondents). For schools responding to the Year 7 and 8 survey, it was previous exposure to fire safety messages through students having been taught the *Get Firewise* programme for Year 1 and 2 students (43%).

Engagement strategies

The current engagement strategies used to promote the *Be Firewise* programmes need to be enhanced. The findings show that the *Be Firewise* programmes are not proactively or directly promoted to eligible schools, particularly secondary schools. There are also differences in the decision-making processes schools follow when deciding whether or not to deliver *Be Firewise* programmes and in the weight they place on certain factors as part of that process. FRMOs are conscious of some of these differences but do not consciously or actively tailor the way they engage with different types of schools. The current engagement practice is strongly influenced by the heavy focus on the Year 1 and 2 programme, at the expense of knowledge of the *Be Firewise* programmes. Other issues affecting engagement include:

- limited direct, proactive promotion of the *Be Firewise* programmes

¹ Evaluation of the Firewise Programme for Year One and Two Students
<http://www.getfirewise.org.nz/Research/Firewise%20Evaluation%20Martin%20Jenkins.pdf> .

- limited tailoring of engagement strategies to reflect differences in school contexts (ie primary, intermediate and secondary schools)
- internal organisational factors including resource constraints, the impact of recent restructuring and the expansion of the FRMO role.

There are a number of examples of good practice evident. More experienced FRMOs focus on establishing good relationships with schools and staff, and the creation of opportunities to maximise engagement (such as inviting principals to breakfast meetings).

Failure to proactively target eligible schools or to customise engagement processes to reflect broad differences between schools is likely to be contributing to the low uptake rates for both programmes.

To promote the programmes to different schools FRMOs need to demonstrate their understanding of how *Be Firewise* programmes can be integrated into the school curriculum and adapted to the particular needs of individual schools. This builds confidence and trust amongst school staff that the programmes are valuable and that NZFS staff understand what schools need. Schools that are eligible to use the *Be Firewise* programmes are unlikely to take up the programmes when they do not understand how the programmes will contribute to their curriculum objectives. The Commission needs to provide ongoing, regular training and support to FRMOs and other NZFS staff to establish a consistent level of knowledge about both programmes. Such support needs to build on the knowledge and skills of FRMOs who have existing experience in the *Be Firewise* role and good networks with schools.

There is a need to support staff to promote *Be Firewise* programmes as part of an integrated educative intervention. Although operational staff are generally aware of all four programmes, they tend to think of them as stand-alone, discrete programmes rather than subcomponents of a single educational intervention. The relatively 'high profile' of the Year 1 and 2 programme amongst schools tends to further reinforce FRMOs subconscious perception of *Firewise* programmes as separate rather than interconnected. This can result in missed opportunities to promote the *Be Firewise* programmes when engaging schools around the *Get Firewise* programme.

Delivery

Findings about the delivery of the *Be Firewise* programme have been limited to the Year 7 and 8 programme because of the low uptake of the senior secondary programme and associated difficulties obtaining detailed information about delivery of this. With regard to the Year 7 and 8 programme, there are variations in the way teachers use the programme resources but all of these variations are appropriate and do not contradict or undermine the intended delivery approach. While some improvements could be made to the shape and form of the Year 7 and 8 programme, the actual content is considered effective in enhancing students' awareness and knowledge of fire safety and prevention. However, schools and students are making increasing

use of online applications or web-based activities and have access to personal devices they can use for this purpose. FRMOs, principals and teachers believe that increasing the range of activities that can be undertaken in an interactive online format will significantly enhance the value and appeal of the Year 7 and 8 programme for schools now and in the future.

Perceived value of the programmes

The low rates of delivery nationally indicated by the survey results mean that it is not appropriate to expect to see any substantial or clear evidence of the programmes' outcomes in terms of impact on students' fire safety awareness or behaviour. However survey results and the perceptions of FRMOs, principals and teachers drawn from the case study research indicate that schools rate the *Be Firewise* Year 7 and 8 programme positively (94% consider *Be Firewise* a 'good' or 'excellent' fire safety education programme) and the majority are satisfied or very satisfied with the programme's content, length and associated resources.

Those with experience of delivering the Year 7 and 8 programme believe that it is relevant for students and has a strong educative impact on students' knowledge and understanding of fire safety. Teachers and principals consider that the combination of written work, online tasks, the 'shock value' of the media clips and exposure to real life fire-fighters enables students to take fire safety seriously. Evidence that indicates students have absorbed the key messages includes:

- the type of questions students ask during fire-fighter presentations or visits, for example intelligent questions about how to put out different types of fire, or why fires are able to spread so fast
- demonstrating appropriate fire safety conscious behaviour during a 'fire' scenario, for example 'get low, get down, get out' behaviours, commenting about the need to close doors during a fire drill
- recognising inappropriate or risky fire-related behaviour in informal comments and 'chit chat' with friends and peers that is overheard by teachers.

Conclusions and recommendations

Failure to proactively target eligible schools or to customise engagement processes to reflect differences between schools is likely to be contributing to the low uptake rates of both *Be Firewise* programmes. The low rates of delivery nationally mean that it is not appropriate to expect to see any substantial or clear evidence of the programmes' outcomes in terms of impact on students' fire safety awareness or behaviour. The evaluation findings provide evidence that can be used to enhance the effectiveness of the strategies currently used by FRMOs to promote the programme and to a lesser extent to enhance programme delivery.

We have identified five recommendations for the Commission to consider:

Recommendation 1: Improve the way that NZFS staff approach and engage with eligible schools. The study suggests there are some simple principles that FRMOs could consistently apply to improve the effectiveness of their engagement with schools.

Recommendation 2: Clarify how responsibility and accountability for co-ordination and oversight of *Firewise* promotion and delivery is expected to occur at a regional level.

Recommendation 3: Review the resourcing arrangements and expectations associated with promotion and delivery of the *Be Firewise* programmes.

Recommendation 4: Provide ongoing, regular training and professional development to FRMOs and fire-fighters to establish a consistent level of knowledge about both *Be Firewise* programmes.

Recommendation 5: Focus on increasing the range of interactive online tasks that are available in the year 7 and 8 programme.

Introduction

Purpose of the evaluation

The New Zealand Fire Service Commission (the Commission) seeks to achieve ‘reduced consequences of unwanted fires for people, property, communities and the environment’² as one of its key outcomes. To achieve this, the Commission seeks to improve public fire safety knowledge and fire safe behaviour. Children are one recognised at-risk group.

The Commission, with the New Zealand Fire Service (NZFS), promotes fire safety education messages to children through a range of activities including specific programmes to teach fire safety awareness and behaviour. The programmes target different age groups, namely three to four years olds (early childhood education); five to six year olds (Year 1-2 level) through the *Get Firewise* programme; 11-12 year olds (Year 7 and 8 level) through the *Be Firewise* programme and senior secondary school students particularly those aged 16 years and older (Year 11 onwards) through the *Be Firewise - Party at Our Place* programme. The two *Be Firewise* programmes, aimed at older children, are the focus of this evaluation.

The purpose of this evaluation is to help the Commission to understand:

- how to better target and promote the two *Be Firewise* programmes to schools who are not currently using them
- how to improve and strengthen programme delivery
- the extent to which teachers and students perceive the *Be Firewise* programmes to contribute to improved levels of fire safety awareness and reduce risky behaviour amongst older children, in order to inform ongoing investment in these programmes.

A comprehensive description of the two programmes is included in Appendix 1.

Methodology

Our approach to evaluating *Be Firewise* is based on two main data collection phases. First, we conducted a survey of all New Zealand schools teaching the year levels targeted by the programme to measure the awareness of and level of uptake of the *Be Firewise* programmes. The survey also explored schools’ motivations for and barriers to uptake, delivery of any other fire-safety related programmes by the school, particularly those integrated with other education programmes (eg drink driving, car crashes) and principals’ perceptions of the value of the programme and their future intention to engage with *Be Firewise*.

² New Zealand Fire Service Statement of Intent 2011-2014.

Second, we used a **case study** methodology to focus the inquiry on:

- how the NZFS promotes and supports the delivery of *Firewise*
- the decision making processes within schools about whether to participate
- how schools implement *Be Firewise*
- the value placed on the programme by teachers, principals and fire-fighters.

Survey of schools

The purpose of a survey of schools was to gain a broad understanding about the level and nature of engagement by schools with the *Be Firewise* programmes. The survey, in addition to gathering quantitative data about which schools do and do not deliver *Be Firewise*, provided a key opportunity to understand levels of awareness, participation in the programmes, motivations and barriers to engagement, delivery of other fire-safety related programmes, perceptions of value and future intentions to deliver.

The questionnaire was sent to a final sample of 1529 schools. The Ministry of Education's Directory of Schools³ was used to identify all schools in New Zealand that teach Year 7 and 8 and/or senior secondary⁴ students. A small number of schools were excluded in agreement with the Commission, for example Christchurch schools were not surveyed given that they were unlikely to be operating in a usual manner. The survey was delivered online and respondents were invited to participate by email.

The overall response rate to the survey was 38%. There was a small difference in response rates to the different questionnaires, but this was not significant: 39% for the Year 7 and 8 questionnaire, and 34% for the senior secondary questionnaire.

We looked at four characteristics to test for differences in the response sample and used these to analyse differences in findings: urban/rural location, school type (based upon school years taught), school decile and NZFS region.⁵ There were no significant differences in response patterns among any of the subgroups analysed.

For a full description of the survey approach, please refer to Appendix 2.

³ <http://www.educationcounts.gov.nz/directories/list-of-nz-schools>; accessed 18 July 2012, current as at 1 July 2012.

⁴ Defined as Year 11 and above, as the *Be Firewise, Party at our Place* programme is aimed at students 16 years and over.

⁵ <http://www.fire.org.nz/About-Us/All-Regions/Pages/All-Regions.aspx>.

Qualitative data collection

The purpose of the qualitative data collection was to gather information from FRMOs and school staff about the following topics:

- the effectiveness and appropriateness of the engagement strategies used by NZFS staff – including the selection of schools and use of incident statistics to inform the approach, and information about the level of training and support FRMOs receive to engage schools and deliver the programmes
- school decision-making processes, with respect to the *Be Firewise* programmes specifically and curriculum decisions more broadly
- programme delivery, focusing on the sequencing of delivery and the involvement of FRMOs and local fire-fighters
- perceptions of the programmes, including suggested improvements to content, and their perceived impact on students' awareness of fire safety messages and fire safety conscious behaviour.

The results from the national survey were used to identify and approach 15 schools for the case study research. The original intent of the case study research was to explore what, if any, regional differences existed in terms of programme promotion, delivery and impact. However, because of the overall low take up rate for both programmes it was agreed that there would be value in developing an understanding of overall promotion and delivery practices of FRMOs at a national level rather than focusing on specific regions.

Fourteen schools agreed to participate. Some schools did not agree to take part in the case studies for a variety of reasons including:

- preparations for National Certificate of Educational Achievement (NCEA) examinations
- staff shortages
- preparations for school-wide events (eg camps, artistic performances, and sports days).

The final sample of schools participating in the case studies included

- four primary schools
- three intermediate schools
- seven secondary schools.

Of these, seven schools had delivered one of the two *Be Firewise* programmes and seven had not delivered either programme.

Limitations

There are two key limitations associated with the findings from the case study phase.

The first limitation is the inability to make comment about the delivery of the secondary school *Be Firewise* programme and the outcomes achieved by both programmes. This is due to:

- extremely low up take of the secondary programme
- subsequent difficulties associated with identifying a suitable selection of secondary schools to participate in the case study research (ie those that had delivered the programme(s) and met other criteria such as decile and location)
- schools' unwillingness to allow students to participate in focus groups.

A second limitation of the case study research is that it is based on interviewees **retrospectively recalling** when they delivered *Be Firewise* and how. During this evaluation it became apparent that there are a number of factors that make it difficult for some interviewees to accurately recall the delivery of *Be Firewise* programmes:

- Lack of institutional knowledge. Principals and teachers did not usually record when the schools had delivered a *Be Firewise* programme. Therefore, school 'memory' is dependent on individual or group memory which may not always be reliable and vulnerable to staff turnover. Primary school staff recollections also tend to be strongly influenced by their awareness and/or delivery of the Year 1 and 2 *Get Firewise* programme.
- Schools are stressful, busy environments. In this environment things change quickly making recall more difficult.
- NZFS staff familiarity with the Year 1 and 2 *Get Firewise* programme. Greater take up and demand for the *Get Firewise* programme means that FRMOs often have more contact with primary schools and are more familiar with the Year 1 and 2 programme. As a result their recollections and examples of *Be Firewise* activities are not always distinct and tend to merge with their knowledge of the Year 1 and 2 programme.

Additional detail about the approach for this phase is provided in Appendix 3.

Awareness and uptake of *Be Firewise*

The following findings come from the survey of schools.

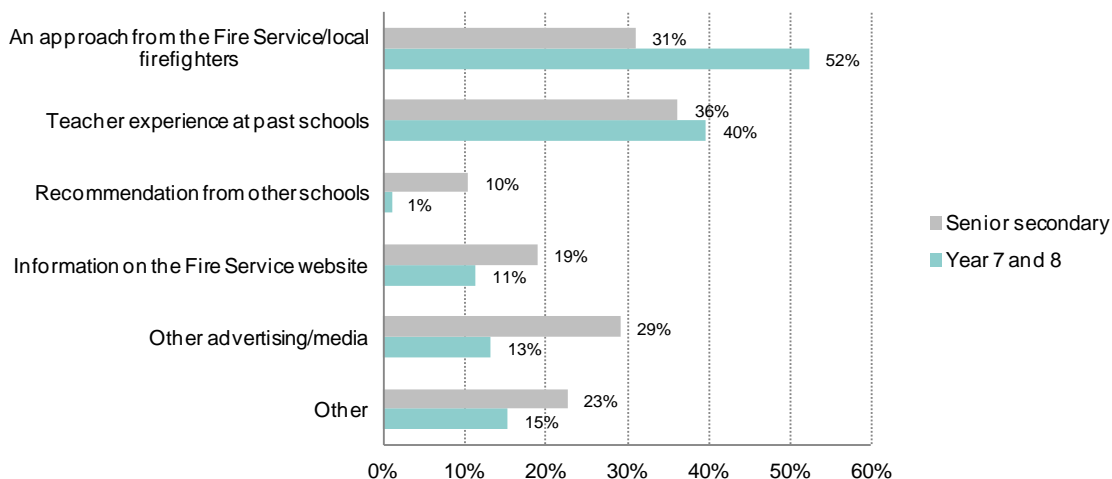
Awareness of the *Be Firewise* programmes

Survey results showed that, overall, schools were more likely to be aware of the Year 7 and 8 *Be Firewise* programme than of the senior secondary programme. Seventy-five percent of survey respondents reported they were aware of the Year 7 and 8 *Be Firewise* programme. In contrast only 43% of responding schools reported being aware of the senior secondary programme.

As well as comparing levels of school awareness for the two programmes, survey results were analysed by location (ie rural and urban), school type, decile and NZFS region. This analysis shows that the levels of schools' awareness varied by school location, decile and NZFS region, with higher awareness generally evident among rural schools and those in regions three and five. There was generally lower awareness of either programme amongst high decile (ie decile 8-10) schools.

Schools' awareness of the programme was driven most strongly by direct approaches from NZFS staff and teachers' previous experiences of using the programme (see Figure 1).

Figure 1: Sources of awareness of the *Be Firewise* programmes

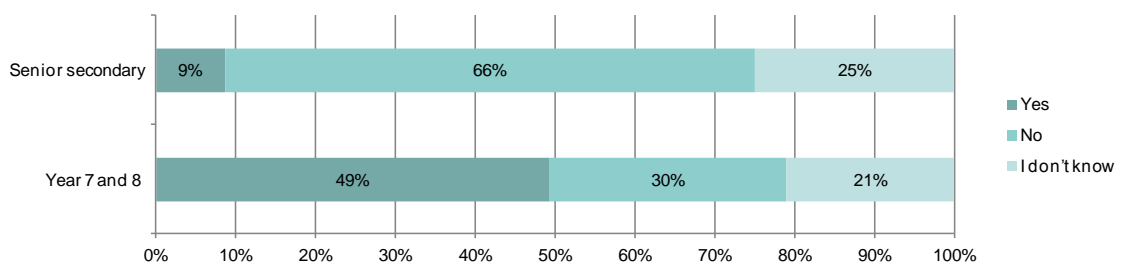


Uptake of the *Be Firewise* programmes

Just under half (49%) of schools responding to the survey reported having ever delivered the Year 7 and 8 programme, and only 9% reported delivering the senior secondary *Be Firewise - Party at Our Place* programme (see Figure 2).

Overall the survey results indicate that take up of both programmes is relatively low, particularly when compared with take up rates of 92% reported for the Commission's Year 1 and 2 *Get Firewise* programme in 2008.⁶

Figure 2: Extent of delivery of the *Be Firewise* programmes at any stage



Factors driving the uptake of the *Be Firewise* programme

Given the extremely low numbers of schools delivering the senior secondary programme, it was not possible to analyse their results in terms of delivery any further. Further analysis here is for the Year 7 and 8 programme only.

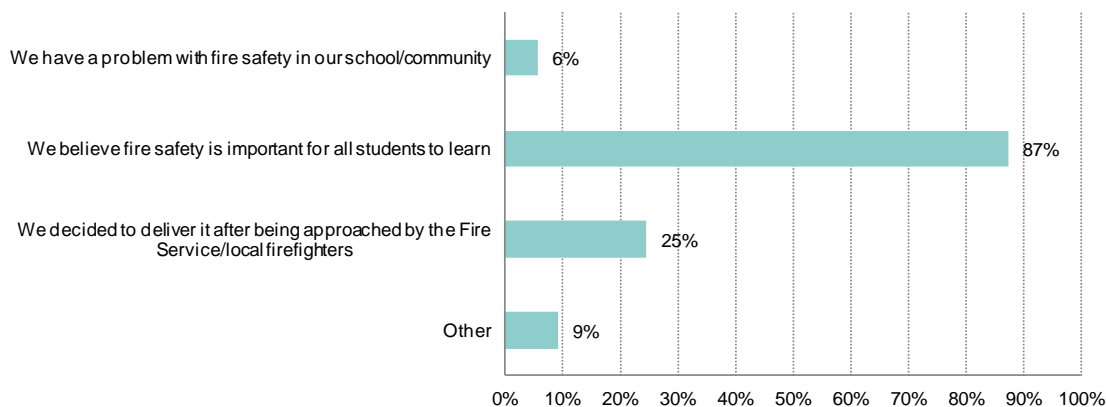
Schools delivering the Year 7 and 8 programme

- Of the 49% of schools who had ever delivered the Year 7 and 8 programme, 58% had delivered it since 2010
- Primary schools (61%) and schools located in rural areas (60%) were most likely to have delivered this programme, with rural schools being most likely to have delivered it in the last two years (70% v 47% for urban schools)
- Schools in Region 5 (70%) were most likely to have delivered the programme.

Schools' decision to deliver the Year 7 and 8 programme recently appears to have been largely based on the perceived value of fire safety education (cited by 87% of respondents, see Figure 3).

⁶ Evaluation of the Firewise Programme for Year One and Two Students
<http://www.getfirewise.org.nz/Research/Firewise%20Evaluation%20Martin%20Jenkins.pdf> .

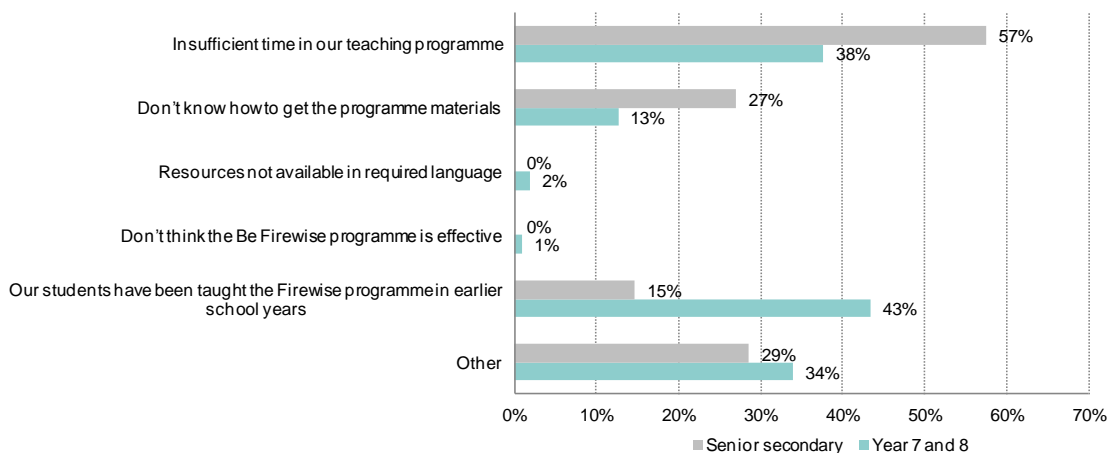
Figure 3: Reasons for delivering the *Be Firewise* programme in the last two years⁷



Factors inhibiting uptake of the *Be Firewise* programmes

A range of factors appeared to inhibit take up of the programmes. Insufficient time in the teaching programme was most often cited by senior secondary respondents as the reason for never having delivered *Be Firewise*, while students' having been taught the earlier *Firewise* programme (ie *Get Firewise* for Year 1 and 2 students) was the reason most often given by Year 7 and 8 respondents (see Figure 4).

Figure 4: Reasons why schools have not ever delivered the *Be Firewise* programmes



⁷ Results for Year 7 and 8 programme only.

Appropriateness and effectiveness of engagement strategies

The survey results show that awareness and take up of both *Be Firewise* programmes is low, suggesting that the current engagement strategies used to promote the programmes need to be enhanced. For this reason, engagement strategies used by FRMOs and decision-making of different schools were key topics of investigation within the case study research.

Current engagement practices

Influence of the Year 1 and 2 *Get Firewise* Programme

The case study findings reveal that the engagement processes and strategies used by local FRMOs to promote *Be Firewise* to schools are heavily influenced by the higher level of awareness and uptake of the *Get Firewise* programme aimed at Year 1 and 2 primary school students. FRMOs comment that the Year 1 and 2 programme is very well received and that school feedback suggests it is easy for teachers to use and effective in enhancing student fire safety knowledge. Many FRMOs believe that the Year 1 and 2 programme ‘sells itself’ and generates a high level of demand. In multiple instances (both NZFS and school staff) recollections and experiences of the Year 7 and 8 programme were confused or merged with their experiences of the Year 1 and 2 programme.

As a result of the strong focus on the Year 1 and 2 programme, NZFS staff are generally less familiar with the content of the Year 7 and 8 and senior secondary *Be Firewise* programmes and often forget to consciously or directly promote the *Be Firewise* programmes.

Year 7-8, there hasn't been a lot of work done... because of the size of the task. Work I've done with Year 7-8 has been predominantly with full primaries that have been attached to primary school ... It's been fairly reactive up 'til now rather than proactive. (FRMO)

Familiarity with the primary school context and curriculum

The experience of engaging predominantly with primary schools appears to have ‘set the tone’ for how FRMOs engage with all schools resulting in a relatively generic approach or model that is not consciously tailored or adapted to intermediate and secondary schools.

NZFS staff tend to have seen the Year 1 and 2 programme used with a wide range of primary schools and are more aware of ways in which the Year 1 and 2 programme may be used in the primary curriculum, and able to articulate this to school staff. Some staff also commented that they find it easier to work with younger age groups because they are more impressionable and readily engaged by the resources and presence of local fire-fighters.

The lack of experience in secondary settings means they are much less adept or able to draw upon relevant examples or suggestions that engage staff effectively in these settings.

... with high schools ... I need to give that more thought... and have a bit more experience with the principals to say "How can we help you, not make things difficult for you?". How can we make it so I can walk in there with confidence and go "Look what I have here, do you think you could do this, this and this? Would this assist you in any way inside your curriculum?". (FRMO)

Ad hoc modifications to the Year 1 and 2 programme

A number of FRMOs believe the Year 1 and 2 programme is suitable for older age groups in Years 3 to 6 and have worked with teachers to deliver it at these levels. There are also cases where the programme targeting Year 7 and 8 students has been adapted for use with younger students. This is perceived as appropriate and justified because it establishes a foundation level of fire safety knowledge among younger students who are more vulnerable to harm in the event of a fire.

Preschool and primary is where my focus is at ... that is the foundation ... Sometimes I drag the yr 7/8 stuff back down into the yr 5/6 and help them redevelop that a bit. (FRMO)

This potentially leads to over-exposure of schools and students to the *Firewise* programmes, which may reduce their interest and opportunities to pick up the Year 7 and 8 programme where this is applicable (ie in a full primary). This is supported by survey findings in which students having been taught the earlier *Get Firewise* programme was the most common reason cited by Year 7 and 8 respondents (43%) for not having delivered the *Be Firewise* programme.

Other issues affecting engagement

Limited direct, proactive marketing of *Be Firewise*

At the regional and local level, FRMOs and local fire-fighters are less likely to actively promote these two programmes to schools in their area, and instead simply respond to requests for the *Be Firewise* programmes. There is more emphasis placed on promoting the Year 1 and 2 programme, with promotion of the Year 7 and 8 programme occurring by chance to primary schools who take up the Year 1 and 2 programme, for example by mentioning it in passing to key staff.

This is particularly true of those who have recently taken up the FRMO role. These staff tend to be mainly familiar with the Year 1 and 2 programme (and the higher demand from primary schools) and are aware of organisational targets associated with promoting the Year 1 and 2 programme. Experienced FRMOs tend to be more knowledgeable about the *Be Firewise* programmes and more conscious of promoting these when opportunity arises, but they note

that demand for the Year 1 and 2 programme makes it difficult to find time to proactively market the *Be Firewise* programmes.

When an opportunity arises, experienced FRMOs will seek to enhance school and community awareness of the programmes. While proactive face to face contact is seen as the most effective way to encourage schools to take up the programmes, making use of every and any opportunity to widely promote the programmes is seen as valuable, even if this is only in a limited capacity. Examples include using some programme content (ie media clips) as part of other events/settings, such as playing in the background as part of a community safety expo, or showing clips during a school assembly, even though these activities do not allow a lot of proactive direct engagement with school staff.

Limited tailoring to different school contexts

FRMOs are aware that some engagement strategies are more effective than others (eg face to face contact relative to sending letters) and recognise common patterns and differences in how schools respond to their current promotional strategies. However there is limited evidence of FRMOs or other local fire-fighters using this information to actively adapt or tailor their engagement strategies to different school types or to actively target schools that have a lower awareness or take-up of either programme. This reflects the fact that FRMOs' approach to engaging schools is more process than outcome-oriented. FRMOs involved in the study consistently follow a fairly standard process for promoting the *Be Firewise* programmes to schools. This process reflects recommended organisational guidelines and involves:

- *Identifying schools which may not have had contact with NZFS* or requested any *Firewise* education resources (ie either *Get Firewise* or *Be Firewise*) over the last two years. Staff typically use Station Management System (SMS) records to identify these schools. Most staff recognise that SMS data is unlikely to provide accurate information about school-uptake of the programmes since schools can order *Firewise* resources directly from national office via the NZFS website. In some areas, FRMOs actively review fire incident and investigation information to identify possible fire causes. This information is compared with school take up rates of *Firewise* programmes to identify schools that may be worth targeting in a more proactive fashion.
- *Sending a letter to schools in the area* – either all schools (in a smaller region) or those who have been identified as not having requested a *Firewise* programme or been approached by local fire-fighters for two years or more. Most FRMOs were not able to recall the exact content of these letters and whether or not they referred directly to the *Be Firewise* programmes or were tailored to school types. FRMOs were not involved in developing these, commenting that this task was typically managed by someone in a *Firewise* co-ordination and support role. Letters were typically aimed at the principal or relevant senior staff (ie Year 7 and 8 school dean, syndicate leader or health programme co-ordinator). While almost all FRMOs mentioned letters as the mechanism for initially

contacting schools, many noted that letters appeared to be ineffective in stimulating school interest or take up of the *Be Firewise* programmes.

- *Making follow-up contact with schools either through a phone call or face to face visit* - typically approaching the Principal in the first instance. Follow up contact tends to be informal (ie not always pre-arranged) and when undertaken face to face, focuses on explaining how the *Be Firewise* programme resources can be used in a curriculum/class context. The majority of FRMOs believed a physical visit (spontaneous, pre-arranged or both) was most effective in encouraging schools to take up the *Be Firewise* programmes.

Internal organisational factors

Resource constraints

The volume and concentration of schools vary across each of the Fire Service regions and within districts. Regular and proactive promotion of the Year 1 and 2, Year 7 and 8 and senior secondary programmes to all relevant schools in each local district following the recommended processes (ie identification of suitable schools, letters sent, follow-up contact) requires considerable co-ordination and time. FRMOs note that current staffing levels combined with geographical spread of schools and/or density of schools in their local area constrain their ability to proactively or consistently target all schools, and contributes to the tendency to respond reactively to requests for the Year 7 and 8 and senior secondary programmes if and when these occur.

Other operational staff (eg paid or volunteer fire-fighter staff) are reported as assisting with promotion and delivery of the *Be Firewise* programmes, however FRMOs note that it is not always appropriate or possible to draw on these staff. Operational staff responsibilities mean their participation in promotion or delivery activities can be unreliable. Failing to attend a pre-arranged meeting with school staff or a classroom visit disrupts the school timetable and contributes to a negative perception of local NZFS staff as well as undermining the effectiveness of programme delivery. FRMOs also note drawing on operational resource to support their work is particularly problematic in districts staffed predominantly by voluntary service officers:

The school used to get the Fire Service out to talk to the children as part of the programme, but they are just too busy, it's too hard to get them out now. They are a paid brigade. They have been good when they are out here, but a couple of times they got called away. (Teacher, Composite)

And if we don't get back, some of the feedback I've heard from teachers, "well the people come, they were very good, but we weren't happy with the way it was done [ie called away] and we don't want you back, sorry". (FRMOs)

These constraints suggest that there would be value in assessing the suite of *Firewise* programmes to see where effort and resources might best be directed. FRMOs believed that it

was worth capturing students at all ages the programmes currently target. However, given the finite resources, targeting the highest priority age groups rather than spreading resources thinly could result in improved fire safety outcomes overall.

The impact of recent restructuring

Internal restructuring undertaken in 2012 has resulted in a number of changes in the way that promotion and delivery of *Firewise* programmes is now managed. Our research suggests that these changes may be exacerbating pre-existing uncertainty and, in some cases, reluctance amongst some staff as to how to engage effectively with schools.

A previous evaluation of the *Be Firewise* programme found that some local fire-fighter staff involved in promoting the *Firewise* programme were supportive about its value and tended to be proactive in promoting it to schools while others were unsupportive and reluctant to engage with schools.⁸ The evaluation suggested that these views were ingrained and likely to have been held for a number of years.

The restructuring has led to changes in who is accountable for the promotion and delivery of *Firewise* programmes. For example, national oversight and co-ordination of the *Firewise* programmes has been disestablished and this responsibility devolved to five Principal Advisor Fire Risk Managers. FRMOs are now also responsible for two previously separate 'portfolios' ie community education (which includes the promotion and delivery of the *Firewise* programmes) and built environment (undertaking fire safety building inspections and fire investigations).

FRMOs include individuals with a strong background in either built environment or community education, though typically not both. Case study research indicates those with less experience in the educative aspect of the FRMO role are less clear or confident about the nature and scope of their promotional and delivery responsibilities. They tend to raise questions, for example, about the extent to which local fire-fighters are meant to contribute to promotion and delivery of *Be Firewise*, and whether FRMOs should focus on promotion relative to delivery or have an equal focus on both tasks. While most express a genuine belief in the value of fire safety education, there is considerable uncertainty about how to approach the task.

There is also some concern and confusion as to where responsibility and accountability for co-ordination and oversight of *Firewise* lies, in practice, within their region.

It comes back again to my question with the introduction of *Firewise*, what was the role – was it to provide the resources to the school for them to present or was the expectation that we would [present]? That's the thing we need to ask ourselves. (FRMO)

A number of FRMOs note that specific skills and expertise are required to work effectively in a classroom context and that these skills are not consistently demonstrated by all FRMOs or fire-

⁸ New Zealand Fire Service (2008) Evaluation of the *Firewise* Programme for Year One and Two Students.

fighter staff. For example, having a level of familiarity with curriculum and learning approaches commonly used by schools helps staff explain how the *Be Firewise* programmes can be positioned in different subject areas. Similarly, staff need to demonstrate an ability to establish a rapport with students in a variety of age groups. These skills enable principals and teachers to understand the value of the programmes and have confidence that it can be delivered to best effect for students.

To me, you really want people that one, want to do it, and two, that can do it really well. Cause all you need is one individual to go there and it doesn't go well, you don't get invited back (FRMO)

This uncertainty and concern, combined with potentially unsupportive attitudes from some local (ie station level) fire-fighters, is likely to hinder FRMOs from being consistently effective in engaging with schools to promote *Be Firewise*. For example, staff may be reluctant or even resistant to engage with schools - leading to missed or lost opportunities to promote and deliver the *Be Firewise* programmes.

Supporting the promotion and delivery of Firewise programmes as a 'lifecycle' intervention

The NZFS fire safety education programmes are an intervention designed to target students at key points in the educational 'life-cycle' (ie early childhood education, primary, intermediate and secondary school). The rationale for such an approach is based on recognition that students' ability to learn evolves over time, and that their risk of harm from fire and ability to prevent the incidence and consequences of fire also changes over time. Consequently the four *Firewise* programmes are targeted at particular age groups and designed to reflect pedagogical best practices with respect to those groups.

However, while the lifecycle approach is inherent in the design of the programmes, at the operational level there seems to be limited emphasis placed on promoting fire safety education as an integrated intervention. For example, the *Firewise* resources associated with each of the four programmes make extremely limited references to the existence of the other programmes. There also appears to be no overarching guidance material (eg visual map or model) to remind or support FRMOs and fire-fighters to think of the programmes as a single, tailored educational intervention. Although operational staff are generally aware of all four programmes, they tend to think of them as stand-alone, discrete programmes rather than subcomponents of a single educational intervention. The relatively 'high profile' of the Year 1 and 2 programme amongst schools tends to further reinforce FRMOs' perception of *Firewise* programmes as separate rather than interconnected. From an engagement perspective this can result in missed opportunities to promote the *Be Firewise* programmes.

I tend to forget about the year 7/8 but I know I have talked to some of the schools about the children if they miss in their early years. But I probably don't talk about it as much as I should. (FRMO)

Examples of good practice

Experienced staff focus on establishing relationships

There is a strong awareness amongst FRMOs, particularly those who have considerable experience working with schools, that establishing a relationship and meaningful connection with key school staff is the most effective way to encourage schools to take up fire safety programmes. Once established, relationships enable NZFS and school staff to develop a broader appreciation of each others' goals and to work together to find ways of incorporating *Be Firewise* content into a school's current teaching focus or curriculum. Relationships also facilitate a longer term NZFS-school partnership that is likely to encourage schools to deliver the programmes on a regular basis.

As a result, while FRMOs follow the common, standard processes for engaging schools, experienced staff tend to spend more effort creating opportunities to meet face to face with school staff. They also place less emphasis on the importance of fire safety education and focus more on engaging staff in a discussion about *how to use* the *Be Firewise* resources and where and how the activities may be positioned within the curriculum. Staff also recognise that relationship building is a time-consuming process that will only lead to increased uptake rates over time.

Wherever I've been to schools where I've managed to get to staff meetings and I've started to form relationships with schools ... them understanding exactly what we're trying to achieve, knowing we're partners with them and knowing that they have access to our resources, both in physical resources and people to assist them ... if you were to ask me how long did I think before I had a really good relationship with the majority of the schools ... I would say 4-5 years. (FRMO)

Creating opportunities that maximise engagement

When engaging face to face with school staff, there are specific variations staff have developed in order to build stronger interest in the *Be Firewise* programmes either amongst a wider group of schools or amongst a greater number of staff within an individual school. Typically these practices are used with primary schools rather than intermediate or secondary schools – reflecting the greater demand and uptake of the Year 1 and 2 programme. These include:

- Inviting a number of local principals to a breakfast meeting. The meeting was hosted by Rotary and involved a number of speakers presenting during the breakfast including the FRMO. This approach was a time efficient way of enabling *Firewise* resources to be promoted to a broader target group in an informal 'no pressure' setting and an opportunity for the FRMO to establish a positive relationship with a range of local Principals.
- Deliberately arranging group contact within a school for example by:
 - visiting at morning tea time (and taking scones)

- presenting at assembly
- attending a joint syndicate meeting.

These strategies increase the chances of take up of *Be Firewise* programmes in a range of ways:

- *Positioning Be Firewise within existing curricula.* Creating a forum for dialogue between staff allows them to discuss the value of the programmes and generate a wider range of ideas about how fire safety education messages can be integrated into their existing curriculum theme(s), term topic(s) and wider school values. This is important given the range of topics that require coverage in the school curriculum and the number of additional programmes promoted to schools which potentially compete with fire safety education.
- *Building FRMO knowledge.* Discussing how to position *Be Firewise* also provides an opportunity for FRMOs to learn more about specific barriers, concerns or misunderstandings school staff may have about fire safety education specifically and NZFS services more generally. For example most FRMOs are very aware of the concerns expressed by many secondary schools about incorporating additional learning topics with their existing curriculum. However there may be other tangential issues (eg repeat activation of a schools' fire alarms) that lead to resistance to engage with NZFS generally and inhibits schools' willingness to consider the programmes. Shared discussions generate useful insights FRMOs can draw on to refine and adapt their engagement strategies in the future. In the example presented below the FRMO concerned sought an exemption for the school involved as a goodwill gesture.

The issue is they have resentment about the cost of these [callout] bills. Its no fault of their own but the school gets left with them. There was no conversation. It was put straight into the hands of Baycorp. Next breath we turn up with cap in hand and try to sell them the Firewise programme. You can't kick someone and then turn up and expect to be their friend. Not going to happen. (FRMO)

- *Building wide familiarity with the programme resources.* Engaging a group of staff ensures that awareness of the programmes is not dependent on the knowledge and experience of a single individual who may move on. Wide familiarity with programme content can contribute to broader take-up of the programme across a school (ie multiple classes) and repeated delivery over time.

Decision-making processes of schools

Factors schools consider when deciding whether or not to deliver *Be Firewise*

The case studies clearly indicate that the factors that primary, intermediate and secondary schools consider when deciding whether or not to deliver the *Be Firewise* programmes are very similar, though the level of emphasis given to each differs between primary/intermediate and secondary schools. Differences in emphasis reflect the differences in the decision-making processes and the ways that learning is structured and resourced in primary, intermediate and secondary schools. This suggests that there would be value in NZFS staff tailoring the way they engage with different schools to promote the two *Be Firewise* programmes.

Case studies reveal that schools tend to consider the following factors when determining whether or not to take up the *Be Firewise* programmes:

- **Degree of overall 'fit' with current curriculum, community or thematic focus and learning objectives.** School staff need a very clear sense of how and where fire safety messages can be incorporated into their current or planned teaching focus and how the programme activities will contribute to specific learning objectives.
- **Topical relevance.** Schools recognise that well publicised local, national or global issues provide a valuable real life context for student learning experiences and often use these to create a focus for learning over a school term. Primary schools agreed that having more information about fire incident statistics would help create interest, an important aspect of the inquiry learning approach. Intermediate and secondary schools saw this as less relevant given the existing requirements of the curriculum.
- **Student need and interest.** The need to equip students with knowledge and skills to manage their increasingly adult responsibilities while still covering core curriculum content means that all schools actively consider students' level of need and likely benefit from exposure to fire safety messages relative to other of topics that may compete with fire safety for inclusion in the curriculum.
- **Quality and availability of external expertise.** External expertise in the form of a visit from local fire-fighters is consistently seen as enhancing the impact of fire safety messages promoted in the *Be Firewise* programmes, allowing students to take fire safety messages more seriously. Schools consciously consider any past interactions they may have had with NZFS staff and any negative experiences (eg where fire-fighters have not shown up, failed to follow up school requests for support or been under confident in a class setting) tend to lower schools' interest in delivering the programmes.
- **Quality of the *Be Firewise* teaching resources.** The availability of a comprehensive 'ready-made' set of quality resources and suggestions for delivery has significant influence on schools willingness to deliver the programme at the intermediate and secondary level.

Primary schools tend to be less concerned about the quality of *Firewise* teaching resources as teachers at this level commonly adapt or create teaching resources and have a greater tolerance or willingness to do this to support *Firewise* delivery.

- **Skill and enthusiasm of staff.** The skills and knowledge required to teach fire safety messages are considered by all schools but are given less emphasis than many other factors. The presence of a key individual who is willing and able to effectively ‘champion’ the value of *Be Firewise* and to take ownership of the delivery process is often a key factor in a school’s willingness to consider *Be Firewise* delivery.

Differences in decision-making processes used by schools

The case studies show there are differences in the processes schools follow when making a decision about whether or not to deliver *Be Firewise* programmes.

Primary and intermediate schools decision-making processes

Individual (Principal) decides > responsible teacher(s) informed > delivery

In these schools the decision to deliver the programme is typically made by *an individual* – either the school principal or a senior staff member with responsibilities in a relevant area (eg health co-ordinator, or syndicate leader). Individual decision-making in these schools appears to be **most strongly** influenced by:

- a clear understanding of how *Be Firewise* will align with current/planned curriculum themes and term topics
- a belief in the immediate topical relevance of fire safety and ability to explore fire safety issues within an inquiry learning model
- a clear view of student need and interest in fire safety information - in particular, how students may benefit from exposure to fire safety messages and what they may enjoy about it.

This decision is then communicated to relevant teaching staff (ie those teaching the target age group within the school). Teaching staff are expected to take ownership of the delivery process and to draw on their professional experience to integrate the programme content into their current or future teaching programme. Consequently, in primary and intermediate schools, less importance or weight is placed on the interest or skills of teaching staff, availability of external expertise or the quality of the teaching resources.

Secondary school decision-making processes

Individual (Principal) considers > nominated individual(s) considers > group consultation and decision > responsible teachers informed > delivery

In secondary schools the decision-making process is typically determined by *a group* of senior staff. This is understandable given that inclusion of fire safety education will be at the expense of other topics and changes to current curriculum arrangements are likely to impact on multiple staff due to timetabling requirements. The group decision-making process appears to be **most strongly** influenced by:

- A clear, direct understanding of how the programme content links to existing curriculum topics, NCEA learning objectives and credits.
- A clear understanding of the practical details involved in delivery, that is who will deliver, how long will it take, the external expertise required and available from NZFS staff and the quality of the programme resources. This understanding is generally developed by key individual who has been asked to consider the programme in more detail and to present this information to assist the group in determining the ultimate value of delivering it.
- Student need and direct benefits from participation – for example, reduction in unsafe or risky behaviour. Many secondary schools cited inappropriate behaviour (eg lighting fires in school rubbish bins) as an example of ‘student need’ that would influence them to deliver the programme.

Once the decision is made to deliver, relevant staff are expected to take ownership of the delivery process. Consequently, in secondary schools less emphasis is placed on the immediate topical relevance or staff skill and enthusiasm for delivering the programme.

Delivery of *Be Firewise*

The extremely low uptake of the secondary programme *Be Firewise – Party at our Place* means it was not possible to capture detailed information about its delivery.⁹ As a result the findings presented below relate only to the delivery of the Year 7 and 8 programme.

Delivery of the Year 7 and 8 programme

Intended delivery

The current format for the Year 7 and 8 programme is intended to be delivered by teachers as a 14-16 hour stand-alone programme of activities based on a resource book and CD for teachers and a CD resource for students with interactive games, fact sheets, media clips and quizzes. Activities are expected to be completed by students at school, either as part of the health or physical education curriculum. Some activities (eg the development of a home fire escape plan) can be undertaken using the online teaching resources available on the NZFS website.

A supplementary fire safety presentation or lesson delivered by local fire-fighters is not seen as a core part of the revised programme, but is optional and can be undertaken depending on school interest and local fire-fighter willingness and availability.

Actual delivery

Case study interviews indicate that actual delivery broadly follows what is intended although there are variations in the way that teachers tend to sequence their use of the resources. It should be noted that many teachers had difficulty recollecting the details of how the programme had been taught. This was mostly due to not having delivered the programme recently.

Use of the teacher resource booklet

While teachers mentioned completing a range of the activities outlined in the teachers' resource booklet, those related to fire escape planning were most often recalled in detail. Teachers noted that developing a fire escape plan is particularly engaging activity for students because it allows them to consider and apply fire safety messages to their own lives in a very practical and direct way. The ability to undertake this task online and complete in class and/or as homework also makes it very appealing to students and teachers alike. Teachers note that Year 7 and 8

⁹ Although seven secondary schools participated in the case studies only two of these had delivered the programme in the last two years. Consequently, detailed information about delivery was extremely difficult to obtain. In one school staff changes meant current staff were not able to recollect the delivery process. In the other, the *Be Firewise* programme was delivered as part of a wider programme of fire safety education that was unique to the NZFS region.

students are digitally very able, have a strong preference for interactive online activities and can become bored by written tasks. Encouraging students to complete the activity online incentivises students and enables many to complete the task at home - increasing parental awareness of good fire safety practices.

Use of media clips

The value of the media clips lies in their ability to make the learning experience for this age group as real as possible. FRMOs and teachers alike note that the media clips are relatively graphic in so far as they show actual fire events and their consequences. These tend to have a profound effect on students. The 'shock value' of this information is seen as important in capturing students attention, and reinforcing their awareness of the dangers of fire and consequence of failing to take appropriate actions. Teachers appear to vary in the way they make use of the media clips. Variations include:

- Showing segments of the media clips to stimulate students' interest in the topic prior to undertaking written tasks. This is often done when the programme is part of an inquiry-learning experience.
- Viewing some or all media clips throughout the teaching component – to maintain interest and/or reinforce key messages.
- Viewing some media clips as part of a fire-fighter presentation or visit after the teaching component is completed. This gives students the opportunity to explore their responses to the clips by asking questions of professional fire-fighters. This is seen as a way of making the learning experience authentic for students and helping embed key fire safety messages.

Visit or presentation from local fire-fighters

While a presentation or visit from fire-fighters is not intended as a core part of the Year 7 and 8 programme, schools see a visit as a highly desirable and important element of the programme. For example, survey results show that the majority of schools who have delivered the *Be Firewise* programme in the last two years included fire-fighter visits as part of delivery and most (74%) believed these visits add a lot of value to the programme. The survey findings also indicate that more schools are probably interested in arranging a visit as part of the programme's delivery but have not realised this was an option or had difficulty in arranging visits ('we didn't know we could request a visit' was cited by 44% of responding schools as the reason why fire-fighter visits were not part of their delivery of the programme). The case studies also indicate that a fire-fighter visit helps cement and reinforce students' understanding of the programme's messages:

I think it is always valuable for someone to come in and speak with the students because it is a different person, someone from their community delivering an important message (Teacher, Intermediate)

The format of fire fighter visits varies from school to school. Variations include:

- presentation in class – often involving use of media clips, followed by a question and answer session facilitated by the fire-fighter or FRMO
- creation of a ‘real-life’ scenario with the support and participation of local fire-fighters
- visit to a fire station where programme media clips may also be viewed, followed by a question and answer session.

Position of *Be Firewise* within the school curriculum

Understanding how schools position *Be Firewise* content within their curriculum tends to reflect their perception of the value of fire safety messages and this in turn shapes how teachers use the programme materials. This information can assist in generating insights to help NZFS enhance promotion and increase uptake of fire safety messages in educational settings more generally.

The Year 7 and 8 year programme is currently designed to be part of the Health or Physical Education curriculum. The evaluation findings indicate that schools tend to position the programme either as part of the health curriculum or a community-oriented inquiry approach.

When *Firewise* is used as part of the health curriculum it is typically part of a wider focus on safety and one of a series of safety topics covered, such as cyber safety, road safety, water safety. In these cases, the rationale for including fire safety messages tend to reflect teachers’ awareness of Year 7 and 8 students being vulnerable to a range of dangers. Many teachers commented that students at this age are very internally focused and are most engaged by learning opportunities that relate directly to their personal experiences or those of peers. This introspective tendency can mean students are less conscious of various dangers or the consequences of their actions and how they may affect others. As a result, fire safety messages are seen as a natural and important component of safety-related content.

In these cases, the delivery format tends to involve completion of written activities to build up a basic awareness of fire safety messages. This is followed by a fire-fighter visit to the class. During the visit, various media clips are shown and students are encouraged to participate in a question and answer session that is facilitated by the fire-fighter with the teacher remaining present.

When *Firewise* is positioned as part of a community-oriented inquiry focus, the school’s rationale for including the programme tends to be broader, with some emphasis given to the role of the NZFS in protecting the local community and the contribution voluntary fire-fighters make to communities. Inquiry learning requires students to take ownership of their learning process by generating questions about issues or topics that are directly relevant to them in some way. Emphasising the community-wide value of fire prevention is seen as a way of providing a real life context for engaging students in the programme content. This is particularly

important for schools with a strong commitment to inquiry approaches, however maintaining a strong community relationship is an important organisational philosophy for many schools.

When *Firewise* is delivered as an inquiry learning topic, there tends to be more variation in how the programme resources are used. Variations include:

- Showing segments of the media clips to students prior to undertaking written tasks. This is generally to highlight students' awareness of the consequences of fire and encourage them to ask questions that can be used to guide an inquiry approach.
- Interspersing written activities with use of the media clips.
- Fire-fighter visit midway through the teaching component of the programme, followed by a practical demonstration at the end of the teaching component.

Suggested improvements to Year 7 and 8 programme resources

The case study research also explored principals', teachers' and FRMOs' perceptions of the quality of the *Be Firewise* programmes with a view to identifying potential improvements that could be made to these. While some improvements could be made to the shape and form of the Year 7 and 8 programme, the content is considered effective in enhancing students' awareness and knowledge of fire safety and prevention.

Stuff that is in there is reasonably good and yes it does [appeal to teachers and students] to be fair. The stuff that's in there is really quite good. Its the methodology we need to look at.
(FRMO)

The three main areas for improvement are:

- the development of a student workbook
- a stronger focus on interactive learning activities
- updating the content of the media clips and activities.

The development of a student workbook

Having a workbook for students to use to complete programme activities in and to take home was consistently identified as desirable by FRMOs, principals and teachers. The availability of a tangible product is seen as a way of signalling that fire safety is a genuine learning area as opposed to a topic that can be treated as optional or a 'free period'. A physical workbook is seen as a means of reinforcing students' understanding of key messages, as it can include additional information that can be read after teaching activities and shared with parents. FRMOs noted that making copies of written activities either from the teachers' resource booklet or the CD-ROMs is time-consuming for teachers and, as a result, FRMOs often provide a single school with multiple copies of the CD-ROMs.

They do it as a disc. But the disc is... not many of them take it home. Some schools I go to say we haven't really got anything that we can copy these with. I'm handing out discs galore to copy, 700-800 at a time. That's what we need to be able to hand out to intermediates so they don't have to worry about trying to copy stuff. It has to be in front of them and easy as. (FRMO)

I believe the students need a take home homework book to engage them on what's being already said in the classroom. ...They just think its a free period of someone chatting. ...Once they leave the classroom, its all forgotten. (FRMO)

A stronger focus on interactive learning activities

Increasing the range of tasks available for students to undertake online is consistently identified as a very important area of development that will significantly enhance the value of the Year 7 and 8 programme. A number of principals commented that they have (or are planning to have) classes that involve students working entirely online using a variety of application or web-based activities. Students will be expected to 'bring their own device' to participate in these classes.

There is a general recognition amongst FRMOs and school staff that increasing use of online technologies to support learning is necessary. Increasing numbers of students have access to personal devices that can be used to facilitate online learning. Teachers and FRMOs also note that students are especially engaged by interactive online learning experiences (such as completing the fire escape plan online). They also note examples of online activities that are designed to provide students and teachers with feedback about a student's level of achievement. Such examples are highly valued by teachers and may provide a useful guide for improving the format of the Year 7 and 8 programme.

If we're going to redevelop it, we have to go ahead a bit ... apps and web based stuff. They [schools] are going down that road and we have to look to the future. (FRMO)

They really like things that give them instant feedback. Like yes you got it right, a big tick. Or giving them a score at the end of it. Points etc. Maybe a timed race. All those sorts of things they enjoy doing. (Teacher, Intermediate)

Updating the content of the media clips and written activities

While the current materials are considered to be effective, most participants in the case study research identified one or two aspects of content as being slightly outdated. This was true for the teaching resources – mostly the booklet (as opposed to the CD-ROMs) and the media clips.

Suggestions for improvement fell into two broad categories:

- **Making materials more representative of New Zealand society.** Many comments and suggestions for improvement related to specific aspects of the current content that are seen to lack resonance with the school or students targeted. For example, including families and/or students from higher socio-economic groups, greater use of well known

New Zealand people and New Zealand music in the media clips. Other suggestions relate to specific aspects of content that are seen to be old and simply 'out of date'. These improvements are seen as being likely to slightly enhance students' interest and the personal relevance of the safety messages for students, but are viewed as 'nice to have' rather than essential by teachers.

Maybe there could be a bit of difference in the videos because they are very different age groups. We have got the families in the videos but also using people that students can connect with on the video as well, perhaps people their own age and background, New Zealand artists, music artists - because the students here love that kind of thing, or even sports people. (Teacher, Intermediate)

One video clip ... talks about fire service advertisements. It still has the old bright spark on it. That needs to be changed ... I have the latest pack and it hasn't been updated recently. (FRMO)

- **Including additional tasks and activities based on situations that students in this age group are likely to experience** particularly relating to babysitting and the use of fireworks were frequently suggested. These two topics are seen as good examples of situations in which students might not take their responsibilities seriously and engage in activities in order to amuse themselves or others without thinking of the potential fire risks and consequences for themselves or others.

Also doing fireworks in the fire safety message could be good as well... because they think it is funny and fun to be lighting fireworks anywhere but they don't think about the consequences. (Teacher, Intermediate)

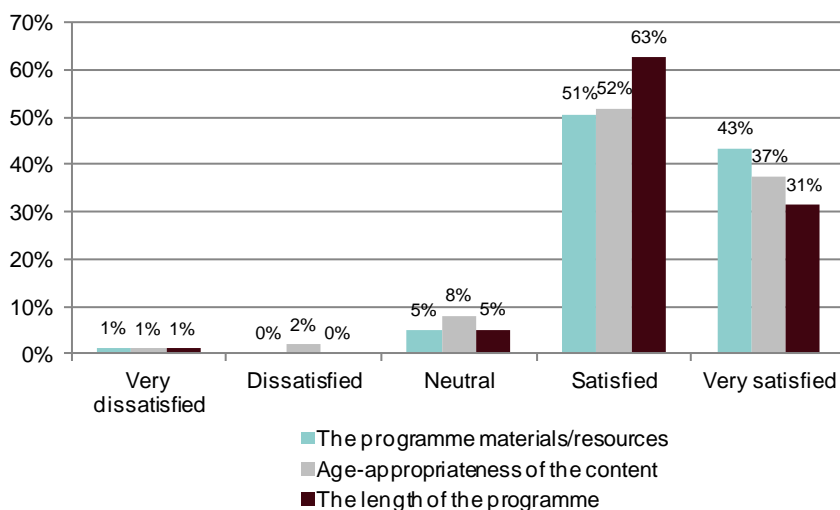
Perceived value of *Be Firewise*

The low rates of delivery nationally indicated by the survey results mean that it is not appropriate to expect to see any substantial or clear evidence of the programmes' outcomes in terms of impact on students' fire safety awareness or behaviour, not least because it was not possible to get the wide sample of schools involved in delivering the programme that would be required to collect this evidence. In lieu of being able to comment on the outcomes of the programmes, this section presents information about the perceived value of the programme for students, based on survey results and the *perceptions* of FRMOs, principals and teachers as drawn from the case study research.

Perceived value of the Year 7 and 8 programme¹⁰

The survey results indicate that schools view the *Be Firewise* Year 7 and 8 programme positively. When asked to rate the programme on a five-point scale from 'very poor' to 'excellent', 94% considered *Be Firewise* a 'good' or 'excellent' fire safety education programme. The overwhelming majority of schools were satisfied or very satisfied with the programme's content, length and associated resources (see Figure 5).

Figure 5: Satisfaction with elements of the *Be Firewise* programme (Year 7 and 8)



Case study research indicates that those with some experience of delivering the Year 7 and 8 programme believe that it is relevant for students and has a strong educative impact on student's knowledge and understanding of fire safety. Teachers and principals consider that the

¹⁰ Due to the small numbers of senior secondary schools delivering the programme, survey results are only reported for the Year 7 and 8 programme.

combination of written, online tasks, the 'shock value' of the media clips and exposure to real life fire-fighters enable students to take the fire safety seriously. Evidence that indicates students have absorbed the key messages as cited by teachers and principals include:

- the type of questions students ask during fire fighter presentations or visits, for example intelligent questions about how to put out different types of fire, or why fires are able to spread so fast
- demonstrating appropriate fire safety conscious behaviour during a 'fire' scenario, for example 'get low, get down, get out' behaviours, commenting about the need to close doors during a fire drill
- recognising inappropriate or risky fire-related behaviour in informal comments and 'chit chat' with friends and peers that is overheard by teachers.

FRMOs' perceptions differ slightly. They tend to distinguish between two groups of students – those who have taken the fire safety messages seriously and those who have not and are simply 'not interested'. FRMOs cite similar behaviour to that noticed by teachers and principals as evidence of the programme having a positive impact on students. They also note that students who have absorbed the fire safety messages provide 'correct' answers and use appropriate terms if 'quizzed' by FRMOs during a school visit. However many FRMOs commented that they receive little or no feedback from teachers about student responses and when probed, appear not have not sought feedback about this topic directly.

Conclusions and recommendations

Improving engagement

Uptake rates for both the *Be Firewise* programmes are low, extremely so in the case of the senior secondary programme. We found that the *Be Firewise* programmes are not proactively or directly promoted to eligible schools, particularly secondary schools.

We also found that there are differences in the decision-making processes schools follow when deciding whether or not to deliver *Be Firewise* programmes and in the weight they place on certain factors as part of that process. FRMOs are conscious of some of these differences but despite this do not consciously or actively tailor the way they engage with different types of schools. They demonstrated understanding that most schools prefer a face to face approach from NZFS staff; primary schools are more aware of the programmes than other school types; schools with positive delivery experiences are more likely to continue to deliver the programme; and that the secondary school curriculum is pressured, leading to low uptake.

Recommendation 1: Improve the way that NZFS staff approach and engage with eligible schools. The study suggests that there are some simple principles that FRMOs could consistently apply to improve the effectiveness of their engagement with schools. These include:

- Making face to face contact with a group of staff within a school early on in the engagement process, possibly as a starting point (as opposed to a letter).
- Using face to face contact to explain and discuss how the *Be Firewise* programmes can be incorporated into existing curriculum areas. Having a clear set of practical examples of use in different school contexts would also be valuable.
- In the case of full primary and intermediate schools, emphasising how the year 7 and 8 programme can be made topical and relevant to students, for example by:
 - providing incident statistics to create a national, regional or local context for programme delivery
 - highlighting seasonal changes in fire risks as part of a health focus (ie summer fire risks of barbeques and winter fire risks associated with home heating)
 - highlighting NZFS role in supporting communities to be safe, the notions of 'giving back' to a community through community volunteering and potential career opportunities with NZFS for young people
 - drawing teacher attention to the interactive nature of some activities eg the development of a fire escape plan, quizzes etc
- In secondary settings, encouraging FRMOs to focus on forming a relationship with key individuals within a school and using face to face contact to explain the practical aspects of

programme delivery (ie time length, support available from NZFS and quality of the resources).

A number of internal factors are hindering FRMOs from effectively promoting the *Be Firewise* programmes to eligible schools. Resource constraints and organisational changes have expanded the scope of FRMOs responsibilities. There is a limit on the number and level of contacts that FRMOs can have with eligible schools in their area. If FRMOs are to use their time efficiently, they need to be guided by clear and reasonable expectations about what they should achieve and how they will be supported to meet these expectations.

Recommendation 2: The Commission should clarify how responsibility and accountability for co-ordination and oversight of *Firewise* promotion and delivery is expected to occur at a regional level. This clarification needs to explain:

- the scope of the FRMO role and the emphasis FRMOs should place on promoting the programmes to schools relative to supporting schools to deliver the programmes
- the level of support that FRMOs and operational staff can provide to one another to promote and deliver the *Firewise* programmes as a whole
- whether there will be a role to support co-ordination of the engagement process.

Recommendation 3: Review the resourcing arrangements and expectations associated with promotion and delivery of the *Be Firewise* programmes.

- Engaging schools is an ongoing task. FRMOs need to be sufficiently resourced to promote and support the delivery of *Firewise* and sufficiently motivated. The number, type and location of schools vary within each region, and some regions are more reliant on volunteer staff than others. It may be appropriate to develop and agree on different regional *Be Firewise* targets that reflect these regional differences as part of performance management processes.
- Given finite resources, the suite of *Firewise* programmes should be reviewed to see where effort and resources might best be directed. Targeting the highest priority age groups rather than spreading resources thinly could result in improved fire safety outcomes overall.

Improving training and professional development

The evaluation findings suggest that detailed knowledge of the *Be Firewise* programmes is not held by all FRMOs and some are new to the educational aspect of the role. The relatively 'high profile' of the Year 1 and 2 programme amongst schools also means that FRMOs can become over-familiar with the Year 1 and 2 programme at the expense of developing a detailed understanding of the *Be Firewise* programmes. To promote the programmes to different schools FRMOs need to demonstrate their understanding of how *Be Firewise* programmes can be integrated into the school curriculum adapted to the particular needs of individual schools.

This builds confidence and trust amongst school staff that the programmes are valuable and easy to use and gives credibility to the NZFS.

Recommendation 4: The Commission needs to provide ongoing, regular training and professional development to FRMOs and fire-fighters to establish a consistent level of knowledge about both programmes. Such support needs to build on the knowledge and skills of FRMOs that have existing experience in the *Firewise* role and have good networks with schools. Improvements to training and professional development could include:

- Drawing on FRMOs collective expertise within current training opportunities (ie having experienced FRMOs attend sessions and running sessions more regularly).
- The use of a ‘buddy’ approach. This would see experienced and less experienced FRMOs being paired together for an interim period time to approach and deliver *Firewise* programmes in a range of different schools.
- Developing overarching guidance material to support FRMOs and fire-fighters in consciously thinking of the *Be Firewise* programmes as part of a single intervention that is tailored and delivered differently to different schools and student groups.
 - This would draw attention to differences the differences between primary, intermediate and secondary school settings that cater for the target age groups. This information would assist staff in tailoring their engagement strategies to schools and could also be a valuable resource to use when explaining the value of the programmes to school staff. A suggested concept is included in Appendix 4.

Improving delivery

Comments about the delivery of the *Be Firewise* programme have been limited to the Year 7 and 8 programme because of the low uptake of secondary programme and associated difficulties obtaining detailed information about delivery of this. We found that with regard to the Year 7 and 8 programme, there are variations in the way teachers use the programme resources but all of these are appropriate and do not contradict or undermine the intended delivery approach. We also found that while some improvements could be made to the shape and form of the Year 7 and 8 programme, the actual content is considered effective in enhancing students’ awareness and knowledge of fire safety and prevention. However, schools and students are making increasing use of online applications or web-based activities and have access to personal device they can use for this purpose. FRMOs, principals and teachers believe that increasing the range of activities that can be undertaken in an interactive online format will significantly enhance the value and appeal of the Year 7 and 8 programme for schools now and in the future.

Recommendation 5: Focus on increasing the range of interactive online tasks that are available in the year 7 and 8 programme. The programme content does not appear to be

ineffective as it currently stands, however low uptake rates means that the programme content remains potentially 'under tested'.

As there are significant opportunities to address the low participation rates by enhancing how the programme is promoted to schools, we recommend the Commission focuses its resources on this enhancing practice in this area and only then look to gather information from a wider range of schools to identify opportunities for improving the programme content and resources.

Appendix 1 The *Be Firewise* programmes

This section briefly describes key elements of the two *Be Firewise* programmes, including the programme logic and key assumptions underpinning it.

Be Firewise for Year 7 and 8

The *Be Firewise* programme for Year 7 and 8 has undergone substantial change since it was first developed in 2000. The original programme resources were developed along the lines of Year 1 and 2 programme and contained the following:

- a resource booklet for teachers
- *Our Firewise Family* booklet for use with students
- *Be Firewise* video for Year 7 and 8 programme
- *Be Firewise* parents' video
- resource for fire-fighters
- two friezes, **Get Down, Get Low, Get Out** and **Stop, Drop, and Roll**
- three A4 photographs of fire
- a smoke alarm.

As part of the initial design of the Year 7 and 8 programme, delivery of the programme was expected to be supported by a visit from the local fire service to strengthen the impact of the messages covered in the teaching activities.

In 2006 the *Be Firewise* programme for Year 7 and 8 was reviewed and the resources were changed significantly (eg workbooks for students were replaced with a CD-Rom) in order to promote uptake of the programme by intermediates. At this point the expectation that the programme delivery would be supported by a visit from a local fire-fighter was also dropped. There were other issues such as length of the original programme that were seen as barriers to participation and these were addressed in the new materials developed.

Be Firewise for senior secondary students

The *Be Firewise* fire safety education programme aimed at senior secondary students contains a video *Party At Our Place* and a Teachers' Guide. The programme is designed to be presented in two separate formats:

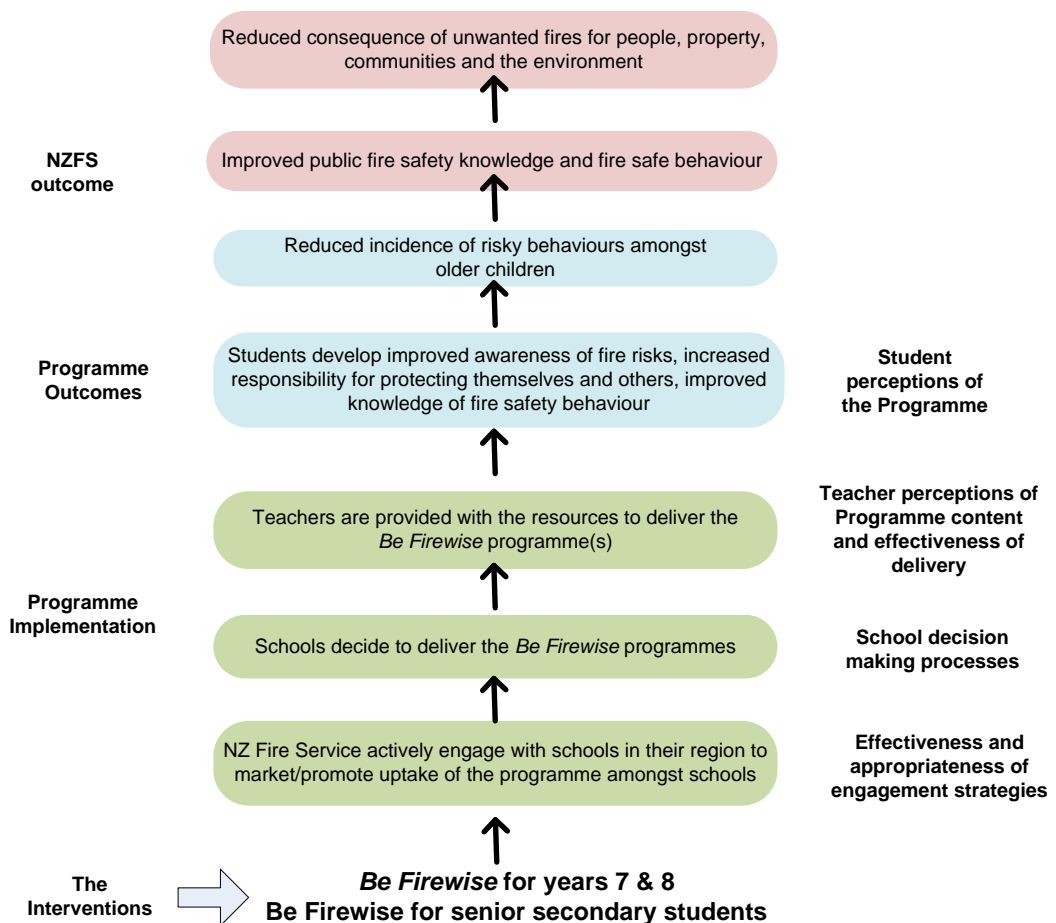
- A one hour (60 minute) self-contained, stand alone programme suitable for showing to all students at school leaver seminars and/or in other programmes that prepare students for academic or working life involving living away from home in flats or hostels. This programme requires minimal preparation by the teacher and programme delivery entails

screening of the video in two parts: a drama followed by a discussion between the actors and two fire-fighters. After screening each part, teachers are instructed to have students working in small groups to discuss what happened in the video, its impact on them, and identify five actions that they will take in the future as a result of seeing the video.

- A longer programme of 6-12 hours with optional activities that can be incorporated into transition or life skills programmes. This format is designed to be used with students who are ready to leave school. It focuses on the fire risk of living in flats and the risks of attending parties where there are large numbers of young people. The unit centres around the *Party At Our Place* video. While the video is the same as the 60 minute format, in this unit the students watch the video more than once while focusing on different aspects of the drama. The unit focus on the skills of independent decision-making, coping with peer pressure, interviewing and communicating information in a variety of formats and media.

Programme logic

The following model describes how both *Be Firewise* programmes are intended to operate:



Effective delivery of the *Be Firewise* programmes is likely to be shaped by various factors, including the initial decision within a school to deliver one or both programmes. The emphasis given to promoting fire safety messages also depends on how, when and who uses the *Be Firewise* resources in the school context (eg teacher or student-directed methods of learning, the level of teachers' previous experience and awareness of *Be Firewise* resources etc).

Schools also determine the level of involvement that the local Fire Service has in supporting and reinforcing the programme messages, particularly in the case of the Year 7 and 8 programme where this is encouraged. Consequently it is important to understand how local Fire Service staff view their own role in supporting both programmes and how they engage with schools to achieve this. Determining the effectiveness of the *Be Firewise* programmes therefore requires an understanding of how the programmes are implemented and how messages are reinforced within the school over time and by local Fire Service staff.

Assumptions underpinning *Firewise*

The two *Be Firewise* programmes are based on a number of assumptions including:

- 1 Schools are aware of *Be Firewise* when they make decisions about what to include in the school curriculum.
- 2 Schools believe that teaching fire safety is important.
- 3 Schools believe that *Be Firewise* is the best way to teach fire safety to the target age groups.
- 4 Schools have the time and resources to deliver *Be Firewise*.
- 5 The *Be Firewise* teaching resources for teachers and fire-fighters are appropriate for 11-12 and 15-17 year olds.
- 6 In the case of the Year 7 and 8 programme, the uptake of fire safety messages may be enhanced by the support of the local fire service staff but this not critical.
- 7 Regional and local NZFS staff have the time, knowledge, experience and desire to engage and support teachers to deliver *Be Firewise*.
- 8 Students will, as a consequence of exposure to *Be Firewise*, improve their knowledge and change their behaviour to be more fire safety conscious.
- 9 Students will, as a consequence of exposure to *Firewise*, influence their peers to be more fire safety conscious.
- 10 An improvement in students' fire safety conscious behaviour will reduce both the incidence of and degree of harm from fires.

Appendix 2 Survey design and approach

Purpose of the survey

The purpose of a national online survey of schools was to gain a broad understanding about the level and nature of engagement by schools with *Be Firewise* programmes. The survey, in addition to gathering quantitative data about which schools do and do not deliver *Be Firewise*, provided a key opportunity to understand:

- the extent to which target schools are aware of the *Be Firewise* programmes
- the extent to which target schools have participated in *Be Firewise*
- the extent to which New Zealand schools have attempted to engage/are not engaged with *Be Firewise* programmes and the motivations/barriers to the engagement
- delivery of any other fire-safety related programmes by the school, particularly those integrated with other education programmes (eg drink driving; car crashes)
- patterns and trends with respect to school engagement
- principals' perception of the value of the programme and their future intention to engage with *Be Firewise*
- the patterns of programme delivery (ie how usual is it for the local fire service to visit schools) across the regions; perceived appropriateness of delivery and suggestions for future improvements.

Questionnaire content

The questionnaire was developed in consultation with the NZFSC and covered the points above. We also tested the content for relevance and ease of understanding with a small number of school staff from our existing networks – two from schools teaching Year 7 and 8 students, and two from schools teaching senior secondary students. The questionnaire was designed to take between 5 and 10 minutes to complete, to reduce respondent burden.

Sample

The questionnaire was sent to a final sample of 1529. The Ministry of Education's Directory of Schools¹¹ was used to identify all schools in New Zealand that teach Year 7 and 8 and/or senior secondary¹² students. In conjunction with the NZFSC, the decision was made to exclude:

- Christchurch City schools (109) – the earthquakes in Christchurch mean that Fire Service activity within schools departs from the usual contact that would have occurred
- Kura Kaupapa Māori (72) – as the materials have never been available in te reo Māori, the Fire Service Commission chose to exclude kura kaupapa Māori
- Special schools (39) and teen parent units (20) were also excluded given their small numbers and unique nature.

After invitations were sent out, a small number of schools contacted us to say that they did not teach students in the year levels specified.

- Two schools listed as Years 7 to 15 were actually Years 9 to 15. They had been randomly assigned to receive the Year 7 and 8 questionnaire. In this case, they were sent the senior secondary questionnaire instead (and changed to the Year 9 to 15 population).
- Nine schools listed as Full Primary schools in the Directory contacted us to say that they did not teach Year 7 and 8 students. These schools were removed from the sample/population.

Table 1 shows the final numbers of each questionnaire sent. In order to reduce respondent burden, those schools teaching both year levels were randomly assigned to one or other of the questionnaires.

Table 1: Final sample by school type

School Type	Final sample		
	Year 7 and 8	Senior secondary	Total
Composite (Year 1-10)	3		3
Composite (Year 1-15)	52	53	105
Full Primary (Year 1-8)	989		989

¹¹ <http://www.educationcounts.govt.nz/directories/list-of-nz-schools>; accessed 18 July 2012, current as at 1 July 2012.

¹² Defined as Year 11 and above, as the *Be Firewise, Party at our Place* programme is aimed at students 16 years and over.

School Type	Final sample		
	Year 7 and 8	Senior secondary	Total
Intermediate (Year 7 and 8)	110		110
Restricted Composite (Year 7-10)	4		4
Secondary (Year 11-15)		2	2
Secondary (Year 7-10)	2		2
Secondary (Year 7-15)	46	48	94
Secondary (Year 9-15)		220	220
Total	1206	323	1529

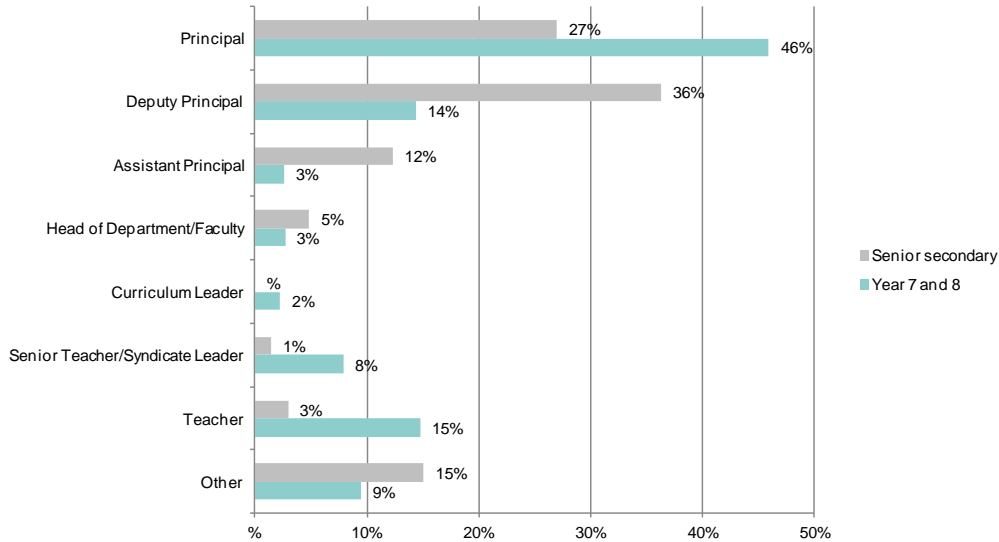
Survey administration

The survey was delivered online and respondents were invited to participate by email. All schools teaching Years 7 and 8 and/or senior secondary students were invited to respond. Invitations were addressed to the principal, who was asked to identify the most appropriate staff member to complete the questionnaire (if not themselves).

Response rate

The overall response rate to the survey was 38%. There was a small difference in response rates to the different questionnaires, but this was not significant: 39% for the Year 7 and 8 questionnaire, and 34% for the senior secondary questionnaire.

Figure 6: Position of survey respondent



We looked at four characteristics to test for differences in the response sample and used these to analyse differences in findings. There were no significant differences in response patterns among any of the subgroups analysed.

The sub-groups were:

Urban/rural location

The ‘urban’ category combines the Statistics New Zealand categories with populations of 1,000 or more. Rural is defined as less than 1,000 population.

School type

While there are a number of technical categories for schools based upon school years taught, we combined these into meaningful groups for analysis:

- **Primary:** Full primary (Year 1-8)
- **Middle:** Intermediate (Year 7 and 8) and Year 7-10 schools
- **Secondary:** Year 7-15, Year 9-15 and Year 11-15 schools
- **Composite:** Year 1-15 and Year 1-10 schools.

School decile

The Ministry of Education calculates a decile rating for each school based on the socio-economic characteristics of households living within the school's immediate vicinity. Decile rankings range from 1 – 10. We have grouped these rankings to define schools as:

- **Low:** 1 – 3
- **Middle:** 4 – 6
- **High:** 7 – 10

Fire region

These are the five existing fire regions that the Fire Service defines.¹³

¹³ <http://www.fire.org.nz/About-Us/All-Regions/Pages/All-Regions.aspx>

Appendix 3 Case study design and implementation

Case selection

The results from the national survey were used to select 15 schools for the case study research. Three schools were selected from each of the five NZFS fire regions. Selection criteria were developed to ensure that the three schools selected in each region included:

- at least one school that had delivered a *Be Firewise* programme (ie the 7 and 8 and/or the senior secondary programme) in the last two years
- at least one school that had not delivered a *Be Firewise* programme
- at least one mid to low decile school (ie 1-7 decile)
- some combination of primary, intermediate and secondary schools
- a combination of urban and rural locations.

Fourteen schools agreed to participate. The final sample of schools participating in the case studies included:

- four primary schools
- three intermediate schools
- seven secondary schools.

Of these, seven schools had delivered one of the two *Firewise* programmes and seven had not delivered either programme.

Table 2: Characteristics of case study schools

NZFS region	School type	Decile	Location	Delivery	Non delivery
1	Intermediate	3	Main urban	✓	
1	Secondary	3	Main urban		✓
1	Secondary	2	Main urban		✓
2	Composite (year 1-13)	10	Main urban	✓	
2	Full primary	9	rural		✓
2	Secondary (year 7-13)	6	Minor urban	✓	

NZFS region	School type	Decile	Location	Delivery	Non delivery
3	Intermediate	5	Secondary urban	✓	
3	Intermediate	2	Secondary urban	✓	
3	Secondary (year ?/)	2	Main urban		✓
4	Area	6	rural		✓
4	Primary	4	rural	✓	
4	Secondary (7-15)	8	rural		✓
5	Secondary	8	Minor urban	✓	
5	Full primary (year 1-8)	7	Minor urban		✓

Case study recruitment

Two FRMOs from each region were invited to participate in the case studies. In recognition of the impact that recent restructuring of the Commission could have on promotion and delivery of the programmes, it was agreed that FRMOs include an experienced individual and one relatively new to the role. Telephone interviews with FRMOs were conducted in the third school term of 2012.

School principals were invited in Term 3 of 2012 to participate in the case studies. Seventeen telephone interviews were conducted with 14 schools in Term 4 of 2012.

Case studies were initially intended to include focus groups with students from a range of participating and non-participating schools. An initial sample of schools was identified, drawing on survey data and suggestions from regional NZFS staff about schools believed or known to have delivered the programme(s) in the past. However, on contact, many of these schools were either unsuitable (ie had not delivered the programme) or were unwilling to participate.

Survey data was used to identify and approach additional schools. However the time involved in recruitment (and term three school holiday period) meant that that the selection of schools could not be confirmed until Term 4 of 2012. Furthermore, while the final sample included seven secondary schools, only two of these had delivered the programme in the last two years. Upon commencing data collection, detailed information about delivery was difficult to obtain. In one school staff changes meant current staff were not able to recollect the delivery process. In the other, the *Be Firewise* programme was delivered as *part of* wider programme of fire safety education that was unique to the NZFS region.

Undertaking the data collection in Term 4 also meant that the majority of schools approached were not prepared to allow students to participate in focus groups due to their involvement in examination preparations for NCEA (in secondary schools) or involvement in other end-of-year activities (eg camps and performances).

Data sources

To understand and validate feedback we sought data from a wide range of sources within each case study. Schools were classified as delivering – indicating that the school had taught either of the *Be Firewise* programmes in the last two years – or non-delivering.

- For each delivering school we interviewed the school principal and the teacher(s) who had taught the *Be Firewise* programme.
- For each non-delivering schools we interviewed the school principal and/or the teacher(s) involved in making decisions about curriculum content in relevant subject areas.

Addressing limitations

To help gather high quality data, and overcome the problem of limited recall, we selected case study schools that had taught *Be Firewise* in the last two years (ie since 2010). To encourage participation in case studies at a very busy point in the school year (ie term four, 2012) schools who had taught one of either *Be Firewise* programmes were also offered a payment of \$100-\$200 in recognition of their time commitment.¹⁴

¹⁴ The amount was dependent on the number of staff required to participate.

Appendix 4 Concept of visual map for *Firewise*

Figure 7: Preliminary concept of a visual map for presenting *Firewise* programmes

