

Report number	Title	Research provider	Year	Summary	Keywords
1	Cost-effective domestic fire sprinkler systems	Building Research Advisory New Zealand (BRANZ)	2000	Outlines a low-cost, multi-purpose sprinkler system that is cost-effective.	Sprinklers. Economic aspects. Fire protection systems. Codes and standards. New Zealand
2	Determining effective fire safety strategies for Māori	Key Research & Marketing Ltd and Te Papa Takaro O Te Arawa	2000	Findings from a research survey to assess the level of awareness of fire safety behaviour and examine how Māori would respond in an emergency.	Māori populations. Fire deaths. Fire behaviours. Fire safety. Surveys. New Zealand
3	A strategy for developing greater community responsibility for fire safety and prevention	CM Research	2000	The survey identified fire safety behaviour, attitudes to fire safety and risk, responsibility for fire safety and fire safety communication.	Fire safety. Human behaviour in fires. Communications.
4	Risk assessment and cost benefit analysis of corridor smoke detectors in rest homes	Caldwell Consulting	2000	A cost benefit analysis of standard response sprinklers compared with fast response sprinklers in a rest home.	Sprinklers. Economic costs. Elderly. Rest homes. Residential care homes. Fire protection systems. New Zealand.
5	Social and economic deprivation and fatal unintentional domestic fire incidents in New Zealand 1988-1998	University of Otago	2000	Literature review on relationships between social and economic circumstances of households, and risk of death or injury in fire events.	Economic costs. Deprivation. Fire statistics. Fire safety. Populations.
6	Where in New Zealand have fatal fires occurred? Descriptive analysis of data 1986-1998	University of Otago	2000	Geographic distribution of fatal structural fire incidents in New Zealand from July 1996 to June 1998.	Fire statistics. Fire fatalities. Structural fires. Populations. Fire risk. New Zealand.

7	Follow-up survey of Auahi Whatatūpato smoke alarm installation project in the Eastern Bay of Plenty	University of Otago	2000	Assessment of the medium term effectiveness of a smoke alarm distribution programme undertaken among residents of eight communities in the Eastern Bay of Plenty.	Smoke alarms. Built environment. Risk reduction. Surveys. Populations. Fire statistics.
8	Improving the fire safety knowledge and practices of vulnerable groups: year one report	New Zealand Council for Education Research	2000	A literature review of factors often involved in fire fatalities.	Psychological effects. Physiological effects. Smoking as a fire cause. Kitchen fires. Smoke alarms. Cigarette lighters. Alcohol. Children. Disabled.
9	Fire safety as an interactive phenomenon	Victoria University of Wellington	2001	Highlights the complexity of interactions when firefighters talk with residents about fire safety in their own homes.	Fire safety programmes. Fire prevention. Fire safety. Public relations.
10	A pilot study to identify strategies to assess vegetation fire hazards	Chilton Saint James School	2001	Pilot study identifying a method for predicting vegetation fire hazards in the Eastern Hutt Valley Hills.	Wildfires. Fire hazards. Vegetation fires. Gorse. Modelling. Ignition. Firefighting tactics.
11	Climate and severe fire seasons - Part 1	National Institute of Water and Atmospheric Research (NIWA)	2001	Summary of climatic patterns contributing to severe fire seasons in New Zealand	Climate. Wildfires. Wildland-urban interface fires. Fire risk forecast. Fire risks.
12	Scoping a social marketing programme for fire safety research in the community	McDermott Miller Ltd	2001	This research analysed the fire service's promotional activities in fire safety, education, and research from a social marketing perspective.	Fire safety. Fire safety promotion. Media communications. Marketing.
13	Unintentional fire-related childhood injuries in Auckland resulting in hospitalisation or death 1989-1998	Bridget Kool	2001	A brief summary of the literature relating to fire injury among children, and an overview of unintentional fire-related	Children. Fire injuries. Fire deaths. Fire statistics.

				injury resulting in death or hospitalisation among children aged 0 -14 years in the Auckland region from 1989 to 1998.	
14	Interventions in Māori house fire mortality rates through innovations in healthy Māori housing solutions	International Research Institute for Māori and Indigenous Education	2001	This research aimed to help reduce the number of potential contributing factors relating to house fires involving Maori and identify a series of interventions.	Māori. Kaupapa Māori. Cultural values. Fire deaths. Fire safety. Fire risk. Behaviour. Attitudes. Economic aspects. Evaluation. Interagency cooperation.
15	Analysis of vehicle fires using the In-Depth Fatal Accident Database	Bailey Partnership Ltd	2001	This research identified the characteristics of fatal road accidents involving fires and compared them with other types of fatal road accidents.	Motor vehicle fires. Motor vehicle accidents. Road accidents. Fire deaths. Fire injuries. Fire statistics.
16	Cooking, alcohol, and unintentional fatal fires in New Zealand homes 1991-1997	University of Otago	2001	This brief report describes features of fatal fires resulting from abandoned cooking sources in Aotearoa New Zealand from 1991 to 1997.	Cooking fires. Kitchen fires. Fire deaths. Fire fatalities. Fire statistics. Fire data. Alcohol-related deaths. Māori.
17	The ecotoxicity of fire-water runoff Part I: review of the literature	Institute of Environmental Science and Research Limited	2001	A literature review of the ecotoxic effects, risks, and management of fire-water runoff.	Firefighting water. Toxic hazards. Water runoff. Firefighting operations. Environmental impact. Pollution.
18	The ecotoxicity of fire-water runoff Part II: analytical results	Institute of Environmental Science and Research Limited	2001	Analytical results of chemical testing of sampled water runoff from four locations of common types of structural or vehicular fires.	Firefighting water. Toxic hazards. Water runoff. Firefighting operations. Environmental impact. Pollution.
19	The ecotoxicity of fire-water runoff Part III: proposed framework for risk management.	Institute of Environmental Science and	2001	Highlights the key elements of a proposed risk management framework to	Environmental aspects. Toxic hazards. Firefighting runoff. Risk management. Pollution.

		Research Limited		assist in the setting of hazard ranking priorities.	
20	A Flammability Guide for Some Common New Zealand Native Tree and Shrub Species	Forest Research (formerly NZFRI)	2001	The report summarises the methodology used to produce the brochure <i>Flammability of Native Plant Species: a guide to reducing fire hazard around your home</i> .	Wildfires. Prescribed burns. Vegetation fires. Trees. Shrubs. Fire breaks. Fire hazards. Fire safety awareness.
21	Fire behaviour as a factor in forest and rural fire suppression	Forest Research (formerly NZFRI)	2001	An overview on the fire behaviour of free-burning fires as it influences fire control operations in New Zealand.	Fire behaviour. Wildfires. Forest fires. Ignition. Rural firefighting. Rural fire management. Fire suppression. Preplanning. Firefighting operations.
22	Spatial prediction of wildfire hazard across New Zealand	Landcare Research	2001	This project developed high-resolution, spatially explicit data layers describing wildfire hazards across New Zealand.	Wildfires. Fire behaviour. Fire hazards. Fire spread. Fuel load. Rural fires. Weather. Climate. Fire weather data.
23	Developing a strategy to nurture, enhance, and expand the Volunteer Fire Brigade	UMR Research Limited	2001	This study developed a profile of volunteers in the New Zealand Fire Service to provide strategic direction to enhance, expand and increase volunteer firefighters.	Volunteer firefighters. Volunteer fire brigades. Strategic planning. Community involvement. Surveys.
24	Prediction of rural fire risk for the Wellington Region	Landcare Research	2002	Investigates the potential for using national-scale climatic information to make spatially explicit predictions of fire in the Wellington Region and North Island of New Zealand.	Climate. Weather. Spatial data. Risk management. Fire risk. Ignition. Modelling. GIS.
25	Vulnerability and the translation of safety knowledge	Victoria University of Wellington	2002	This research draws from interviews with fire service	Fire safety awareness. Fire safety campaigns. At-risk

				employees to identify ways to reach out to at-risk groups about fire safety awareness.	groups. Vulnerable communities. Ethnic groups. Firefighters. Surveys.
26	School fires in New Zealand	New Zealand Institute of Economic Research and Corydon Consultants Ltd	2002	This research provides practical insights into factors that contribute to school fires.	School fires. Children. Fire safety. Arson. Buildings. Risk reduction. Community involvement.
27	Estimating risks from fire following earthquake	Institute of Geological and Nuclear Sciences Ltd	2002	This research aimed to develop practical tools for modelling and visualising the spread of post-earthquake fire.	Earthquakes. Post-earthquake fires. Natural disasters. Climate. Buildings codes. Fire spread. Fire behaviour. Modelling.
28	An economic assessment of industrial fires in New Zealand	Business and Economic Research Ltd (BERL)	2002	This study aimed to assess the economic impact of industrial fires in New Zealand.	Industrial fires. Economic impact. Business continuity. Primary industries. Insurance. Risk assessment.
29	Overview of fire-related mortality data for New Zealand 1991-1997	University of Otago	2001	Describes a methodology for collating fire fatality data from the Fire Incident Reporting System and New Zealand Health Information Service that can be linked with Coroner's files	Fire deaths. Fire injuries. Fire statistics. Fires. Mortalities. Children. Older people. Māori.
30	Fire incidents resulting in deaths of New Zealand children aged under 15 years 1991-1997	University of Otago	2001	The study identifies high risk rates for males, and particularly Māori, aged under 15 years in domestic fire incidents.	Children. Māori. Fire deaths. Fire statistics. Domestic fires.
31	Fire incidents resulting in deaths of New Zealanders aged 15-64 years 1991-1997	University of Otago	2001	The study identifies risk rates for males, and particularly Māori, aged between 15 and 64 years in domestic fire incidents.	Children. Older people. Māori. Alcohol. Fire deaths. Fire statistics. Domestic fires.
32	Fire incidents resulting in deaths of New Zealanders aged 65 and older 1991-1997	University of Otago	2001	This study identified mortality rates for people between the age of 65 and 75 years are consistent	Older people. Māori. Fire deaths. Fire statistics. Domestic fires. Heating appliance fires. Flammable

				with that for younger adult age groups, but rates triple for each decade over the age of 75.	materials. Ignition. Rest home fires.
33	Hospitalisation for non-fatal injury as a result of unintentional domestic fire incidents: New Zealand 1996-2000	University of Otago	2002	The study identified inpatients discharged from a New Zealand hospital with a primary diagnosis of burn injury or smoke inhalation as a result of fire or flame in a private residential property.	Burns. Burn injuries. Smoke inhalation. Fire injuries. Smoke inhalation. Fire data. Domestic fires. Hospitals. Fire statistics.
34	The New Zealand volunteer fire service in 3 rural communities in Northland	University of Auckland	2002	Key findings from a study looking at the role of rural volunteer fire parties in three isolated rural communities between Whangarei and Russell.	Recruitment. Retention. Community involvement. Volunteer firefighters. Volunteers. Rural firefighting. Māori. Cultural values. Firefighting operations. Firefighting equipment. Fire service organisation.
35	Costs and benefits of regulating fire safety performance of upholstered furniture in New Zealand	Building Research Advisory New Zealand (BRANZ) and the University of Otago	2003	Findings from an assessment of likely costs and benefits associated with introducing new regulations to improve the fire safety of upholstered furniture.	Upholstered furniture. Flammable materials. Economic aspects. Fire safety. Domestic homes. Laws and regulations. Codes and standards. Building codes.
36	Recruitment and retention of women volunteers within the Fire Service	UMR Research Limited	2003	A profile of female volunteer firefighters was undertaken to provide direction for strategies in the recruitment and retention of women in the fire service.	Women. Recruitment. Retention. Attitudes. Behaviour. Motivation. Volunteer firefighters. Volunteer fire brigades.
37	Fire safety in small tourist accommodation businesses: working towards developing best practice models	University of Auckland	2003	Highlights fire safety issues and other factors that impact small business	Compliance. Laws and regulations. Building codes. Fire safety. Fire safety

				owners' compliance with fire safety regulations.	education. Local authorities.
38	Fire following earthquake: identifying key issues for New Zealand	Wellington Lifelines Group	2002	A comprehensive framework was developed to assist in multi-agency coordination of research on fire following an earthquake in New Zealand.	Earthquakes. Natural hazards. Risk assessment. Risk management. GIS. Interagency cooperation. Codes and standards. Strategic planning.
39	A fire danger climatology for New Zealand	Forest Research (formerly NZ FRI)	2003	This study extended and improved the climatology analysis undertaken by Pearce (1996).	Climate. Fire danger rating. Weather data. Statistics. Wildfires. Forest fires. Vegetation fires. GIS.
40	Impact on life safety of the Type 5 alarm	Connell Mott MacDonald	2003	A quantitative methodology was developed to measure the increased risk of Type 5 alarms in multi-unit residential buildings.	Building codes. Fire protection systems. Residential buildings. Evacuation planning. Risk assessment.
41	Peer review: <i>"Costs and benefits of regulating fire safety performance of upholstered furniture in New Zealand"</i>	Business and Economic Research Ltd (BERL)	2003	Peer review of this report that includes the decision criteria used, and the key estimates and parameters.	Evaluation. Upholstered furniture. Economic aspects. Cost of fires. Fire safety. Residential buildings. Buildings. Decision making.
42	A framework for social research funded through the New Zealand Fire Service research fund	The Centre for Research, Evaluation and Social Assessment (CRESA)	2003	Reviews the Contestable Research Fund of the New Zealand Fire Service after five years of operation.	Contestable research. Reviews. Evaluation. Strategic planning. Social science.
43	Assessing and selecting high performing Fire Service recruits for the future	Cerno Limited	2003	Reviews the current recruitment and selection of process for firefighter recruits in the New Zealand Fire Service.	Recruitment. Evaluation. Reviews. Competency-based assessment. Psychological effects. Firefighters.
44	Modelling fire-spread in and around urban centres	Institute of Geological and Nuclear Sciences Ltd	2003	Findings from a fire data modelling simulation to determine the consequence of post-	Fire spread. GIS. Modelling. Simulations. Flammable materials. Buildings. Weather. Rural fires.

				earthquake fire in Wellington, New Zealand.	Earthquakes. Natural hazards.
45	Improving the fire performance of polystyrene insulated panel in New Zealand	Building Research Advisory New Zealand (BRANZ)	2004	Findings from the final of a series of reports on improving the fire performance of polystyrene insulated panels in New Zealand	Polystyrene. Insulation. Flammable materials. Buildings materials. Fire spread. Fire tests. Fire engineering.
46	Adolescent fire setting: a NZ case-controlled study of risk factors for adolescent fire setting	University of Auckland	2004	This study explores the personality patterns, coping responses, behaviour problems and family environments of adolescent males involved in firesetting.	Adolescent firesetting. Arson. Juvenile arson. Behaviour. Motivation. Arson. Psychological effects. Psychology.
47	Human behaviour contributing to unintentional residential fire deaths 1997-2003	Heimdall Consulting Ltd	2005	Highlights behavioural characteristics of victim groups, in unintentional residential fire deaths.	Human behaviour in fires. Behaviour. Attitudes. Ignition. Fire deaths. Fire statistics. Fire dynamics. Fire spread. Alcohol. Fire safety.
48	Guidelines for identifying and preventing fire risks to heritage buildings and collections	Opus Consulting Ltd	2004	Cultural heritage management and fire engineering disciplines were used to develop good fire safety practices into workable, cost-effective tools to protect heritage buildings and collections.	Heritage buildings. Cultural heritage. Museums. Historic places. Fire safety. Fire protection systems. Risk management. Economic aspects. Fire engineering.
49	Optimal mapping and interpretation of fire weather information	National Institute of Water and Atmospheric Research (NIWA)	2005	This research aimed to identify an optimal mapping approach of fire weather data so that fire risk management can be more efficient and effective.	Weather. Weather data. Fire risk assessment. Risk management. Climate. GIS.



50	Impact of climate change on long-term fire danger	National Institute of Water and Atmospheric Research (NIWA) and Forest Research (formerly NZ FRI)	2005	Findings of likely changes in fire danger under scenarios of climate change for New Zealand.	Climate. Weather. Wildfires. Forest fires. Rural fires. Fire danger rating. Fire weather.
51	Developing indicators of household risk and targeting interventions	Centre for Research, Evaluation and Social Assessment (CRESA)	2005	Highlights indicators of fire risk at a household level, and insights into recognition and response by householders to these risks.	Fire safety. Fire safety. education. Fire risk. Human behaviour in fires.
52	Fire safety regulation for non-residential buildings	NZIER	2005	Fire levy. Building laws. Laws and regulations. Fire risk. Codes and standards. Insurance. Fire safety.	Cost-benefit. Levy. Insurance. Buildings. Fire safety. Economic aspects.
53	The cost of managing the risk of fire in New Zealand	Business and Economic Research Ltd (BERL)	2005	Estimate of the total cost of fires in New Zealand. Includes the costs of fire risk management and consequential recovery costs of an actual fire.	Economic aspects. Cost of fires. Fire risk management.
54	Analysis of the revised purposes of the Building Act 2004	Building Research Advisory New Zealand (BRANZ)	2005	Assesses the changes affecting fire safety in buildings under the Building Act 2004.	Fire design. Sustainability. Building laws. Fire safety. Buildings.
55	Spatial prediction of wildfire hazard across New Zealand: a significant upgrade	Landcare Research	2005	New high-resolution weather data grids were developed that highlighted spatial variation in wildfire danger across New Zealand.	Wildfires. Spatial data. Modelling. Wildfire hazards. Fire weather. Fuel loads. Fire spread.
56	Code of practice for firefighting water supplies and indicative cost benefit analysis	NZIER	2004	An international comparative review against the New Zealand Fire Service code of practice for firefighting water supplies	Firefighter water. Codes and standards. International comparisons. Economic aspects. Surveys.

57	Handbook SNZ HB 4525 Fire Risk Management	Risk Management Ltd	2006	An overview of generic fire risk management processes with guidance for the user on how to apply this process in relation to fire-related risks.	Fire risk. Risk management. Codes and standards.
58	Fire loss reduction in industrial buildings: risk cost benefit study	Building Research Advisory New Zealand (BRANZ)	2006	This study demonstrates a methodology to estimate the cost of fire in industrial buildings in New Zealand.	Cost of fires. Economic aspects.
59	The cost factors and profile of false and unwanted fire alarm activations in New Zealand	Auckland UniServices Ltd (wholly owned company of the University of Auckland)	2006	Findings from an analysis of unwanted fire alarm data to estimate the economic and social costs.	Unwanted fire alarms. Fire alarm systems. Fire protection systems. Economic aspects. Social costs. Buildings.
60	Effective fire safety strategies for Pacific people	Niu Development Inc	2006	Identifies the impact of social trends on Pacific families, households, and communities. Highlights preferred engagement methods of promotional information.	Pacific peoples. Fire safety. Surveys. Fire risk. Behaviours. Risk management.
61	Fire Knowledge Research Qualitative Research Report	TNS	2006	This research aims to understand New Zealanders' attitudes and behaviours to fire safety and risk. The findings were used to inform an update of the NZFS Annual Fire Knowledge Survey.	Behaviours. Attitudes. Fire safety. Survey. Risk management.
62	International approaches to reducing deliberately lit fires: statistical data and fire investigations	Auckland UniServices Ltd (wholly owned company of the University of Auckland)	2006	This report reviews the fire investigation and reporting processes for deliberately lit fires in New Zealand and other selected overseas countries.	Firesetting. Arson. Fire statistics. International comparisons. Fire cause. Economic aspects.

63	International approaches to reducing deliberately lit fires: prevention programmes	Auckland UniServices Ltd (wholly owned company of the University of Auckland)	2006	This report explores the prevention programmes for people who deliberately lit fires in New Zealand and other selected countries.	Arson. Arson prevention programmes. Fire prevention. Fire safety programmes. Fire safety education.
64	Medium range forecasts of fire weather indices	Met Service	2005	This report describes the use of fire weather and fire danger to assess current conditions and anticipate future fire risk.	Fire weather. Wildfires. Fire weather forecasts. Fire danger rating. Risk management. Computer modelling.
65	Work-related fatal and non-fatal fire injuries in New Zealand 1985-1999	Bridget Kool (New Zealand Environmental and Occupational Health Research Centre)	2001	This report identifies the number of New Zealand injuries and deaths caused by work-related fires.	Fire statistics. Fire injuries. Fire deaths. Fire investigations. Work-related fatalities.
66	Managing non-operational environmental impacts of fire service activity	MWH New Zealand Ltd	2007	Identifies international best practices for managing the environmental impacts of non-emergency fire and emergency service activities at offices and fire stations.	Environmental effects. Conservation. Costs of fire. Fire service organisation.
67	Compressed air foam	Institute of Environmental Science and Research Limited	1999	Findings from an analysis of compressed air foam (CAF) concentrate to determine its chemical nature and effect on fire investigations involving flammable liquid accelerants.	CAFs. Chemical effects. Flammable liquids. Fire investigations.
68	NZFS research among people with physical and sensory disabilities	UMR Research Limited	2007	This research explores fire safety awareness among people with physical and sensory disabilities.	Disabled. Fire safety. Fire safety education. Surveys. New Zealand Fire Service.
69	Impact of Fire Service activity on the environment	Landcare Research	2007	This research aims to understand the potential impact of firefighting operations on the environment.	Environmental effects. Firefighting operations. Firefighting tactics. Pollution.

70	Operational 10-day forecasts of fire weather indices	Met Service	2007	Findings from a 10-day forecast of fire weather indices using the MetConnect web application.	Forecasts. Fire weather. Climate. Wildfires. Forest fires. Forests. Weather software.
71	The risks, perceptions, and experiences of fire among older people	Heimdall Consulting Ltd	2007	This research addresses the reasons for the increased residential fire risk of older people.	Older people. Fire statistics. Residential homes. Fire risks. Risk management. Fire deaths. Fire injuries. Fire safety.
72	Impact of climate variability on fire danger	National Institute of Water and Atmospheric Research (NIWA)	2007	The aim of this research was to identify whether there is evidence of differences in fire dangers using selected weather data systems.	Climate. Weather. Fire danger. Vegetation. Wildfires. Urban-rural interface. Fire management.
73	Climate and severe fire seasons: part II - New Zealand fire regions	National Institute of Water and Atmospheric Research (NIWA)	2002	Summary of climatic patterns giving rise to severe fire seasons at selected location around New Zealand.	Climate. Weather. Fire danger. Fire data. Fire risk. Fire weather.
74	Fire Technology transfer note	Forest Research (formerly NZ FRI)	2000	New serial title published with the support of the New Zealand Fire Service Commission's Contestable Research Fund.	Case studies. Serials. Publications. Research. Wildfires. Climate.
75	Climate and severe fire seasons: part III. Climate patterns and high fire severity in Northland and canterbury.	National Institute of Water and Atmospheric Research (NIWA)	2002	This report forms part of a multi-year investigation of climatic and weather factors that give rise to high daily, monthly, and seasonal fire risk.	Climate. Fire weather. Forecasts. Fire risk forecasting. Risk management. National Rural Fire Authority.
76	Climate and severe fire seasons: part IV. Daily weather sequences and high fire severity in Auckland West/Waikato, North canterbury, McKenzie Basin, and Central Otago/Inland Southland.	National Institute of Water and Atmospheric Research (NIWA)	2004	This report forms part of a multi-year investigation of climatic and weather factors that give rise to high daily, monthly, and seasonal fire risk.	Climate. Fire weather. Forecasts. Fire risk forecasting. Risk management. National Rural Fire Authority.

77	An updated validation of seasonal fire weather climate outlooks	National Institute of Water and Atmospheric Research (NIWA)	2004	Validations of fire-climate outlooks updated for the period 199 to March 2004.	Climate. Fire weather. Forecasts. Fire risk forecasting. Risk management. National Rural Fire Authority.
78	House Foundations and earthquakes	Victoria University of Wellington	2007	Findings from a sample study of dwelling's foundations in Wellington against NZS standard 3604:1999 'Light timber framed construction'.	Timber buildings. Codes and standards. Construction. Structural elements. Earthquakes. Economic costs. Fire engineering.
79	Value of statistical life for fire regulatory impact statements	Business and Economic Research Ltd (BERL)	2007	Explains the 'Value of a Statistical Life (VOSL)' concept and its methodology.	Cost of fire. Fire statistics. Statistics.
80	Implementation of urban fire spread model as NZFS tools	Victoria University of Wellington and GNS Science	2008	A dynamic urban fire spread model has been extended to include earthquake damage on building flammability.	Earthquakes. Fire spread. Fire dynamics. Buildings. Building performance. Modelling. Fire engineering.
81	Evaluation of the Firewise programme for year one and two students	MartinJenkins (Martin, Jenkins & Associates Ltd)	2008	This evaluation identified the programme's effectiveness in raising children's fire safety awareness.	Children. Fire safety education. Fire safety. Evaluation.
82	Evaluation of home sprinkler systems	Building Research Advisory New Zealand (BRANZ)	2008	This report investigates the cost effectiveness of home sprinkler systems.	Sprinklers. Cost of fires. Economic aspects. Environmental impact. Sustainability. Fire protection systems.
83	Prediction of fire weather and fire danger	National Institute of Water and Atmospheric Research (NIWA)	2007	This research investigated methods for predicting severe fire weather.	Climate. Weather. Forecasts. Vegetation. Wildfires. Fire behavior. Fire risk. Risk management. Modelling.
84	Training for rural firefighters: motivators and impediments	Corydon Consultants Ltd	2008	This research investigated factors that motivate rural firefighters and influence their attitudes towards	Firefighter training. Motivation. Attitudes. Rural firefighters. Volunteer firefighters. Education.

				training.	
85	Evaluation of the New Zealand Fire Service Commission programmes, promotions, and research for Māori	Massey University (Te Ropu Whariki Research Group)	2009	An evaluation of the Commission's research and current educational and promotional activity in relation to Māori.	Māori. Fire safety education. Fire safety programmes. Marae. Kōhanga Reo. Kura Kaupapa. Children. Evaluation. Fire statistics.
86	Developing a composite performance measure for the New Zealand Fire Service	BERL	2008	Explores the key elements of a new performance measures for fire service activities to provide an indication of the capability and readiness of the New Zealand Fire Service.	Performance indicators. Firefighting. Firefighters. Fire service organisation.
87	Kitchen fire and advertising campaign research	UMR Research Limited	2008	Evaluated the effectiveness of New Zealand Fire Service kitchen fire campaigns.	Kitchen fires. Fire safety campaigns. Fire safety. Surveys. Attitudes. Behaviour. Public Relations.
88	A review of existing fire safety in homes	CRESA	2009	Estimated the prevalence and characteristics of risk factors across a range of dwellings and household types.	Fire safety. Risk assessment. Survey. Buildings.
89	Effectiveness of fire safety systems for use in quantitative risk assessments	Marsh and McLennan	2008	Examined the system effectiveness for sprinkler systems, alarm systems and stairwell pressurisation systems in multi-storey commercial and residential buildings.	Sprinklers. Fire protection systems. Reviews. Buildings. Risk assessment. Design. Fire engineering.
90	Sustainability and carbon footprint reduction	PriceWaterhouseCoopers	2009	Findings and recommendations on greenhouse gas emissions arising from non-operational Fire Service activities	Greenhouse gas emissions. Carbon footprint. Climate.

91	The cost of repair to fire damaged buildings	Building Research Advisory New Zealand (BRANZ)	2009	This research investigated the real costs of recovery following a fire, the criteria used by insurance assessors to write-off a partially damaged building, with the aim of developing a more realistic measure of response effectiveness	Insurance. Recovery costs. Economic aspects. Buildings. Costs of fire. Fire data. New Zealand.
92	Measurement of rural fire fighter physiological workload	SCION	2008	This research determined the physiological workload of some rural firefighting tasks under New Zealand operational conditions.	Firefighting tactics. Psychological effects. Behaviour. Decision-making. Rural firefighting. Rural firefighters.
93	UFBA event evaluation: benchmarking their impact and identifying opportunities to improve	Synovate Ltd	2009	Measured the effectiveness of the Challenge series at UFBA events	Volunteer firefighters. Volunteer fire brigades. Unions and associations. Conferences. Drills and exercises.
94	UFBA conference evaluation: a benchmark of perceived benefits and an exploration of how to improve future conferences	Synovate Ltd	2009	Shares findings from an evaluation of the UFBA conference and its effectiveness and benefits for volunteer firefighters and brigades.	Volunteer firefighters. Volunteer fire brigades. Conferences.
95	The application of data mining and statistical techniques to identify patterns and changes in fire events	University of Auckland	2009	This study explores the extent to which data mining and statistical techniques might assist in detecting threshold and pattern changes in spatio-temporal fire data.	Fire data. Fire statistics. Climate. Arson. Modelling.
96	Validation of the firefighter recruitment and selection programme	Centre for Organisational Research	2009	This study measured the effectiveness of the competency-based recruitment selection programme for trainee firefighters adopted in	Recruitment. Firefighters. Competency-based selection. Job performance. Psychological tests.

				2003.	
97	Sparking up an old flame: a process evaluation of the Fire Awareness and Intervention Programme (FAIP) in New Zealand	University of Auckland	2008	A process evaluation of New Zealand Fire Awareness and Intervention Programme (FAIP).	Arson. Arson programmes. Juvenile arsonists. Children. Fire safety education. Evaluation. New Zealand.
98	An outcome evaluation of New Zealand Fire Service Fire Awareness and Intervention Programme	University of Auckland	2009	An assessment of post intervention arson recidivism rates and other offending behaviours of juveniles and young people referred to the New Zealand Fire Awareness and Intervention Programme (FAIP).	Arson. Arson programmes. Juvenile arsonists. Children. Fire safety education. Evaluation. New Zealand.
99	The economic cost of wildfires	BERL	2009	This research captures the immediate effects of wildfires in New Zealand as well as the medium and long-term economic costs.	Wildfires. Economic aspects. Fire suppression. Fire prevention. Fire costs. Rural firefighting. New Zealand.
100	Describing the value of the contribution from the Volunteer Fire Brigade	PriceWaterhouseCoopers	2009	This paper describes the economic and social value of volunteer fire brigades in small remote communities in New Zealand.	Volunteer firefighters. Volunteer fire brigades. Economic aspects. Community involvement. Social cohesion. New Zealand.
101	A strategic review of the New Zealand Fire Service's incident data system	MartinJenkins (Martin, Jenkins & Associates Ltd)	2009	The review has been undertaken to help the Fire Service improve the quality and accuracy of emergency incident reporting.	Incident reporting. Data analytics. Fire incidents. Fire statistics.
102	Understanding the New Zealand Fire Service's contribution to non-fire outcomes	MartinJenkins (Martin, Jenkins & Associates Ltd)	2010	A conceptual framework was developed to evaluate the value and impact of the fire service's contribution to non-fire outcomes.	Economic aspects.



103	Residential kitchen local fire protection - cost effectiveness analysis	Building Research Advisory New Zealand (BRANZ)	2010	Summarises an approach to evaluate the cost effectiveness of potential systems for use in the suppression of local kitchen fires.	Kitchen fires. Economic impact. Sprinklers. Fire suppression. Fire protection systems.
104	Assessing the impact of vegetation and house fires on greenhouse gas emissions	SCION & Building Research Advisory New Zealand (BRANZ)	2010	This study assesses the impact of greenhouse gas (GHG) emissions associated with vegetation fires and house fires.	Greenhouse emissions. Vegetation fires. House fires. Wildfires. Climate.
105	New Zealand fire behaviour toolkit: user guide and technical report	SCION	2008	A user-friendly toolkit that incorporates information on fuels and fire behaviour in the New Zealand fire environment.	Fire behaviour. Forecasting. Incident planning. Wildfires
106	What impact has the change in building materials and design in housing had on the cost damage of fires	Building Research Advisory New Zealand (BRANZ)	2010	This report examines the house design factors affecting fire damage suffered by detached houses in fires.	Building fires. Cause of fire. Structural elements. Design. Building materials. Fire risk. Flammable materials.
107	Metadata analysis of the NZFS Commission Contestable Research Fund	BERL	2010	A review of the New Zealand Fire Service Commission contestable research fund between 1998 and 2010.	Economic aspects. Strategic objectives. Evaluation. Fire service management. Fire safety. Fire prevention.
108	Rural fire fighter exposure to fireground gases with relevance to physiological workload and fire suppression productivity	SCION	2010	This research project aimed to determine the physiological workload of firefighting tasks under New Zealand operational conditions.	Physiological effects. Carbon monoxide. Firefighters. Firefighting operations. Occupational health. Wildfires. Rural firefighting.
109	The impact of changes in New Zealand's demographic profile on fire outcomes	BERL	2010	Highlights findings from a project quantifying the link between improved fire outcomes and demographic changes, with	Demographics. case studies. Urban-rural interface. Fire safety. Risk management. Attitudes. Human behaviour in fires.

				a focus on urbanization.	
110	Applying the conversion model to changing at risk groups attitudes towards fire safety	Research International	2010	Modelling phase. Findings from a project quantifying the link between improved fire outcomes and demographic changes, with a focus on urbanization.	Modelling. Demographics. case studies. Urban-rural interface. Fire safety. Risk management. Attitudes. Human behaviour in fires.
111	Sprinklers for community buildings and places of historical interest	BRANZ	2011	Findings from an investigation that explored the design of sprinkler systems for community buildings such as marae, community halls and historic places.	Sprinklers. Marae. Fire protection systems. Fire engineering. Design. Codes and standards.
112	Alcohol and fire: a strategic review	BERL	2011	Review of the New Zealand Fire Service strategies to minimise risk of fire associated with alcohol consumption.	Alcohol-related fires. Social conditions. Risk management. Human behaviour in fires. Decision-making. Fire safety.
113	A toolbox for building resilience: engaging with rural communities about fire safety		2011	Highlights a suite of tools including practical and useful approaches to use engaging with rural communities about fire safety.	Resilience. Fire safety. Fire safety programmes. Rural fires. Wildfires. Public relations. Community involvement.
114	Can vegetation flammability and wildfire hazard indices predict fire extent?	Manaaki Whenua Landcare Research	2011	A statistical modelling approach was used to determine if vegetation flammability and wildfire indices can prediction fire extent.	Wildfires. Modelling. Vegetation fires. Flammable materials. Fire hazards.
115	Fire design for aging residential occupancies	BRANZ	2011	This research identified fire safety design features for residential occupancies aimed at older adults.	Older people. Residential homes. Fire design. Fire engineering. Means of escape. Evacuation. Fire safety.

116	Fire climate severity across New Zealand	SCION	2011	This research study provided an improved update of fire climate severity across New Zealand.	Climate. Weather. Wildfires. Fire hazards.
117	Project Re-Kindled	Research International	2011	This research provided a prioritised list of fire safety messages that motivates behavioural change in at-risk communities.	Motivation. Human behaviour in fires. Attitudes. Fire safety. Fire safety education.
118	Effectiveness of digital media and social networking for reaching at-risk groups	UMR Research Limited	2011	This research aims to quantify the use of social networking and digital media among at-risk groups.	Social media. Fire safety. Fire safety education. Websites. Mobile phones. Marketing.
119	Changes in community self-reliance and implications for fire safety messages and emergency response	McDermott Miller Ltd	2011	This research highlights insights for refining New Zealand Fire Service fire safety activities to increase fire efficacy in the community.	Fire safety education. Fire safety. Emergency response. Behaviour. Attitudes. Community involvement.
119a	Technical report: Changes in community self-reliance and implications for fire safety messages and emergency response	McDermott Miller Ltd	2011	Technical companion to the main report (#119 'Changes in community self-reliance and implications for fire safety messages and emergency response').	Fire safety education. Fire safety. Emergency response. Behaviour. Attitudes. Community involvement.
120	Te ahi kaa: keeping our Marae safe from fire	Te Iwi o Ngāti Tukorehe Trust	2011	This research explores the challenges faced by one iwi to develop a fire safe culture in a rural marae environment.	Marae. Māori. Fire protection systems. Sprinklers. Smoke alarms. evacuation planning. Fire safety. Rural fires. Community involvement.
121	Impact of emerging social change and technological developments on fire service operations	McDermott Miller Ltd	2012	Evaluates the social changes of most significance to fire risk in NZ communities.	Fire risk. resource allocation. Fire safety
124	Fire system effectiveness in major buildings	Marsh Limited	2012	This study focused on major buildings and considered active and passive systems and their interaction.	Buildings. Fire protection systems. Fire engineering. Fire safety.

125	Developing a methodology for establishing a stronger line of sight between expenditure and outcomes	MartinJenkins (Martin, Jenkins & Associates Ltd)	2011	This report proposes a performance monitoring framework to provide a stronger line of sight between expenditures on fire safety education programmes and their outcomes.	Economic aspects. Investment. Fire education programmes. Performance monitoring. Fire safety.
126	The economic cost of fire in non-residential buildings	BERL	2012	This project determines the economic costs of fires in non-residential buildings, between 2007 and 2011.	Economic aspects. Non-residential buildings. International comparisons. Fire levy. Insurance. Fire protection systems. New Zealand.
127	Quantifying the change in high wind country fire hazard from wilding trees	SCION	2013	This research aimed to define the geographical distribution of wilding trees in NZ high country and describe the fire hazards with wildings.	Forests. Fire behaviour. Fire hazards. Risk management. Land management. Urban-rural interface fires. Firefighting tactics.
128	Fire safety features in housing	Building Research Advisory New Zealand (BRANZ)	2013	This report examines trends in fire safety measures and hazards in the housing stock in recent years, based on the BRANZ house condition surveys of 1999, 2004 and 2010.	Buildings. Fire hazards. Flammable materials. Ignition. Fire safety. Smoke detectors. Human behaviour in fires. Fire statistics.
129	Evaluation of New Zealand Fire Service programmes targeted at years 7 & 8 and secondary schools	MartinJenkins (Martin, Jenkins & Associates Ltd)	2013	An evaluation of two 'Be Firewise' programmes aimed at Year 7 and 8 students, and Years 11-13.	Children. Adolescents. Fire safety programmes. Fire behaviour. Fire safety promotion. Fire risk reduction.
130	Development of a micro-simulation statistical model for household fire risk identification	McDermott Miller Ltd	2016	This research explores and test the potential for micro-simulation as a method for improving household fire risk spatial modelling and forecasting.	Simulation. Spatial modelling. Forecasting. Fire risk modelling. Fire statistics. Risk reduction.

131	Delivery mechanisms for hard to reach groups	McDermott Miller Ltd	2013	The research results show hard-to-reach groups are accessible in sufficient numbers to generate statistically robust results irrespective of survey delivery mode used.	Children, Ethnic peoples. Rural communities. Older people. Special needs people. Fire safety programmes.
132	Get Out! Stay Out! Evaluation	SHORE and Whariki Research Centre	2014	Evaluation of the Get Out! Stay Out fire safety education for school's programme.	Children. Fire safety education. Fire safety. Evaluation..
133	Minimum Fitness Recommendations for Rural Fire Personnel	SCION	2014	This research identified the level of acceptance and application of health and fitness programmes and standards developed by NRFA.	Firefighters. Firefighter health, Rural firefighters. Drills and exercises. Health and safety programmes.
134	Describing wildfire prone areas in the NZ context	SCION	2014	This research developed methods of mapping risk of wildfire in rural-urban areas where flammable vegetation fuels intersect with people and property.	Wildfires. Urban-rural interface fires. Vegetation fires. Modelling.
135	Communicating Fire Safety Messages to New Migrants: Research Report	Julie Warren and Associates	2014	Communicating fire safety messages to refugees and new migrants. Includes guidelines for communicating fire safety messages.	Migrants. Refugees. Ethnic people. Fire safety education. Communications
136	Attitudes to fire safety in families with newborn babies	Litmus Limited	2014	This research explored whether the arrival of a new baby acts as a trigger to support desired behavioural change amongst vulnerable households.	Attitudes. Behaviours. Human behaviour in fires. Newborns. Babies. Fire safety education. Fire safety.

137	Risk factors and offending behaviours of young fire setters	Auckland UniServices Ltd (wholly owned company of the University of Auckland)	2013	The study reviews longitudinal data on child firesetters who were referred to the New Zealand Fire Service Fire Awareness and Intervention Programme (FAIP).	Juvenile arsonists. Adolescents. Children. Firesetting. Behaviour. Arson. Psychological effects. Mental health.
138	What motivates people in small rural communities to become volunteer rural firefighters?	Heathrose Research Limited	2013	Motivating, recruiting, and retaining volunteer firefighters in rural communities in New Zealand.	Rural firefighters. Volunteer firefighters. Recruitment. Retention. Case studies. Literature review. Surveys
139	Exploring Digital Approaches for Improving Safety Behaviour in Older People	Litmus Limited	2013	Explores social marketing approaches using digital channels to improve the safety behaviours of older people.	Older people. social media. Marketing. Behaviour. Human behaviour in fires. Attitudes. Fire safety
140	The value of fire stations and the management of relocations from a community perspective	Kaitiaki Research and Evaluation	2014	A community engagement research study was used to understand community concerns arising from past station relocations.	Decision making. Fire stations. Community involvement. Response times. Firefighters. Volunteer firefighters. Public relations
141	Safe or trapped?	Litmus Limited	2015	Older people's knowledge, attitudes, and behaviour towards home security and the fire evacuation risks they impose.	Older people. Attitudes. Human behaviour in fires. Evacuation. Security vs Egress
142	Diversity in the community versus diversity in the NZFS	Allen and Clarke	2015	Explores differences between operational and volunteer firefighters and whether it reflects the demographic diversity of New Zealand.	Diversity. Firefighters. Volunteer firefighters. Recruitment.
143	Scenario Tool for Allocating Resources (STAR)	Navigatus Consulting	2015	This tool was used to help Rural Fire Authority to make informed and	Resource allocation. Firefighting equipment. Decision making. Wildfires.

				strategic decisions on the allocation of firefighting equipment.	Rural fires. Response times.
144	The prevalence and fire safety implications of Early Childhood Centres in multi-story buildings	Branz	2015	The report was conducted as the NZ Fire Service was interested in the fire safety regulations of Early Childhood Centres.	Children. Fire safety. Education centres. Laws and regulations. Codes and standards. Fire drills. Evacuation.
145	Home Fire Safety Checks Evaluation Phase 2	EvaluationConsult	2015	Update of the data baseline identified in Phase 1 report. Explored the lessons identified in Phase 1 on delivery method and best practice partnership models.	Evaluation. Fire safety programme. Customer satisfaction. Fire safety. Firefighter training. New Zealand.
146	Evaluating effective methods of engaging school-leavers in adopting fire safety messages	Auckland UniServices Ltd	2015	Highlights survey results of secondary and university students who were asked about the best ways to engage young adults in safe fire behaviour.	Young adults. Attitudes. Feedback. Fire safety programmes. Human behaviour in fires. New Zealand.
147	Home Fire Safety Checks Evaluation Phase 1	EvaluationConsult	2014	This evaluation examined the effectiveness and impact of the Home Safety Check programme which engaged people in their own homes.	Evaluation. Fire safety programme. Customer satisfaction. Fire safety. Firefighter training. New Zealand.
148	Assessment of impacts of change in requirements for hand-operated fire-fighting equipment in non-residential buildings	Civic Futures	2016	This study aimed to quantify the costs and benefits of providing hand-operated equipment for occupants of non-residential buildings.	Fire extinguishers. Fire hose. Fire blankets. Economic impact. Codes and standards.
149	Building quality working relationships across the emergency services sector	Kaitiaki Research and Evaluation	2016	Identified four key areas that contributed to creating barriers to collaborating in the NZ emergency services sector.	Disasters. Interagency co-operation. Disaster management. Emergency management

150	Differentiating Strong and Struggling Volunteer Brigades	Ethos	2017	The focus of this research was to identify the key factors that differentiate strong and struggling volunteer brigades.	Volunteer fire brigades. Volunteer firefighters. Firefighter training. Firefighting operations. Firefighting tactics.
151	Development of an integrated framework to assess after fire economic impacts	Scion	2016	Scion has developed a wildfire impacts economic assessment framework focused on after-fire consequences.	Wildfires. Economic aspects. Fire investigation.
152	Literacy, numeracy, and communication skills among New Zealand Fire Service volunteers	Family Centre	2016	This study explores the difficulties volunteer firefighters might have with essential literacy, numeracy, and communication skills for operational services.	Communications. Literacy. Education and training. Firefighters. Firefighting operations.
153	International best practice health, safety and wellbeing leadership in fire and emergency services	Litmus	2016	Comparative literature study of leading or emerging best practice safety, health, and wellbeing systems at a societal, community, organisational levels of fire services.	International comparisons. Occupational health. Firefighters. Leadership. Safety and health.
154	Scoping Principle Factors and Parameters to Include in an Environmental Stewardship Model for Firefighting in New Zealand	ESR	2017	This model is intended to inform incident commanders of risks to the environment from fire-fighting operations.	Wildfires. Decision making. Firefighting. Incident handling. Modelling. New Zealand.
156	Changing Public Behaviour: Enhanced and improved communication of fire danger	Scion	2017	Explores the communication of fire danger warnings, with an emphasis on signs as one of the principle means for communicating rural fire danger.	Wildfires. Fire safety. Campaigns. Communications. Community involvement. Rural fires.



157	Engaging owners of life-style blocks in understanding and mitigating wildfire risk	ESR	2017	Explores the barriers preventing lifestyle block owners from accepting wildfire risk and from making changes to reduce that risk.	Wildfires. Human behaviour in fires. Risk management. Risk reduction. Fire safety education. Community involvement. Campaigns.
158	Improving the safety culture and practices of Rural Fire Personnel in relation to near miss reporting	Heathrose Research Ltd	2017	Aims to find out what leads to a lack of near-miss and non-injury accident reporting within the Volunteer Rural Fire Forces in NZ.	Volunteer firefighters. Rural firefighters. Fire statistics. New Zealand
159	The voice of the family: research with families of volunteers	Litmus	2017	Explores how families support volunteers, the impact volunteering has on families and perceptions and experiences of family-focused programmes.	Volunteer firefighters. Community involvement. Volunteerism. Safety and health.
160	Environmental criteria in fire-fighting – Review and comparison of legislative, policy and operational environment for NZFS and overseas counterparts	ESR	2017	This report provides a legislation and literature review of the environmental aspects of firefighting activities in New Zealand.	Environment impact. Toxic exposures. Hazards. Firefighting operations. Firefighting tactics. Firefighter training. Water supplies. Water run-off. International comparisons. Laws and regulations. Pollution
161	Environmental Assessment of Existing Fire-fighting Foams in use by New Zealand Fire Service	ESR	2017	Overview of the reasoning behind the environmental concerns about the long-term effects and immediate environmental impacts of fire-fighting foam.	Firefighting foam. Environmental impact. Firefighting tactics. Firefighting operations. New Zealand.
162	After fire impacts on community in New Zealand	Skylight & Allen + Clarke	2018	The aim of this research was to understand the challenges faced by people who experience the	Recovery. Post-fire reviews. Human behaviour in fires. Psychological effects. Physiological effects. Risk

				devastating effects of fire, and their journey to recovery.	reduction.
163	Fire safety in schools, kura, ECE centres and kohanga reo	NZ Council for Educational Research	2018	Explores the use of its fire safety education programmes in schools, kura, and early childhood education (ECE) centres including kōhanga reo.	Māori. Fire safety education programmes. Fire safety. Children. Campaigns.
164	Improving safety at controlled burns through land manager knowledge and practices	SCION	2018	Improving safety at controlled burns through land manager knowledge and practices	Controlled burns. Wildfires. Fire safety. Fire behaviour. Human behaviour in fires. Decision-making. New Zealand
165	Evaluation of grass curing assessment methods for application in New Zealand	SCION	2018	Explores the options for a fully automated system for assessing grassland curing used for calculating the Fire Weather Indices and predicting fire behaviour.	Fire behaviour. Weather. Grassland fires. Wildfires. Forests.
166	Ready to respond: Impact of illness, injury, and death incidents on firefighter wellbeing	SHORE, Whariki Research Centre and Dr Pauline & Associates.	2018	Investigates the impact on the psychological wellbeing of firefighters attending potentially traumatic medical calls.	Psychological effects. Physiological effects. Firefighter health. Occupational health. Safety and health. Psychology.
167	Unintentional domestic fire-related fatality in New Zealand: 2007-2014	University of Otago	2018	Analysis of Coronial reports for the period 2007-2014, to develop a profile of the types of circumstances and people that died in fires.	Fire deaths. Fire fatalities. Fire statistics. Fire incidents. Human behaviour in fires.
168	Young people's perceptions of the firefighter role	LITMUS	2019	Explores young people's perceptions of the firefighter role, their understanding of the skills needed, and how the sources of information contribute to these perceptions.	Recruitment. Diversity. Youth. Firefighters. Firefighter training. Behaviour. Psychology.

169	Diversity in recruitment evidence review	Carol MacDonald (tactical)	2019	This evidence review of 'good practice' for the design and implementation of interventions to increase diversity in applications and recruits.	Recruitment. Māori. Firefighters. Diversity.
170	Evidence review of effective reduction interventions for Māori whanau and communities	Shirley Simmonds (tactical)	2019	Explores the key features of effective risk reduction interventions for Māori whānau and communities in order to inform risk-reduction messaging and activities of FENZ.	Māori hapori. Fire safety education. Risk reduction.
171	Economic cost of unwanted alarms	BERL	2019	Identifies international approaches to reduce unwanted alarms and their applicability in the NZ context.	False alarms. Unwanted fire alarms. International comparisons. Economic aspects. Risk reduction. Firefighting tactics. Response times.
172	Understanding how firefighters engage with learning technologies	LITMUS	2019	Findings to understand how firefighters engage with technology for learning.	Decision making. Digital learning. Firefighter training. Firefighters.
173	Toxicity of building contents in building fires	BRANZ	2019	Identifies how the contribution of common furnishing materials to fire death or injury as a result of toxic smoke inhalation in New Zealand.	Smoke inhalation. Toxic hazards. Flammable materials. Furnishings.
174	Lithium batteries – What's the problem?	BRANZ	2020	Aims to understand how lithium battery technologies contribute to fire risk, and what can be done to mitigate them.	Lithium batteries. Fire statistics. Risk reduction. Fire safety education.
175	Assessing firefighting water supplies	University of Canterbury	2020	A framework for estimating the energy release rate from developing building fires to support	Firefighting water. Water supplies. Codes and standards

				development of the new code of practice for firefighting water supplies.	
176	Impact of live fire training on national training centre based instructors	Massey University	2020	Aims to understand the impact of live fire training on trainers and identify interventions that can reduce risk in the live fire training.	Live fires. Training. Risk reduction. Firefighter training.
177	Inquiry on alternate water sources for firefighting	Morphum Environmental Ltd	2020	Identifies potential opportunities to improve the key issues highlighted in adopting non-reticulated water sources for firefighting in New Zealand.	Water for firefighting. Fire hydrants. Literature review. Codes and standards. Laws and regulations.
178	Hands Up: Anyone for a promotion? Does Fire and Emergency have a challenge advancing firefighters into management roles?	University of Waikato	2020	Aims to identify the motivations, barriers, and enablers to transition from Station to Executive officer roles.	Motivation. Career development. Decision making. Firefighter training.
179	Hands up: anyone for a promotion? Does Fire and Emergency have a challenge advancing firefighters into management roles?	University of Waikato	2021	This research aims to understand the motivations, barriers, and enablers to progress from a Senior Station Officer into the Executive Officer role.	Career development. Motivation. Leadership. Decision making. Firefighters. New Zealand
180	The New Zealand fire awareness and intervention programme: reach, uptake, and barriers to engagement	Victoria University of Wellington	2021	Key findings of a review of the FAIP programme that identifies the characteristics of rangatahi firesetters, the reach and uptake of FAIP, and barriers to engage with the FAIP.	FAIP. Rangatahi. Juvenile arson. Firesetting. Fire education programme. Behaviour. Risk reduction. Review. New Zealand
181	The use of open access satellite data to identify wildfire fuel types	Orbica	2021	This research evaluates the use of open-access satellite data to identify wildfire fuel types.	Satellites. Fire behaviour. Modelling. Fuels. Wildfires. Artificial intelligence. Risk reduction

182	Factors contributing to spontaneous combustion of slash at skid sites	SCION	2020	This research aims to investigate the factors contributing to spontaneous combustion of forestry skid sites.	Spontaneous combustion. Wildfires. Timber. Skid sites. Forestry. Risk reduction
183	The Pigeon Valley Fire: a questionnaire study about the evacuation process	University of Canterbury, Massey University	2021	Investigates how people affected by the Pigeon Valley Fire perceived the wildfire threat and responded to it in order to support emergency response agencies to improve their risk communication plans and evacuation procedures.	Wildfires. Large fires. Human behaviour in fires. Behaviour. Communication. Community involvement. Risk reduction. New Zealand
184	Understanding non-fatal fire related injuries in New Zealand: 2013-2017	University of Otago	2019	Identifies the highest risk groups of non-fatal fire-related injury (NFFRI) and investigate the common causes and circumstances of NFFRI.	Fire injuries. Fire statistics. Human behaviour in fires. Behaviour. Risk reduction. New Zealand
185	Non-fatal fire related injuries: the lived experiences of those who have been involved in a house fire event	University of Otago	2021	Highlights the lived experiences, motivations, and actions of those sustaining a non-fatal fire-related injury (NFFRI) during unintentional residential dwelling fires (UDF).	Fire injuries. Fire statistics. Human behaviour in fires. Behaviour. Risk reduction. New Zealand
186	Smoke alarms: insights into fire-related experiences, motivation, and actions	University of Otago	2022	This research aims to explore behavioural insights around the role of smoke alarms.	Smoke detectors. Human behaviour in fires. Psychological effects. Behaviour. Motivation. New Zealand
187	Understanding the volunteer journey	SHORE, Whariki Research Centre	2021	This report explores volunteers' experiences with Fire and Emergency.	Volunteer firefighters. Recruitment. Volunteerism. New Zealand

188	Women's career progression at Fire and Emergency New Zealand: what's already known, and where are the gaps?	University of Waikato, Auckland University of Technology, Kin Strategy	2021	Literature review identifying gaps in women firefighters' career progression.	Women firefighters. Career development. Recruitment. Leadership. Reviews
189	Hawke's Bay recovery team pilot evaluation	FENZ	2022	Evaluation into the effectiveness of a two year community recovery pilot.	Evaluation. Mass evacuation. Disaster planning. Community involvement. Welfare services. Recovery. Volunteers. Risk management. Psychological effects
190	Thermal and carcinogenic consequences of live fire training on National Training Centre-based trainers	Toby Mündel and Samuel Keer	2022	Findings from a study of PPE worn by fire training instructors exposed to carcinogens, while balancing the impacts of heat stress.	Carcinogens. Toxic effects. Exposure limits. PPE. Heat stress. Physiological effects. Occupational health. Firefighters.
191	Engaging with Hapori Māori: a literature review	Te Paetawhiti Ltd	2022	Identifies what good practice looks like when engaging with Māori in a meaningful and culturally appropriate way.	Māori. Community involvement. Cultural values
192	Testing the collective action model to lifestyle block owners fire reduction activities	ESR	2021	Describes the Collective Action Model (CAM) which is used to understand the attitudes, practices, and constraints of lifestyle block owners.	Fire reduction. Modelling. Wildland-urban interface. Rural fires. Fire safety
193	The cost of fire in New Zealand	Sapere	2021	An updated composite view of the economic cost and social value of fire services for New Zealand	Fire costs. Economic aspects. Fire services. Levy
194	Waiharara/Kaimaumu recovery research	Kantar Public	2022	This research was used to develop FENZ's national recovery strategy, as well as finalise its approach to recovery for the Waiharara	Recovery. Major fires. Wildland-urban fires. Community involvement

				fire.	
195	Readiness and recovery formative evaluation	Te Paetawhiti Ltd	2023	Highlights the work needed to be done in the recovery and relief space and including an understanding of te ao Māori conceptualisations of recovery.	Māori. Readiness and Recovery. Research. New Zealand
196	Can't be what you can't see: Progression and development of women firefighters	Dr Elaine Mossman	2023	Highlights the experiences of wāhine (women) firefighters in relation to barriers and enablers of their career development and progression.	Women firefighters. Career development.
197	Preventing arson by adult offenders. A review of the research literature, and survey of international practice.	Dr Peter Johnston and Dr Elaine Mossman	2022	Investigates the feasibility and value of a strategy for preventing arson by adults.	Arsonists. Arson prevention. Firesetting. Behaviour. Arson programmes. New Zealand
198	Lead Teams Programme Evaluation Supporting the Leadership Development Framework	Scarlatti	2023	Evaluation of the 'Lead Team' pilot programme, and its effectiveness in supporting leadership development.	Leadership. Career development. Decision making.
199	Experiences and career expectations of Māori firefighters	AIKO	2023	tba	
200	Te Hiku intensification research report	BECA	2023	Te Hiku intensification report, without appendices – desktop study of recent development proposals for residential sites in Tāmaki Makaurau.	Response times. Fire station location. Urban planning. Firefighting access. Strategic planning. New Zealand
201	Traffic calming and effective response needs	MRCagney (NZ) Ltd	2023	First look at potential impacts of recent roading strategy changes and traffic calming on emergency response speeds, access, and times.	Roads. Response times. Speed. Access. . Fire appliances. Traffic Regulations 1976.

202	An updated fire danger climatology for New Zealand	SCION	2023	Update of the fire weather station climatology datasets (to June 2021) and extends the summaries of long-term averages and extremes of fire weather and fire danger in New Zealand.	Fire danger rating. Climate. Fire weather index. Wildfires. Vegetation fires. Risk assessment. Firefighting operations. New Zealand
203	Barriers and enablers of recruitment and retention diversity	Martin Jenkins	2023	Examines recruitment and retention of staff and recommends improving diversity in Fire and Emergency.	Recruitment. Retention. Organisational effectiveness. Firefighters. New Zealand
204	Preliminary analysis of soil moisture data collected by the Fire Weather System weather station network	SCION	2023	Research on measuring soil moisture and how it can help determine fire danger.	Soil moisture. Fire danger rating. Climate. Wildfires. Forests. New Zealand
205	Climate and Wildfire Risk – Evidence Brief	Fire and Emergency	2023	Summary of Fire and Emergency commissioned research on climate and wildfire risk	Climate. Wildfire. Risk management. New Zealand
206	Hapori Māori in the Emergency Sector – Evidence Brief	Fire and Emergency	2023	Brief on working with iwi and hapori Māori to reduce the risk of fire-related hazards and to support response and recovery in emergencies.	Fire hazards. Risk management. Community involvement. Hapori Māori. New Zealand
207	Fire-related Injuries and deaths – Evidence Brief	Fire and Emergency	2022	Brief of 14 quantitative and qualitative studies over the last 20 years on fire-related injuries and deaths.	Fire deaths. Fire injuries. Fire statistics. New Zealand
208	Recruitment and Retention of Volunteers – Evidence Brief	Fire and Emergency	2022	Findings from studies over the last 20 years on the recruitment and retention of volunteer firefighters.	Recruitment. Volunteer firefighters. Research
209	Learning and Development – Evidence Brief -	Fire and Emergency	2023	Key findings from research over the past 20 years on learning development, and career progression of New	Career development. Firefighters. New Zealand



				Zealand firefighters.	
210	Safety, Health, and Wellbeing – Evidence Brief -	Fire and Emergency	2023	Summary of research on systems and processes for safety, health, and wellbeing at Fire and Emergency	Occupational health. Firefighters. Organisational effectiveness. New Zealand
211	SURGE Project Evaluation	VERSUS	2023	Evaluation of the SURGE Project used to assist with initiatives to attract volunteer firefighters at a localised level.	Volunteer firefighters. Volunteers. Evaluation. New Zealand
212	Understanding Red Fleet Carbon Emissions	Berl	2023	Sets out how Fire and Emergency will reduce their fleet emissions through its Climate Response Strategy 2022-2030	Climate. Carbon emissions. Fire appliances. Strategic plans. New Zealand
213	Understanding Wildfire Carbon Emissions and Lessons for the Fire and Emergency Agency	Berl	2023	Insights into the relationship between wildfires and carbon emissions. Highlights the importance of effective wildfire management strategies.	Wildfires. Carbon emissions. Environmental aspects. Firefighting strategies. New Zealand
214	FENZ and SFRS Financial Benchmarking Final Report	Grant Thornton	2024	This report was developed to help Fire and Emergency understand how other fire service entities invest across their activities.	Benchmarking. Fire and rescue organisations. International comparisons. Scotland. New Zealand
215	FENZ and SFRS Financial Benchmarking Methodology Report	Grant Thornton	2024	This report outlines the methodology used to benchmark Fire and Emergency against the Scottish Fire and Rescue Service.	Methodology. Benchmarking. Fire and rescue organisations. International comparisons. Scotland. New Zealand
216	Navigating Uncertainty : A guide to future scenarios for Te Hiku	WSP Limited	TBC	This report identifies future scenarios, key implications,	Methodology. Benchmarking. Fire and

				and a roadmap indicating progress and recommended next steps	rescue organisations. International comparisons. Scotland. New Zealand
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Owner	Team Leader Records Management
Steward	Coordinator Records Management
Last reviewed	12/02/2025
Review period	6-monthly