

## Queensland Fire and Rescue Authority

How the Authority is measuring success and placing resources where are needed.

### Situation:

Queensland Fire and Rescue Authority in Australia oversees the fire and safety practices that cover the State's 3.5 million people. The Authority's urban type brigades cover approximately 83 per cent of the States population while the remaining areas of the State are serviced by the Authority's Rural Fire Service.

### Challenge:

Until about 1998, the Queensland Fire and Rescue Authority was tracking urban brigade information on fires, fire safety and fire practices in a legacy database that was quickly becoming overloaded. The Authority did not have a fast, user-friendly method of obtaining data from its database to help it improve its fire-fighting practices and overall community safety. The organization needed to:

- Retrieve and analyse data quickly
- Enable fire Authority to be proactive rather than reactive
- Complete statistical analysis automatically

### Solution:

Queensland Fire and Rescue Authority turned to SPSS statistical software to reduce the amount of time it took to retrieve and analyse the vital incident report statistics accumulated in more than 400,000 record files.

### Results:

Until 1998, the Queensland Fire and Rescue Authority relied on a legacy database called the Australasian Incident Recording System (AIRS). AIRS tracked details such as the time, date and address of fires; the amount of property lost; the cause and cost of the fire; and the number of casualties - all with the goal of improving the fire-fighting and emergency services provided to the public.

### At a glance

Country: Australia  
 Industry: Government  
 Employees: 2,100  
 Volunteers: 36,000  
 Web site: [www.fire.qld.gov.au/](http://www.fire.qld.gov.au/)

**Solutions used:** SPSS for Windows

**Results:** Enabled the Authority to measure success and place resources where needed

*"With IBM SPSS Statistics, I can focus on areas of analysis that have been ignored in the past. We're now actually using the data we're collecting. We now look at internal processes such as forecasting in more detail. With a comprehensive overview of incident location and rate of occurrence, we can plan ahead for vital systems and equipment as well as predict potentially dangerous situations and do something about them before they become trouble spots"*

Brian Maclachlan, Principal Adviser,  
 Statistical Research and Analysis  
 Queensland Fire and  
 Rescue Authority



Unfortunately, the system was difficult to use, and thus the Authority completed very little analysis to help improve these services. In order to improve fire and emergency operations throughout Queensland, the Authority needed to reduce the time it took to generate analysis as well as simplify its highly complex data extractions and analysis process.

### **Extracted data from more than 400,000 consolidated record files in seconds rather than hours.**

The Authority's statistician turned to SPSS statistical software to consolidate the data files, increase the user-friendliness of the system and reduce the time it took to complete data analysis. Today, using SPSS software, the Authority's statistician can now extract data from files in a matter of seconds - where previously the same process could have taken hours or even days.

### **Reduced analysis from three months to just a few minutes**

Once that data is extracted, analysing it now takes just minutes - and full reports can be generated in less than a day.

"Major detailed analysis of trends in incidents and response time - which would either have taken months to complete or would have been impossible to complete prior to the application of IBM SPSS Statistics software - are now possible," says Brian Maclachlan, Principal Adviser, Statistical Research and Analysis, at Queensland Fire and Rescue Authority.

"Using SPSS, one particular incident trend analysis that used to take us several months to complete can now be repeated and ready for publication in less than a day."

In addition, the Authority's monthly performance statistics - which measure performance such as emergency response times for each station in the State - can now be completed in less than two hours. The reports used to take a minimum of three days to complete.

"We now have people walk in and say, 'I need an analysis of how many fires there were in a certain region in a certain time period,' and it takes longer to print the analysis than it does to run it," Maclachlan says. "Prior to implementing IBM SPSS Statistics, I would have said 'Come back in a few months and we'll have it for you.'"

### **Saved Authority more than \$100,000 annually in human resource costs**

Maclachlan estimates that the small cost of the statistics software saves the Authority approximately \$100,000 annually, mainly through reduced human resource costs. "With the level of analysis that we do, if we did not have the IBM SPSS Statistics software, we would need more staff, and at least one more statistician - if not two," he says. "We can now run an analysis before we leave, and in the morning when we come in, it's all there. It's like having someone working for you - but you don't have to pay for it."

### **Enabled the Authority to measure success and place resources where needed**

The Authority is using the data it collects to determine if the Authority's fire stations are operating in the right locations; to develop community safety programs in areas of high risk; and to determine what type of equipment - such as ladders versus medical equipment - is needed at which stations.

"We now look at internal processes such as forecasting in more detail. With a comprehensive overview of incident location and rate of occurrence, we can plan ahead for vital systems and equipment as well as predict potentially dangerous situations and do something about them before they become trouble spots" says Maclachlan. "We believe that if you can mine your records and get the findings to the relevant people quickly, the performance of your organization can only get better."

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