

Country Fire Authority Victoria

Strategic fire response with GIS

With geographic information system (GIS), Country Fire Authority (CFA) Victoria reimagines fireground logistics, brigade coverage, and strategic response, ensuring every minute, every asset, and every decision counts.

As bushfire seasons grow longer and more intense across Victoria, and population patterns shift, CFA is rethinking how it prepares, protects, and responds. By leveraging GIS, CFA applies spatial analysis and predictive modelling to improve coverage, resource placement, and strategic planning. This ensures every decision is data driven and every response is faster and more effective.

Challenge

CFA oversees 1,139 brigades and 2,331 firefighting vehicles, responding to over 3,500 grass and scrub fires in 2024 - 2025. Key challenges include expanding service coverage, ensuring brigades have the right mix of resources, and delivering 10,000 litres of water quickly by road or air. GIS played a critical role in addressing these challenges, including the strategic placement of 29 new ultra-heavy tankers, part of a \$12.8 million Victorian Government investment to boost CFA's initial attack capability.

Solution

To meet these challenges, CFA adopted a smarter, data-driven strategy enabled by ArcGIS Pro with the Network Analyst Extension. This platform supports advanced spatial modelling, helping CFA simulate brigade coverage, model water delivery, and assess fire risk. By integrating population forecasts and risk data, CFA aligned infrastructure and future needs and prioritised high-risk zones, ensuring faster, more effective responses where they matter most.

"GIS is not an afterthought but a foundational input into how CFA prepares, plans, and protects."

Teena Speirs, Modelling and Products Manager - CFA

Outcomes

GIS has become central to CFA's emergency planning, enabling faster, smarter decisions that save lives. By guiding resource allocation and response with spatial intelligence, CFA builds resilience and leads in fire management with proactive, evidence-based strategies.



Results

Strategic resource allocation

Faster response time

Enhanced resilience through predictive risk modelling

Improved coverage with data driven planning

Esri tech

ArcGIS Pro
ArcGIS Network Analyst extension
ArcGIS Experience Builder

See the full story
in our StoryMap



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