CALL FOR EXPRESSION OF INTEREST

CFA23 – UNDERSTANDING IGNITION TRENDS AND AGRICULTURAL FIRE RISK

EXPRESSIONS OF INTEREST **DUE 5:00PM AEST, 15 SEPTEMBER 2025** TO research@naturalhazards.com.au

Natural Hazards Research Australia (hereafter the Centre), in conjunction with our client, the Country Fire Authority (CFA), is seeking Expressions of Interest from project teams for the following project:

CFA23 – Understanding ignition trends and agricultural fire risk

Project aims and objectives	This project aims to: • document and develop an understanding of the primary drivers of agricultural fire • develop an understanding of the outcomes of agricultural fire • identify risks, including organisational risks to CFA • identify areas for improvement of practices/documentation/ guidance • make recommendations for Standard Operating Procedures (SOPs) and best practices (e.g., harvest go/no-go guidelines for ignition risk reduction, monitoring and handover, ignition methods and patterns and equipment).
Estimated duration	24 months
Maximum available budget	$272,727 (ex GST)
Centre contact	For any questions regarding this Call for EOIs, please email research@naturalhazards.com.au.
Submission of EOI	EOIs are to be submitted to research@naturalhazards.com.au by **5:00pm AEST, 15 September 2025**

BACKGROUND AND CONTEXT

Over the past few years, locals in northern Victoria have observed increased occurrences of fires during crop harvest and spontaneous combustion of haystacks. Anecdotal evidence suggests that the harvest occurrences may be driven by machinery used during harvesting operations (hereafter 'headers') as well as weather (e.g., short-term drought conditions) and crop condition. The leading cause of haystack fires is spontaneous ignition – this occurs when hay is cut at a high moisture content and is 'damp', allowing for microorganisms to grow and generate heat. New chemical additives are being applied before hay is cut, allowing for earlier cutting and retaining more nutrients for livestock. It is unknown whether these additives are contributing to the combustibility of haystacks or simply the high moisture content of being cut earlier. In recent years, there have been many wetter summers than average, which could also be contributing to the increased number of haystack fires.

In high-density cropping areas of the state, the temporal fire season is often described as lasting from the time harvesters enter the paddocks until the time they leave. This time period is dynamic and dependent on crop growth and yield and underlying climatic conditions. To assist in readiness arrangements, it is critical to better understand ignition trends of agricultural fires. This includes the varying contributions of weather, crop type and condition, harvest timelines and progression, storage of hay, suppression capabilities on site, harvest practices and guidelines and equipment used in the ignition and development of header-caused crop fires (incl. stubble).

Furthermore, fire management decisions need to weigh the trade-offs involved:

- Haystack fires: balancing the safety risk of fire services handing responsibility back to landowners without full extinguishment, against the significant time and effort required for firefighters to remain on scene for days when the risk of further spread is low.
- Stubble burns: weighing the benefits of fuel reduction against the potential for fire escape and the impacts on carbon loss and soil health.

A significant number of Victoria's fires occur in agricultural areas. Damages to crops, farm infrastructure and livestock have a significant impact on the livelihoods of the farming communities where these fires occur. CFA research and development have worked on many projects relating to improving our understanding of fire risk in these agricultural environments to improve operations.

In 2023, the CFA District 18 Operations Team and North West Region Community Safety Team commissioned research to investigate the primary ignition causes of header fires within the district. Over two seasons, the project collected anecdotal evidence from farmers and incident controllers to determine ignition causes and collected weather data and Fire Danger Ratings at the time of incidents in D18 in the 2023/34 season and D18 with additional data from nine other districts in the 2024/25 season. Project findings indicate that equipment failure and the combination of machinery design and crop

condition were major contributors to ignition, and that most ignitions occurred under moderate to high Fire Danger Ratings. No such research has been conducted on the prevalence of haystack fires.

PROJECT DESCRIPTION

This project aims to:

- document and develop an understanding of the primary drivers of agricultural fire
- develop an understanding of the outcomes of agricultural fire
- identify risks, including organisational risks to CFA
- identify areas for improvement of practices/documentation/guidance and make recommendations for Standard Operating Procedures (SOPs) and best practices (e.g., harvest go/no-go guidelines for ignition risk reduction, monitoring and handover, ignition methods and patterns and equipment).

EXPECTED OUTPUTS

Report on literature and best practice review: a review of what is known about agricultural fires—including those related to harvest, haybales, stubble burn escapes, and spontaneous ignition—and documentation of current harvesting and haystack management practices in Victoria, including preparedness and response for possible fires. This will also include documentation of understood 'best practice' concerning technological methods, monitoring, lighting patterns and equipment and a review of efficacy.

Report on ignition trends: an analysis of data to determine drivers of and conditions (weather, crop, etc.) under which fires occur. This will include information from CFA and consultation with farmers and CFA members.

Report on agricultural fires: an investigation of fires in the 2025/26 and 2026/27 seasons, which will include:

- type of fire
- equipment involved
- agricultural product involved
- any other notable details
- date and time of occurrence
- location
- activity (e.g., harvest)
- way in which fire was suppressed (e.g., burnt out, active suppression, firebreak)
- documentation of the typical processes and outcomes from agricultural fires, including resources required, duration of event, likely and potential impacts, any other risks evident.

Final report on recommendations for improvement: in line with project findings, recommendations for amendments to current harvest guidelines and haystack fire management risks based on improved ignition trend evidence. Present these findings in stakeholder presentations.

In scope:

- Analysis of CFA incident data to determine harvest-related and haystack fire occurrence, including timing, location and size.
- Analysis of crop state (harvest progression) and condition at the time of fire.
- Documentation of suppression capacity and capability on farms.
- Documentation of ignition causes and other pertinent information.
- Development of protocols to collect information at future harvester fires.
- Collection and analysis of data relating to other agricultural fires, including escaped stubble burns.
- Recommendations for improvements to current harvest guidelines and haystack management practices.
- Field visits and regional consultation.

Out of scope:

- Engineering/design/technological improvements to machinery and haystack monitoring.

ANTICIPATED OUTCOMES

This project will provide vital information regarding agricultural fires. It is intended to be the primary project for understanding ignition trends, to allow for follow-on research projects. The evidence base, methodologies and recommendations developed can inform improvements to fire risk practices, planning, and education more widely—particularly in rural, farming and high-fuel-load environments.

Learnings from the project may be applied more broadly in the following ways:

- Findings may support interstate or national consistency in harvesting fire danger guidelines and/or review of haystack safety guidelines under climate change conditions.
- Improving standard operating procedures based on agricultural fire risk.
- This project could serve as a foundation for a broader rural ignition trend database shared across sectors.
- Ongoing data monitoring could be linked with climate adaptation programs across Victoria or nationally.
- The consultation approach offers a template for collaborative, community-informed planning in other rural fire contexts.
- Supports evidence-based innovation in rural fire management.
- Contributes to the national agenda on climate-smart agriculture and community resilience.

Implementation

An evidence base of ignition trends in agricultural fires will lead to improved operational decision making in fire prevention and response. Risk management and technological improvements identified will ensure CFA is operating efficiently.

TIMELINES AND MILESTONES

Key steps for research provider	Due date
Research and engagement plan	October 2025
Methodology design – fire investigation	November 2025
Literature and best practice review	February 2026
Ignition trends report	February 2026
Fire investigation report 2025/26	May 2026
Review of CFA operational doctrine and current practice	August 2026
Fire investigation report 2026/27	January 2027
Draft report with recommendations	June 2027
Presentation to key stakeholders	August 2027
Final report	September 2027
Project closure	October 2027

QUALITY CONTROL AND REPORTING

Final report and other project outputs

It is the expectation of the Centre and our client CFA that the materials delivered as part of this project will meet the highest standards and will be suitable for internal and external distribution.

It is a requirement that all reports (and any supporting material) be submitted to the Project Control Board's satisfaction (see under Project Governance). To ensure the final report meets this expectation, it will be subject to up to two rounds of review (with a minimum of two weeks for each review) by CFA. Project teams are required to ensure an internal peer review process is undertaken before the draft final report is submitted for CFA consideration.

Before the final report is submitted to the Project Control Board for approval, it must also have been professionally proofread and copy-edited.

These steps must be arranged by the project team and be costed as part of the project budget and completed within the project timeframe. **Reports that have not been professionally proofread and copy-edited will not be considered final**.

Project teams should ensure that sufficient time is included in the proposed project timeline for review of the draft final report by CFA, revision, and completion of the final report. This may take up to two months.

Communication

To further assist with the quality assurance, it is expected that:

- The project team will utilise a consultative approach and demonstrate this by documenting engagement activities within the relevant reports.
- The project team will work collaboratively with CFA and the Centre in developing any public communications about the project.
- The project team leader will give periodic presentations (e.g., annually) to key stakeholder groups to gain critical feedback on project milestones.

Any further quality control processes that are required for this piece of work, as well as key success measures, will be agreed upon with the CFA Research Lead as part of the planning process.

PROJECT MANAGEMENT AND PROCESSES

Contractual arrangements

This project is being delivered under an Agreement in place between Natural Hazards and Disaster Resilience Research Centre Ltd, t/as Natural Hazards Research Australia (the Centre), and the Country Fire Authority (CFA). The contract put in place between the Centre and the Lead Provider Organisation selected to undertake this work will reflect the terms of the Agreement between CFA and the Centre.

A draft copy of the contract between the Centre and the successful Lead Research Provider Organisation can be found here. This contract should be reviewed as part of the EOI process.

This is a standard agreement, and any changes will be at the sole discretion of the Centre. If you would like to request amendments to any of the terms and conditions set out in the proposed contract, details of the proposed changes and the reason the changes are requested must be included with the submitted response. In considering this contract and proposing changes, please note the Centre has been advised by CFA that (i) changes to provisions relating to the ownership of Intellectual Property will only be varied to take account of substantial in-kind contribution from the successful Provider Organisation/s, and (ii) no changes can be made to the publications approvals processes.

In the case of consortiums, the Centre requires one consortium member be nominated as Lead Research Provider Organisation for contractual arrangements.

Project governance

A monthly meeting between the research team and the project team will be held to discuss the project's progress and ensure that the project team can provide input to ensure the project remains on track for producing practical outcomes for agency use.

Each project is carried out under the supervision of a Project Control Board (PCB) and in accordance with the governance arrangements agreed between the Centre and CFA.

While the contractual relationship for the delivery of this project will be between the Lead Provider Organisation and the Centre, there will also be a strong relationship between the project team and CFA staff. Communication is an important element of the success of this project and providers will be required to maintain strong links with the CFA Research Lead, the Project Reference Group, and the Centre Project Manager throughout the project.

A governance plan has been prepared which shows the roles and responsibilities of each of the participants: CFA, Natural Hazards Research Australia, and the Provider Organisation/s. The successful research team will be required to comply with the processes and expectations as set out in that document.

Project planning

The project overview included in this document describes the way the CFA subject matter experts believe the project can most successfully be undertaken. Alternative approaches can be considered. Any alternative approaches must ensure the delivery of the required outputs, including any intermediate outputs identified in this document.

Following acceptance of a project proposal, the successful research organisation must prepare a detailed project plan and risk treatment plan using the CFA template. This plan must be approved by the CFA Research Lead and will become an attachment to the contract

Reporting

The successful project team will be required to make at least one presentation (and possibly two) annually to the Project Control Board or other nominated CFA group during the life of the project.

In addition to the Expected Outputs listed above, the project team will also be required to:

- provide a fact sheet within three months of signing the contract between the research organisation and the Centre (CFA template)
- provide detailed Quarterly Progress Reports
- contribute to a Project Evaluation Report.

Dates for submitting Quarterly Progress Reports:

Period covered	Report required
1 July to 30 September	5 October
1 October to 31 December	5 January following calendar year
1 January to 31 March	5 April
1 April to 30 June	5 July

SUBMISSION REQUIREMENTS FOR THIS EOI

Project teams responding to this Call for Expressions of Interest are required to submit their response, including:

- A project proposal of up to eight pages, clearly addressing the requirements of the specifications set out in this document. The proposal should include an introduction, a project plan for delivery, a detailed project budget and a summary of staff and skills. Proposals must include achievable timelines, which will be used to monitor progress.
- Project budget, including details of any in-kind contribution from the research organisation. A statement of acceptance of the terms and conditions of the proposed contractual arrangements. If such arrangements are not acceptable, details of any changes must be included with the submitted response.

ADDITIONAL INFORMATION

In responding to this Call for Expressions of Interest, advice should be provided on any known or anticipated impacts of COVID-19 pandemic restrictions or human resource risks on the timely delivery of the project. Where appropriate, risk management for the impacts of COVID-19 pandemic restrictions should be incorporated into the EOI.

Any proposal, once submitted, will be treated as commercial in confidence.

Applications must be submitted to: research@naturalhazards.com.au by **5:00pm AEST, 15 September 2025.**

Frequently asked questions

Additional information provided to individual respondents will also be published on the Centre website to ensure access to all interested parties. Respondents are encouraged to check the website for any additional information via these published FAQs, prior to the closing date.

Evaluation criteria

After the closing date, Natural Hazards Research Australia and the CFA Research Lead will review proposals against the evaluation criteria below and recommend the State's Representative to the most appropriate organisation/s to undertake this work. The evaluation criteria indicate those matters that should be included in the project proposal and associated documentation – details are provided in the table below.

You will be advised by **early October** if your application has been accepted and it is expected work on the project will commence upon signing of the contract.

The decision of the Centre and our client CFA will be final. The Centre reserves the right not to offer the work or only allocate a proportion of the available funding if a proposal does not meet the client's needs. The Project Control Board reserves the right to invite any other specific providers as it sees fit to submit proposals before or after the closing date.

Evaluation criterion	% weighting
Research capability and capacity: The research provider must demonstrate they have the capacity and capability to deliver an excellent applied research project in a Victorian environment and deliver the required outputs within timelines. If the project requires a specialist development activity (e.g. electronics, instrumentation, non-production software), the provider has the appropriate skills to provide this.	25
Project proposal: A clear demonstration that the project team understands the project scope via the development of a feasible approach that meets defined objectives. The proposal must include an indicative timetable of work and interim milestones/project outputs as described in this document.	35
Industry engagement: Track record of industry engagement with evidence of providing findings and outputs that have been utilised by government agencies. Demonstrated successful relationships with end-user partners. Experience working in agricultural settings and fire management.	20
Value for money: Likelihood of delivery of required outcome within available budget along with the ability to leverage the funds provided with in-kind contributions or supplementary opportunities, including demonstrated ability to leverage co-funding and partners for technology development, use and evaluation. The evaluation team will consider the membership of the project team and the proposed roles and time commitment. A plan for the production of academic research publications will be considered as additional value.	20

ATTACHMENTS:

- Draft contract can be found here.