

CALL FOR EXPRESSION OF INTEREST

FRM21 – BUSHFIRE BEHAVIOUR DATABASE: PHASE ONE (USER INTERFACE)

PROPOSALS DUE 5:00PM AEST, 15 SEPTEMBER 2025 TO research@naturalhazards.com.au

SUMMARY

INTRODUCTION

Natural Hazards Research Australia (hereafter the Centre), in conjunction with our client, the Department of Energy, Environment and Climate Action (Victoria) (DEECA) is seeking Expressions of Interest for the following project:

FRM21: Bushfire behaviour database: Phase one (user interface)

PROJECT AIMS AND OBJECTIVES

This project will develop a user interface for bushfire behaviour research datasets. The initial development will focus on two key priorities:

- A bushfire reconstruction database user interface that enables users to access, add and manage case studies. These can be used for a range of purposes, including evaluating fire behaviour, assessing components of fire behaviour models, validating fire danger ratings and reviewing suppression effectiveness.
- A fuel data processing and visualisation hub to create, process and view bushfire fuel data.

As secondary objectives, the project will build on previous Safer Together projects by incorporating functionality to assess simulator accuracy and evaluate the effectiveness of fuel treatments.

BUDGET

The total maximum budget for this project is \$191,815 (excl. GST) and all work must be completed by 31 July 2026.

RESPONSE

Any research 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.

Research teams responding to this Call for Expression of Interest are required to submit a project proposal (4-6 pages) clearly addressing the requirements of the specifications set out in this document and a project budget including details of any in kind contribution from the research organisation.

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BACKGROUND AND CONTEXT

The lack of complete and accessible retrospective bushfire event information is a recognised gap within the Victorian bushfire management sector. This gap is blocking several actions that are required for fire agencies to be able to commit to a thorough adaptive management approach to bushfire risk management. The lack of accessible and comprehensive data means that agencies are unable to perform regular and thorough analysis to:

- a. access local intelligence on fuels and potential fire behaviour at a local scale
- b. compare fire spread predictions to actual fire behaviour and operational need
- c. assess the effectiveness of fire suppression approaches
- d. assess whether our fuel reduction program has contributed to mitigating spread and/or reducing risk.

Bushfire fuel data is used for many purposes in Victoria, including as an underpinning dataset for fire danger ratings, fire simulation and fuel management planning. Every year, DEECA and the Country Fire Authority (CFA) work together to update the fuel type mapping and associated

fuel accumulation curves. The development process is manual, which is time-consuming and brings with it considerable sources for human error. The project is required to create a more efficient approach, reduce the potential for human error and provide more transparency in Victoria's fuel development process. This project enhances workflow efficiency.

A lack of information to support the above questions has downstream implications for bushfire risk management at both strategic and short-term time scales. Decisions cannot always be made using local intelligence, preventing lessons from being learned and improvements from being made. The gap also impacts training and education, as there is a lack of resources available for exercises.

This project links with the national Bushfire Information System, a project aimed at developing a national database of bushfire observation data. The project is currently funded to deliver a scoping study, which will deliver a high-level consideration of jurisdictional data availability. This project will build on this by developing a detailed data analysis on data from CFA, DEECA and Fire Rescue Victoria (FRV) that will feed into the Bushfire Information System when developed.

This project is to deliver phase one of the bushfire behaviour database. Phase two will be progressed with fire agency resources to expose data endpoints for bushfire observation data and streamline data access in a way that they can be ingested by the phase one build. Phase two is expected to take multiple years and will draw on existing internal capacity.

SCOPE

INCLUSIONS

The appointed service provider will be required to complete the following tasks:

1. Workshops with end-users to design a spatial user interface.
2. Design and build of spatial user interface as per specifications defined in the outputs section.
3. 12 months of hosting with consideration to a long-term solution for hosting and alignment with existing DEECA architecture to reduce cost and redundancies.
4. Workshops to train end-users.

EXCLUSIONS

The following tasks are excluded from the project:

1. Storage solution for data (data will be stored in the existing DEECA architecture).
2. Ongoing hosting.
3. Architecture to support data processing requirements (this will be supported through existing DEECA architecture).

PROJECT SPECIFICATIONS

KEY STEPS

In developing the project proposal to be submitted in response to this Call for Expression of Interest, researchers should be mindful of the following project requirements:

Key steps	Due date
1. Project planning	September 2025
2. End-user workshops to specify end-user requirements	October 2025
3. Wireframe build	December 2025
4. Beta version of system build	March 2026
5. Final system build	May 2026
6. End-user workshops for training and handover	June 2026
7. Project closure approved by the PMC	July 2026

EXPECTED OUTPUTS

- Spatial user interface, designed to meet end-user needs, capable of:
 - Having modules that reflect priority areas:
 - Bushfire reconstructions and case studies module that allows the user to access existing case studies and associated data for multiple use cases (e.g. bushfire reconstructions, suppression effectiveness, fire danger case studies, local knowledge, etc). This utilises the recently developed Structured Query Language (SQL) reconstruction database that will be stored on Amazon Web Services (AWS).
 - Bushfire fuel data management module that allows users to view, process and output data.
 - Fuel treatment effectiveness module that, as a second priority, explores the applicability of existing data and code (future capability).
 - Simulator accuracy module that, as a second priority, allows users to compare bushfire reconstructions with simulator outputs (future capability).
 - Allowing users to view and edit spatial, tabular and text data as well as photos.

- Developing processes from existing workflow designs to create spatial fuel layers.
- Allowing for future capability to incorporate existing scripted methods for analysing fuel reduction effectiveness and suppression effectiveness.
- Allowing for future capability to view and export bushfire observation data collected during incidents, and weather observation data.
- 12 months of hosting with consideration to a long-term solution for hosting and alignment with existing DEECA architecture to reduce cost and redundancies.

QUALITY CONTROL

Final report and other project outputs

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

It is a requirement of this project that the final report (and any supporting material) be submitted to the Project Control Board's satisfaction. 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 DEECA. The preferred provider will be required to ensure an internal peer review process is undertaken prior to the draft final report being submitted for DEECA consideration.

Before the final report is submitted to the Project Control Board for approval it must also have been:

- Through an independent peer reviewer approved by the Centre's Project Manager
- Professionally proof read and copy edited.

These steps must be arranged by the preferred provider, costed as part of project budget and completed within the project timeframe.

Communication

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

- The project team will utilise a consultative approach when developing the overall framework and data management processes/criteria, and will demonstrate this by documenting engagement activities within the relevant reports. This will involve seeking input from DEECA subject matter experts to ensure development of a framework and processes that are fit for purpose.
- The research 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 with the DEECA 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 Department of Energy, Environment and Climate Action (DEECA) in the State of Victoria. Under this Agreement the Centre is responsible for the delivery of a number of bushfire, ecological and compliance related research projects. The contract put in place between the Centre and the research organisation selected to undertake this work will reflect the terms of the Agreement between DEECA and the Centre.

[A draft copy of the contract between the Centre and the successful research 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 DEECA 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 research organisation/s, and (ii) no changes can be made to the publications approvals processes.

PROJECT GOVERNANCE

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 DEECA.

While the contractual relationship for the delivery of this project will be between the research organisation and the Centre, there will also be a strong relationship between the research team and DEECA staff. Communication is an important element of the success of this project and Researchers will be required to maintain strong links with both the DEECA Research Lead 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. 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 DEECA 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 DEECA template. This plan must be approved by the DEECA Research Lead and will become an attachment to the contract. The project plan must be approved within three months of the notification of the acceptance of the project proposal.

REPORTING

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

Research organisations will also be required to:

- provide a fact sheet within three months of signing the contract between the research organisation and the Centre (DEECA/Safer Together template)
- provide detailed progress reports on a quarterly basis
- contribute to the 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
1 January to 31 March	5 April
1 April to 30 June	5 July

SUBMISSION OF EXPRESSION OF INTEREST

SUBMISSION REQUIREMENTS

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

- A draft project proposal (4-6 pages) clearly addressing the requirements of the specifications set out in this document. Proposals must include achievable timelines, which will be used to monitor progress. A statement of capability demonstrating the ability of the proposed project team to undertake the work. This statement of capability should include the names and experience of key team members and their proposed contribution to the project (The capability statement should not exceed 4 pages).
- 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

- Research bids from a consortium of research organisations with expertise in the relevant fields are specifically encouraged.
- Attached is a draft contract which we ask your organisation to review. In your response to the EOI you should identify any items in this contract that will require attention /amendment should your organisation be selected to undertake this piece of work. This contract is based on the Head Agreement between DELWP and the Centre and as such there is very limited scope to make changes to the draft contract.

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EVALUATION CRITERIA

After the closing date the Centre along with the DEECA Research Lead will review proposals against the evaluation criteria below and make a recommendation to the State's representative

on the most appropriate organisation to undertake this work. The evaluation criteria provide an indication of 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 **late-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 DEECA 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 researchers as it sees fit to submit proposals before or after the closing date.

Evaluation criterion	% weighting
Research capability The capacity and capability to deliver an excellent applied research project in a Victorian environment.	15
<p>Project proposal A clear demonstration that the research team has an understanding of the project scope through the proposed research approach</p> <p>The proposal must also include an indicative timetable of work and interim milestones/project outputs as described in this document</p> <p>Quality control Clear documentation of quality control processes including proposed internal and external reviewers. Identification of copy editors and proof readers.</p>	50
<p>Industry engagement Strong Track record of industry engagement with the ability to support and influence bushfire management in Victoria through interaction with land and fire agency personnel</p> <p>Victorian focus Ability to undertake research in Victorian environments individually and/or in cooperation with land and fire managers</p>	15
<p>Value for money Delivery of required outcome within available budget along with the ability to leverage the funds provided with in-kind contributions or supplementary opportunities.</p> <p>The evaluation team will consider the membership of the project team and the proposed roles and time commitment.</p>	20