Natural Hazards Research Australia

Call for Expressions of Interest

T10-A2: Testing and improving bushfire-prone area construction standards

Expressions of Interest due **5pm AEST, 10 April 2026**
to research@naturalhazards.com.au

Australian Government

Overview

Natural Hazards Research Australia (hereafter the Centre) is seeking Expressions of Interest from project teams for the following project:

T10-A2: Testing and improving bushfire-prone area construction standards

Project description	The Australian construction standard AS3959 provides national site assessment and construction requirements for buildings in bushfire-prone areas and is a key bushfire mitigation measure. The research aims to improve safety outcomes for building occupants during a bushfire and enhance community resilience. While the science underpinning AS3959 was the best available in 1991 when the standard was introduced, amendments to the standard since then have drawn on limited new science, and there remain many knowledge gaps. Such knowledge gaps include the performance and safety outcomes of various building design responses and combinations of materials allowed under the standard at each Bushfire Attack Level (BAL). There is a recognised need to augment the current knowledge base with new robust independent research. Accordingly, this research project aims to critically examine key assumptions and address knowledge gaps in the application of AS3959 with a focus on the construction requirements, providing an independent evidence base to inform improvements. The findings will support nationwide policy development and strengthen planning and building systems that regulate development on bushfire-prone land, ensuring AS3959 continues to serve as an effective bushfire mitigation measure.
Estimated duration	Three years
Budget	The budget envelope for this project is $900,000 to $1,000,000 (ex GST) The research team should note that this is a competitive process. Expression of Interest submissions will be assessed on value for money and justification for any funds requested.
Related national research priorities[1]	→ Resilient communities
Related Centre research priorities for 2024–26[2]	→ Land-use planning and urban design → Data management and science

1 Natural Hazards Research Australia (2022) National research priorities for disaster risk reduction and community resilience to the impacts of natural hazards, accessible at www.naturalhazards.com.au/sites/default/files/2022-05/NatHazResAus ResearchPriorities FA02.pdf

2 Natural Hazards Research Australia (2024) *Biennial Research Plan 2024–26*, accessible at https://www.naturalhazards.com.au/sites/default/files/2024-07/NHRA%20ResearchPlan24%E2%80%9326%2004.pdf

Supporting organisations	→ ACT Rural Fire Service → AFAC → Country Fire Authority → Country Fire Service → Department of Fire and Emergency Services WA → NSW Rural Fire Service → Tasmania Fire Service → Bushfires NT → Queensland Fire Department
Centre contact	For any questions regarding this Call for EOIs, please email research@naturalhazards.com.au.
Online project briefing	For more information or questions, an online project briefing webinar will be held at **2:00pm AEDT on 18 March 2026**
Submission of EOI	EOIs must be prepared using the Centre's EOI submission form and Budget Template. EOIs are to be submitted to research@naturalhazards.com.au by **5:00pm AEST on 10 April 2026**

Statement of requirements

Background and context

Constructing buildings to comply with the Australian Standard AS3959 - Construction of Buildings in bushfire-prone areas (AS3959) is an important mitigation strategy in protecting communities from dangerous bushfires. However, at times, the application of the standard is based on subject matter expertise and assumptions rather than quantified experimental results. Relatedly, fire services have experienced considerable challenge from industry in both the development of policy and implementation of the AS3959 standard. For example, there was significant industry opposition to policy regarding the construction of buildings assessed as BAL Fire Zone (FZ) in New South Wales (NSW) in 2020 following a revision of the statutory planning document Planning for Bushfire Protection (PBP). However, an analysis of 2019-20 bush fire season house loss data in NSW suggests that there was at least a 50% reduction in house loss where recommendations for compliance with PBP by RFS. This clearly demonstrates the important role of independent evidence in ensuring policy and industry recommendations for construction in bushfire-prone areas are both well-informed and aligned.

There is a need for independent research into how a building constructed to AS3959 will perform. Much of the current science underpinning AS3959 has been undertaken on single building elements (i.e. a window) rather than experimentally addressing assemblages of components comprising a design. For example:

1. Under various BAL levels and high ember density and wind conditions, how will building products that are individually bushfire rated interact when installed in proximity to one another as a building system?
2. To what extent will common building occupiers' possessions, located on the exterior of a structure or adjacent to a building, compromise the effectiveness of AS3959 when faced with flame and radiant heat impacts during a bushfire event?
3. What construction requirements are needed on the 'lee side' of the building when the building is exposed to direct flame contact from a bushfire fire front (BAL FZ)?

Project description

Across Australia, AS3959 provides national site assessment and construction requirements for buildings in bushfire-prone areas and is a key bushfire mitigation measure. This research aims to improve safety outcomes for building occupants during a bushfire and enhance community resilience.

While the science generally underpinning AS3959 was the best available in 1991 when the standard was introduced, amendments to the standard since then have drawn on limited new science, and there remain many knowledge gaps.

Such knowledge gaps include the performance and safety outcomes of various building design responses and combinations of materials allowed under the standard at each Bushfire Attack Level (BAL).

There is a recognised need to augment the current knowledge base with new robust independent research.

Accordingly, this research project aims to critically examine key assumptions and address knowledge gaps in the application of AS3959 with a focus on the construction requirements, providing an independent evidence base to inform improvements.

The findings will support nationwide policy development and strengthen planning and building systems that regulate development on bushfire-prone land, ensuring AS3959 continues to serve as an effective bushfire mitigation measure.

This research is proposed across three key focus areas:

1. The performance of building elements compliant with AS3959 when combined in different configurations and at different exposure levels (BALs) including high ember density and wind conditions.
2. The influence of common occupier's possessions located around a building impacted by bushfire on the performance of building elements compliant with AS3959 (i.e. the increased fuel load, residence time, residual flaming and residual heat from common possessions around a building such as doormats and furniture).
3. Flame wrap impacts around buildings in the flame zone due to wind flow (i.e. convective and differential forces) and construction considerations in response, particularly on the leeside of the building.

Expected outputs

The results of this research will underpin policy relating to the application of AS3959 that guides housing development on bushfire-prone land.

In addressing the key research areas listed above the proposed research program should:

1. Identify potential limitations in the testing and construction requirements of AS3959 and standard methods of construction.
2. Design of a testing regime(s) intended to provide an evidence basis for improved construction outcomes. This testing regime may be at various scales e.g. small-scale wind tunnel experiments and/or full-scale testing of building performance against fully developed fire scenarios.

Specific areas for investigation should include but are not limited to:

- the performance of common materials when combined in standard methods of construction eg. when combustible decking interfaces with combustible cladding material or the effect of combustibles on the inside of windows
- effect of furnishings and other combustibles adjacent to building elements of different types, materials and configurations
- the assumptions around shielding (reducing the BAL to BAL-40) on the lee side of a building in BAL-FZ
- the impact of different methods of construction on recovery and how standards might better support recovery post exposure to bushfire
- the cost versus bushfire performance of different methods and materials of construction.

Core outputs

- A literature review and engagement with industry, fire authorities and regulators to determine perceived limitations and potential improvements to bushfire construction requirements
- A report detailing research findings and recommendations relating to the application of AS3959 construction requirements and testing standards to reference AS 1530.81 (radiant heat – BAL-12.5,19, 29 and 40) and AS 1530.8.2 (flame zone – BAL-FZ)
- A set of data and ancillary information from experiments to be made available for further analysis
- A final report – including identification of future research opportunities
- Stakeholder presentation/s
- At least two academic publications in high-ranking international journals
- Please detail other innovative outputs that your team can deliver to address the outcomes below.

Additional outputs

- Project plan and plain language statement
- Quarterly progress reports
- Project evaluation report
- Relevant communications outputs including but not limited to a presentation and a poster

Collaborative approach

Researchers are expected to undertake the research using a collaborative approach to assist in the translation and transfer of knowledge to end-users and to ensure the project meets their needs. Researchers are encouraged to outline their approach to ensuring effective collaboration which could include embedding researchers within end-user organisations for a period of time.

Anticipated outcomes

It is acknowledged that natural hazard emergencies are expected to continue to become more complex, more unpredictable and more difficult to manage. Therefore, core research that proactively validates or challenges legislative and/or policy mitigation measures must continue to be pursued.

Accordingly, this project will provide invaluable information for construction in fire-prone communities. It is intended that the research will immediately be useful, actionable and directly lead to better decision making to save lives and protect communities nationwide and could potentially save thousands of dollars from the average build of homes on bushfire-prone land.

Underpinning land use planning policy research for bush and other fires demands strong scientific evidence that is regularly challenged and validated to deliver solutions that enable communities to be safer, more resilient and more sustainable in the face of bushfire.

Should the results of this research suggest that changes to the assumptions within AS3959 are justified, then this research would be provided to the AS3959: oversight Committee: FP-020 (Construction in Bushfire Prone Areas) for their consideration in their regular review of this Australian Standard.

The updated knowledge base from this work will be shared sector-wide through conferences, papers and reports, and be integrated into bushfire management systems with industry standards being reviewed and updated as needed.

In addition, since AS3959 is based on retrofitting bushfire protection measures to standard approaches to construction, research into alternative and novel approaches to construction are likely to identify alternative cost-effective methods for constructing bushfire adaptive buildings.

Quality control and reporting

The project will be overseen and supported by a Project Management Committee (PMC) comprising the Principal Researcher, a Centre representative, and at least one stakeholder representative. Composition of the PMC will be determined in consultation with the Principal Researcher.

Reports

The Centre expects that the outputs delivered by this project will meet the highest scientific standards and will be suitable for publication on the Centre website and in industry newsletters, as well as in high-quality scientific journals.

The successful research organisation/s must co-develop with end-users a project plan and project summary using the Centre's templates. The project summary should explain in plain language what the project is about, what questions it intends to answer and describe the expected practical outputs that will make use of the research findings. The project plan must be approved by the PMC and will become an attachment to the contract.

Reports (and any supporting material) must be submitted to the PMC's satisfaction and will be subject to review by PMC members. The project team will be required to ensure an internal peer review process is undertaken prior to the final report being submitted.

Milestone reporting

The project team must report all milestone deliverables and engagement activities into the Centre's Project Management System. This will include sufficient justification for the completion of milestones to the satisfaction of the PMC and the Centre.

Communication

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

- regular PMC meetings will be held
- the project team will use a consultative approach, documented in quarterly reports
- the Principal Researcher will give periodic presentations to key stakeholder groups to gain critical feedback on project milestones.

Additional quality control processes may be agreed as part of the project planning process.

Contractual arrangements

A copy of the Research Services Agreement, the proposed form of contract for the purposes of this project, can be found here.

The Centre reserves its rights to make amendments to the form of contract.

This agreement should be reviewed by applicants as part of the EOI submission.

If you would like to request amendments to any of the terms and conditions set out in the proposed form of contract, details of the proposed changes and the reason the changes are requested must be included in the EOI submission form. Requests for any changes will be at the sole discretion of the Centre.

Selection as a shortlisted or preferred provider does not give rise to a contract (express or implied) between the shortlisted or preferred provider and the Centre for the supply of goods or services. No legal relationship will exist between the Centre and the shortlisted or preferred provider until such time as a binding contract in writing is executed by both parties.

In the case of consortiums, the Centre requests that one consortium member be nominated as Lead Research Provider and take responsibility for subcontracting other parties.

Submitting an Expression of Interest

Application and review process

Project selection and approval will be a two-stage process. The first stage is evaluation of the EOIs that are received. The second stage is development of a project proposal, where a preferred provider will be selected and offered an opportunity to co-develop a detailed project proposal with input from key stakeholders.

Key dates

27 February 2026	Call for EOIs opens
18 March 2026	Online project briefing
10 April 2026	Due date for EOIs

Submission requirements for this EOI

Project teams responding to this EOI are required to submit their response using the Centre's EOI submission form and Budget Template. Submissions must include:

- a statement of capability (max 600 words), including the proposed contributions of each research team member to the project
- a statement (max 400 words) about the diversity of the project team
- a statement (max 400 words) about the project's inclusion and respect of First Nations peoples, philosophies, cultures, rights and/or knowledges
- an outline (max 1000 words) describing how the project team intends to approach the project, strategies for effective collaboration and an indicative methodology
- an indicative schedule of work and interim milestones/project outputs as described in this document
- a proposed project budget in line with the budget envelope provided, including details of any in kind contribution from research organisation/s – a detailed budget to be provided using the downloadable Budget Template provided on the Centre's website
- a clear statement (max 400 words) describing the outcomes that will be delivered for this project and how they will be used by stakeholders
- a clear statement (max 400 words) describing the outputs that the proposed approach to this project will deliver and how the findings could translate into practice
- a statement (max 500 words) demonstrating the project team's relevant industry and stakeholder engagement
- a risk management statement (max 500 words)
- any requested changes to the Centre's proposed form of contract
- up to two-page CVs for each proposed project team member.

Additional information

Frequently asked questions

Additional information provided to individual respondents will also be published on the Centre's 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.

Online project briefing

An online webinar scheduled for **2:00pm AEDT 18 March 2026** will provide a more detailed briefing of the project and the opportunity for interested parties to pose specific questions.

Registrations for this webinar can be made via the project page on the Centre's website. Once completed, a recording of this webinar will be posted to the website to ensure all interested respondents have access to this information.

Evaluation criteria

After the closing date, the Centre will review submitted EOIs against the evaluation criteria below. The evaluation criteria provide an indication of those matters that should be included in the EOI and supporting material – details are provided in the table below.

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 Centre's needs. The Centre reserves the right to invite any other specific researchers as it sees fit to submit proposals before or after the closing date.

Mandatory evaluation criteria

- Registered Australian Business: The Respondent holds a valid Australian Business Number (ABN) or Australian Company Number (ACN)
- Public Liability Insurance: The respondent has or will obtain appropriate insurance
- Specific research capability: The program of work must include a detailed description of the physical testing elements of the project.

Evaluation criteria	% weighting
Research capability: the capacity and capability to deliver an excellent research project in an Australian environment	20
Project approach: a demonstrated understanding of the project requirements and a proposed project approach and methodology that is appropriate, feasible and robust Relevant outline of a collaborative approach to assist in the translation and transfer of knowledge to end-users and to ensure the project meets their needs.	25
Project outcomes and outputs: demonstrate a high-level understanding of the intentions of the project and how outputs/outcomes translate to practice	15
Industry engagement: strong track record of industry engagement with the ability to support and influence Australian disaster management at a national or state/territory level through interaction with key stakeholders	15
Value for money: value with money refers to an application representing an efficient, effective, economical and ethical use of Centre resources. Consideration of the relevant financial and non-financial costs and benefits of each application including, but not limited to: - the quality of the application and activities represented by the technical assessment - fitness for purpose of the application in contributing to Centre objectives - the potential Research Provider's relevant experience and performance history - whole of life costs (in- kind , other costs, risks, legal risks)	25