



## Expressions of Interest Open for a New Research Project

Dear Researchers,

The Bushfire and Natural Hazards Cooperative Research Centre (CRC) funds a suite of projects through its Tactical Research Fund (TRF). The TRF provides an avenue of funding for short term research projects that fill a need for CRC partner agencies. The CRC is seeking Expressions of Interest (Eoi) for one such project.

### **Preparing Emergency Services for Operations in a Climate-Challenged World**

Details of this project and instructions on the requirements of the Eoi are outlined in the attached documents. Responses are required by **11:59pm Friday 5 June 2020** and a decision on preferred supplier will be made shortly thereafter.

The Call for Expression of Interest will be placed on our web page under the heading 'Opportunities'. In the event of a consortium approach being adopted we expect that one of the parties would be nominated as the lead research organisation and have overall responsibility for project delivery.

Attached are the CRC's standard Terms and Conditions, 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 /amendments should your organisation be selected to undertake this piece of work. These Terms and Conditions are based on the CRC's obligations to deliver research according to our agreement with the Commonwealth of Australia.

I look forward to seeing your responses to this Call for Eoi and look forward to working with you on the project in the coming months.

If you have any questions regarding this Call for Eoi, please contact Nick Mahony ([nicklaus.mahony@bnhcrc.com.au](mailto:nicklaus.mahony@bnhcrc.com.au)).

A copy of this Call for Eoi has also been placed on the CRC website and any interested parties are welcome to put forward a proposal.

Yours sincerely,

Dr John Bates  
**Research Director**  
**Bushfire and Natural Hazards CRC**

**Attachment 1:** Call for Expression of Interest

**Attachment 2:** CRC Terms and Conditions

# Project: Preparing Emergency Services for Operations in a Climate-Challenged World

## Background

Fire and emergency services agencies need to adapt, and to be prepared for a future where the changing climate will influence the services they deliver, and how they deliver those services.

The aim of this project is to document the current state of knowledge of climate change predictions and projections and to use that information to understand and describe the impact(s) of those changes on the operations of emergency services agencies.

This information will then be used to develop a suite of scenario-based tools that can be used by emergency service agencies across Australia and New Zealand to aid their strategic planning and associated preparedness activities. The ultimate aim is to allow those agencies to test plausible futures against their agency's capabilities.

## Research Question

How can fire and emergency service agencies develop and use forward-looking (and linked) climate and social change scenarios to best prepare their businesses so that they can continue to provide effective services in a climate-challenged world?

## Research Project

Based on a review of the available literature on climate change, and the possible impacts of those predicted changes on communities and community interactions, the project is expected to develop an approach that will allow the development of a set of relevant, forward-looking climate scenarios that incorporate the social and community impacts linked to those scenarios. The scenarios will be suitable for fire and emergency services agencies to use as part of preparing their businesses to continue providing effective services in a climate-changing world.

This project has 3 parts.

**Part 1** is a literature review that will consolidate available knowledge on:

- Predicted climate change relevant to the work of emergency services, including likely changes to weather systems<sup>1</sup>;
- The likely changes in communities and community interactions that would be expected with adaptation to a changing climate;
- Predicted changes to forests, shrublands and grasslands resulting from a changing climate;
- Other relevant areas, including climate-adaptive changes to education and health systems; and
- Any gaps in the available evidence that limits the ability of the research team to provide detailed projections of the future state of the environment.

**Part 2** is focused on developing a methodology that can be used to develop climate future scenarios, and to use that methodology to develop a set of plausible climate future scenarios<sup>2</sup> that:

- reflect an agreed set of climate conditions; and
- as a set, include futures that are relevant to:
  - Urban firefighting services
  - Rural firefighting services
  - Land management agencies
  - State emergency services

For clarity, scenario planning as described in this document involves the development and use of representations of plausible futures and pathways to inform and inspire strategic decision making and planning in a wide range of organisational and policy making contexts<sup>3</sup>.

The purpose of the scenarios is to aid emergency services agencies in identifying risks, opportunities and strategic options in the context of complex and uncertain future conditions and events.

The scenarios are required to identify feasible futures that could be experienced in Australia and New Zealand in 2030.

This element of the project will require:

- Providing a robust and tested methodology for developing the scenarios; and
- Creating a minimum of 12 climate future scenarios that reflect the range of operating environments expected to be encountered by emergency service agencies in Australia and New Zealand.

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<sup>1</sup> See, for example <https://www.iag.com.au/sites/default/files/documents/Severe-weather-in-a-changing-climate-report-011119.pdf>

<sup>2</sup> No individual scenario is expected to cover all of the response agency types, but the scenarios as a set should include multiple scenarios that are relevant to each of the response agencies.

<sup>3</sup> Scenarios for Climate Adaptation Report, Victorian Centre for Climate Change Adaptation Research, June 2011

**Part 3** will demonstrate how to use the scenarios developed in Part 2. This will allow emergency service agencies individually, or as a group, to explore what the plausible future in the scenario would mean for their operations, and what services and capability development they would need to have, to meet their emergency services obligations.

This will include:

- Providing a guide on how to use the scenarios to influence strategic and operational planning and capability development;
- Providing worked examples of at least one scenario for each agency type (co-developed with a relevant emergency service agency), to demonstrate how to effectively use the scenarios to understand the implications of that scenario for strategic and operational planning; and
- A minimum of 3 workshops to demonstrate the development of scenarios, and how to use those scenarios to understand the implications of that scenario for strategic and operational planning.

## Research Deliverables

### Core Outputs

1. A written and peer-reviewed literature review as described in Part 1.
2. A series of at least 12 plausible climate future scenarios, the scope of which is agreed with the CRC and Supporting Organisations prior to the commencement of Part 2.
3. A methodology for developing plausible climate future scenarios.
4. A guide for the use of the plausible future scenarios to guide discussion on strategic and operational planning and capability development in emergency service agencies.
5. Worked examples (case studies) of at least one scenario for each agency type.
6. A minimum of 3 workshops with emergency service agencies to demonstrate how to develop plausible future scenarios, and how to use those scenarios in strategic and operational planning. The location and timing of the workshops will be agreed with the CRC and Supporting Organisations prior to the commencement of Part 3.
7. Final report summarising the project research activities.

### Additional Outputs

1. Quarterly report detailing project progress for the quarter, any risks and issues emerging and an end-user (sponsor) statement.
2. A CRC Hazard Note (a CRC Research Publication) on the outcomes of the project.
3. A poster for the CRC Research Forum at the AFAC Conference 2021.

## Supporting Organisations

This research project is supported by emergency service agencies from across Australia:

- ACT Emergency Services Agency
- Bureau of Meteorology
- Country Fire Authority, Victoria
- Country Fire Service, South Australia
- Department of Fire and Emergency Services, WA
- Department of Home Affairs (Emergency Management Australia)
- Department of Biodiversity, Conservation & Attractions, Western Australia
- Fire and Emergency New Zealand
- Fire and Rescue NSW
- Metropolitan Fire Brigade, Victoria
- Metropolitan Fire Service, South Australia
- Northern Territory Emergency Service
- NSW Rural Fire Service
- NSW Environment Protection Authority
- NSW State Emergency Service
- Queensland Fire and Emergency Services
- South Australian State Emergency Service
- South Australian Department of Environment and Water
- Tasmania Fire Service
- Emergency Management Victoria
- Victoria State Emergency Service

## Engagement with Emergency Service Agencies

The CRC will work with the project team to ensure timely access to, and input from, representatives of emergency services agencies for this project.

## Managing Implications of COVID-19 Pandemic Restrictions

In responding to this Call for Expression 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 any proposal.

## Quality Control & Reporting

### **Final report and other project reports for external dissemination**

It is the expectation of the Bushfire and Natural Hazards CRC that the material delivered as part of this project will meet the highest scientific standards and will be suitable for publication on the CRC website.

It is a requirement of the project, that reports (and any supporting material) are submitted to the satisfaction of the CRC. To ensure all reports meet the CRC's expectations, they will be subject to CRC review. Research organisations are required to ensure an internal peer review process is undertaken and end-user approval has been sought prior to any draft report submissions to the CRC.

Before the final report is submitted to the CRC for approval it must also have been:

- Through an independent peer reviewer approved by the Bushfire and Natural Hazards CRC, Project Manager; and
- Professionally proof-read and copy edited.

These steps must be arranged by the research organisation and costed as part of the project budget and completed within the project timeframe.

Reports that have not been independently peer reviewed and professionally proofread and copy edited will not be considered final. A copy of the independent peer review and the researcher response to any comments must be provided to the CRC.

### **Milestone Submission**

The project team must report all milestone deliverables into the CRC's Project Management System. This will include sufficient justification and end-user (Sponsor) approval for the completion of milestones to the satisfaction of the CRC.

### **Communication**

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

- The project team will utilise a consultative approach as part of their engagement strategy with end-users and sponsor throughout the life of the project; and
- The research team leader will give periodic updates and/or presentations (e.g. monthly, quarterly) to key stakeholder groups (for example, AFAC Climate Change Group) 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 CRC as part of the planning process.

## Submission Requirements

Submissions should be sent to [office@bnhcrc.com.au](mailto:office@bnhcrc.com.au) no later than **11:59pm Friday 5 June 2020** (please cc [nicklaus.mahony@bnhcrc.com.au](mailto:nicklaus.mahony@bnhcrc.com.au)).

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

- A project proposal (4 - 6 pages) clearly addressing the requirements of the specifications set out in this document and the proposed approach;
- Clearly articulated project objectives;
- Description of what is both in and out of scope;
- Assumptions and constraints;
- Proposed outcomes and description of the deliverables;
- 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 organization;
- Risk management plan (i.e. COVID-19 risks); and
- 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.

## Contractual Arrangements

This project will be delivered under an Agreement between the research organisation and the Bushfire and Natural Hazard CRC. A copy of the 'Terms and Conditions' the CRC will contract to the successful research organisation is provided with this document. The 'Terms and Conditions' should be reviewed as part of the EoI process.

These are standard 'Terms and Conditions', and any changes will be at the sole discretion of the CRC. If you would like to request amendments to any of the 'Terms and Conditions', details of the proposed changes and the reason for changes must be included with the submitted response. In considering the 'Terms and Conditions' and proposed changes, please note the CRC are subject to the requirements of the Bushfire and Natural Hazards CRC Commonwealth Agreement and that ownership of all project IP vests with the CRC. We advise that (i) no changes to provisions relating to the ownership of Intellectual Property will be considered by the CRC and (ii) no changes can be made to the publication approval processes.

## Additional Information

- This project must be completed within 12 months from the date on which the contract is signed. The project should be scheduled to commence no later than June 2020.
- The maximum funding for the project is \$100,000 (ex GST).
- Financial and in-kind contributions from external parties will be looked on favorably by the CRC's Tactical Research Fund proposal review committee.
- The CRC reserves the right to withdraw the Expression of Interest if no acceptable responses are received.

## TERMS AND CONDITION

### 1 DEFINITIONS

- 1.1 "Background IP"** means any IP that exists prior to or is created independently of this Agreement that a party has agreed to contribute to the Services;
- 1.2 "Contract Material"** means all material, documents, equipment, software, information, data and the deliverables created by the Contractor as a result of or in connection with or otherwise arising from the performance of the Services;
- 1.3 "Delivery Dates"** means the dates for delivery of Contract Material as set out in the Service Details;
- 1.4 "Fee"** means the service fee set out in the Service Details;
- 1.5 "Intellectual Property Rights" or "IP"** means confidential information, copyright, computer layouts and programs, discoveries, inventions, patents, registered and unregistered trademarks, registered and unregistered designs, trade secrets and know-how;
- 1.6 "Moral Rights"** has the meaning ascribed to it under s189 of the Copyright Act 1968 as amended;
- 1.7 "Service Details"** means the document preceding and attached to these terms and conditions;
- 1.8 "Services"** means the goods and/or services to be provided by the Contractor to Bushfire and Natural Hazards CRC described in the Service Details;

### 2 SERVICES

- 2.1** The Contractor will or will procure the Contractor Specified Personnel to carry out the Services and provide all Contract Material in accordance with the Service Details and these Terms and Conditions.
- 2.2** In providing the Services the Contractor guarantees that the Services:
- (a) will be carried out with due care and skill;
  - (b) will be fit for the purpose that Bushfire and Natural Hazards CRC has made known to the Contractor; and
  - (c) will be provided by the Delivery Dates or as agreed in writing.
- 2.3** The Contractor will:
- (a) liaise with the Bushfire and Natural Hazards CRC Contact in relation to the performance of the Services;
  - (b) comply with any reasonable directions given by the Bushfire and Natural Hazards CRC Contact;
  - (c) comply with all policies, procedures and directives of Bushfire and Natural Hazards CRC so far as they are made known to the Contractor;
  - (d) comply with all applicable standards, laws and regulations.
- 2.4** Bushfire and Natural Hazards CRC agrees to make available to the Contractor any information, materials or Background IP necessary to carry out the Services.
- 2.5** Bushfire and Natural Hazards CRC reserves the right at any time, to alter, qualify or reject upon written notice to the Contractor any Contract Material which is not to Bushfire and Natural Hazards CRC's satisfaction, but shall not exercise its discretion unreasonably. Rejected Contract Material shall be promptly corrected by the Contractor at the Contractor's expense. Where the Contractor fails to remedy or resupply the Services within

the time specified in the notice Bushfire and Natural Hazards CRC may terminate this Agreement immediately by notice in writing to the Contractor.

- 2.6** The Contractor may not sub-contract the Services or any part thereof without the prior written approval of Bushfire and Natural Hazards CRC.

### 3 INTELLECTUAL PROPERTY

- 3.1** Any material or Background Intellectual Property provided by Bushfire and Natural Hazards CRC or the Contractor for the Services shall remain the property of the contributing party. The parties shall return all such material or Background IP to the other party upon completion or termination of the Services.
- 3.2** The Contractor grants to Bushfire and Natural Hazards CRC a non-exclusive, permanent, royalty free, worldwide licence with the right to sub-licence to use, adapt, alter, copy and reproduce the Contractor Background IP to the extent required for Bushfire and Natural Hazards CRC to use in the Services and with the Contract Material.
- 3.3** The title to and Intellectual Property Rights in the Contract Material shall vest immediately upon its creation in Bushfire and Natural Hazards CRC.
- 3.4** The Contractor shall:
- (a) do such things as may be required to effect the vesting of such title in Bushfire and Natural Hazards CRC; and
  - (b) execute or procure the execution of any document or do or procure the doing of anything requested by Bushfire and Natural Hazards CRC to assign to Bushfire and Natural Hazards CRC absolutely and unconditionally ownership in Intellectual Property Rights derived from the Contract Material or resulting from the Services throughout the world including copyright in all reports, plans, sketches; drawings, designs computer programs or any of those reproduced or created by the Contractor in performing the Services.

### 4 MORAL RIGHTS

The Contractor will grant on behalf of itself and will and will procure from its personnel any consents relating to their Moral Rights that are required by Bushfire and Natural Hazards CRC to allow Bushfire and Natural Hazards CRC to use or modify the Contract Material without any obligation for attribution of authorship.

### 5 INSURANCE

The Contractor agrees that it will at its own expense effect and maintain during the term of this Agreement appropriate insurance cover that a responsible entity would put in place to cover the risks associated with the Services including cover for public and products liability, workers compensation and professional indemnity insurance.

### 6 CONFIDENTIALITY

- 6.1** Each Party will keep confidential and only use for the purposes of the Services the other party's confidential

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information unless written approval is obtained. Each Party may disclose such confidential information to its employees and agents as necessary for the performance of the Services provided that such employees and agents are instructed as to the confidential nature of the information.

**6.2** The Contractor will keep the Contract Material confidential and will not publish or present in written form or orally the Contract Material without the express written permission of Bushfire and Natural Hazards CRC.

### **7 PUBLICITY**

Neither Party shall use the name or logo of the other Party as a consequence of or in connection with this Agreement without the prior written permission of the other Party.

### **8 FEE AND PAYMENT**

**8.1** Bushfire and Natural Hazards CRC's obligation to pay the Fee shall be contingent upon the satisfactory performance of the Services and Bushfire and Natural Hazards CRC's acceptance of the Contract Material where applicable.

**8.2** Bushfire and Natural Hazards CRC will pay the Contractor upon receipt of a correctly rendered tax invoice and in the manner set out in the Service Details.

**8.3** If the Services provided by the Contractor are not satisfactory to Bushfire and Natural Hazards CRC the Contractor will either provide the Consultancy Services again at its own cost and expense or refund the Fee paid or payable for the provision of the Services.

### **9 RISK MANAGEMENT**

**9.1** The Contractor warrants that in providing the Services it will not infringe the Intellectual Property Rights of any person and that no Intellectual Property of any third party will be used or incorporated in the Contract Material.

**9.2** The Contractor releases and indemnifies Bushfire and Natural Hazards CRC from and against any loss or damage cost and expense (including the cost of defending or settling any action, claim or demand) arising from any negligent act error or omission by the Contractor in the provision of the Services or any breach of the warranties, terms and conditions of this Contract except to the extent that any loss, damage, cost or expense is caused by any negligent act error or omission by Bushfire and Natural Hazards CRC.

**9.3** The Contractor shall be responsible for all costs, damages, loss or liability and other matters relating to any of its employees, agents or sub-contractors including claims arising by virtue of injury, death or disability suffered by such employees, agents or sub-contractors.

### **10 TERMINATION**

**10.1** If either party commits a breach of this Agreement, the other party may request in writing that the breach be remedied, and if this is not done within 30 days of the request then the other party may terminate this Agreement immediately by notice in writing.

**10.2** Bushfire and Natural Hazards CRC may terminate this Agreement immediately by notice in writing if:

- (a) the Contractor becomes insolvent or a receiver, receiver-manager or liquidator is appointed over the affairs of the Contractor;
- (b) in the opinion of Bushfire and Natural Hazards CRC a conflict of interest arises for the Contractor in performing the Services; or
- (c) any of the Specified Personnel become unavailable to continue work under this Agreement and the Contractor is unable to secure a replacement acceptable to Bushfire and Natural Hazards CRC;

**10.3** Where this Agreement has been terminated under clause 10.1 or 10.2 the Contractor shall be entitled to pro rata payment for performance of Services undertaken and accepted by Bushfire and Natural Hazards CRC up until the date of termination.

**10.4** The Contractor shall not be entitled to compensation for any loss of prospective profits or other income or consequential losses.

### **11 UNAVOIDABLE DELAY**

No party will be responsible for performing an obligation under this Agreement where performance is prevented due to any circumstances beyond the reasonable control of that party. If such circumstances continue beyond 14 days either party may terminate this Agreement. Bushfire and Natural Hazards CRC shall be entitled to pro rata payment for performance of Services undertaken up until the date of termination.

### **12 CONCILIATION**

**12.1** If there is a dispute between the parties concerning this Agreement the disputing party shall give written notice specifying details of the dispute to the other party.

**12.2** If the dispute is not settled by agreement within 14 days of service of the notice the dispute will be referred to the Chief Executive Officer of Bushfire and Natural Hazards CRC, who will attempt to resolve the dispute by formal or informal mediation.

### **13 GENERAL**

**13.1** This Agreement constitutes the entire agreement between the parties, and may only be varied by written agreement signed by both parties.

**13.2** Should any provision of this Agreement be held by a Court to be unlawful, invalid or unenforceable the validity and enforceability of the remaining provisions shall not be affected.

**13.3** The Contractor and its Specified Personnel shall not by virtue of this Agreement be deemed to be employees of Bushfire and Natural Hazards CRC.

**13.4** The provisions of **Clauses 3, 4, 6, 7, 8, 10.3, 13.4 and 13.5** shall survive and be of full effect after expiration or termination of this Agreement.

**13.5** This Agreement will be governed by law of State of Victoria and the parties submit to the jurisdiction of the Courts of Victoria.

**13.6** Any notice to be given by either party will be in writing and forwarded to the other party either by post, facsimile transmission or electronic mail to the address indicated in the Service Details or such other updated address provided by a party.

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**13.7** The parties may sign and deliver this Agreement by electronic or facsimile transmission. Each party agrees that the delivery of the Agreement by electronic or facsimile transmission shall have the same force and

effect as delivery of original signatures and they may use such electronic or facsimile signatures as evidence of the execution and delivery of the Agreement by all parties to the same extent that an original signature could be used.