DFES Department of Fire & Emergency Services

Directive 3.5 – Bushfire

SOP 3.5.6 – Structural Triage

Download Field Guide

Introduction

1. Structural Triage in a bushfire context is the classification of buildings at risk of being impacted by bushfire according to a range of factors which influence the likely success of defensive tactics employed by fire crews during the incident. Structural triage is undertaken prior to the arrival of the fire front to ensure valuable resources are deployed against feasible tasks where they will have greatest effect – not dangerous or marginal causes. This procedure details the key criteria for assessing a structure and the ability to defend it and the map marking system that conveys this assessment to follow-up crews.

Procedures

2. **Assessing Structures.** Assessment of a structure and the ability to defend it is a simple analysis of the design and preparation of the structure and the capability of the resources assigned against the threat. All justifications for structural triage decisions are to be recorded in an Incident Diary or electronically to be disseminated to other crews, or back to Incident Management Teams (IMT) at Incident Control Centers (ICC) and recorded on the Web-based Emergency Operations Centre (WebEOC) and/or FESMaps as required.

Regions are encouraged to triage structures in high risk areas prior to the fire season and record on the appropriate response or emergency management plan.

The ability to defend a property is assessed according to six (6) key criteria as follows:

CRITERIA	NOTES
Construction	**Structures are to be assessed for the flammability of their construction materials.**
	Houses constructed of wooden weatherboards, roof frames and roof cladding are vulnerable to ember attack and will require greater defendable space and the commitment of greater resources than a similarly placed brick and tile dwelling.
Defendable Space	**Structures are to be assessed for the availability of space around the structure – where there are no vertical fuels through which the fire can be readily transferred to the structure.**
	A defendable space of 20 metres is advised as the minimum acceptable area which will permit safe defensive operations in support of a structure. However, this distance is variable under the influence of other key criteria. Non-flammable construction may permit a reduction in defendable space, whereas the siting of the structure at the top of a ridgeline may require a significant expansion of the defendable space. Key to assessing defendable space is an assessment of the anticipated fire behaviour and how that will be assisted or reduced by the aspect of the structure in relation to the bushland surrounds.

Vehicular Access	**Structures are to be assessed for their accessibility to firefighting appliances.**
	Structures that cannot be accessed by firefighting appliances are much less defendable. Awkward, lengthy access ways also present a significant risk to firefighters seeking to escape under duress. Heavily wooded entries should be assessed as requiring defendable space to ensure withdrawal routes will not be denied by the passage of the fire front.
Water Supplies	**An understanding of available water supplies is to underwrite all decisions regarding the ability to defend structures at the Rural Urban Interface (RUI).**
	Where water is restricted to mobile supplies, hard decisions will be required to prioritise where that finite resource is best used. Structures that have their own static supplies will be more defendable. Where reticulated supplies are available, the options will be much broader. Given the vulnerability of power during bushfires and the reliance of reticulated water on electric pumping stations, all reticulated supplies must be tested at the time of triage to ensure they are working. Depending upon the interface environment, crews whilst assessing properties must advise IMT's of the available water sources or of the additional water capabilities that should be deployed.
Personnel Resources	**An understanding of available personnel resources will assist in determining the number of structures that could potentially be safely defended.**
	The defence of a structure/s will require a minimum crew of four: 1 x OIC : 2 x Firefighters : 1 x Pump Operator/Communications
Preparedness	Conduct a review of the available protection systems and engineering solutions. For example, are pools, tanks, couplings, sprinklers, dams, portable pumps, etc. available and accessible? Have the property owners undertaken preparation activities? Is there allowable time for Firefighters to assist with basic ladder fuel removal from around vulnerable properties?. i.e. backyard furnishing's from up against property.

3. **Structural Triage Marking System.** Structures are to be assessed as un-defendable or possibly defendable. Structural assessments are to be recorded on maps and/or FESMaps for handover to Task Force/Crew Leaders assigned with responsibility for that area. Each structure is to be overlaid with a symbol indicating the assessment undertaken during the structural triage. Assessment is **subjected to the prevailing conditions** at time of defending structure.

Map markings to be used are as follows:

STRUCTURAL ASSESSMENT	SYMBOL	DEFINITION
Un-defendable		• It is unsafe for Firefighters to defend this property. • Firefighters will not defend this structure. • It is determined the structure is unlikely to survive a bushfire even if residents and/or firefighters stay to defend it. • This structure does not have sufficient defendable space, access or water supply (or other reason). • All who stay face an unacceptable risk of harm.
Possibly Defendable		Criteria could include some or all of the following: • The structure has defendable space; • The building construction materials appear sound and are non-combustible in nature • There is access and egress, including a turning circle; • There is a sufficient water supply available; and • There are enough firefighting resources to undertake defensive actions.

DFES utilises a **RUI Assessment Form** to assist with this decision making. Crews are encouraged to use this form (when appropriate) to record justification for their decision making.

DOCUMENT HISTORY

VERSION	DATE	DESCRIPTION of CHANGE
1.0	Jul 10	New SOP created. New sections created: • (All) **Source documents:** • Determining Structural Triage (Tasmania Fire Service) • Triage for Fireground (Tasmania Fire Service) • Rural Urban Interface Firefighting Techniques (Arnol, 2007) ***All listed SOP/SAP, now retired.***
1.1	May 12	Content Reviewed for currency through RUI WG and RUI procedures information video – no change
1.2	Nov 13	Updated Task Force/Strike Team terminology as per AIIMS definitions.
1.3	Apr 16	Inclusion of 6th assessment criteria to bring in-line with Directive 3.5 – Bushfire.
1.4	Aug 17	Update to consider electronic mapping or product to be accessible for recording on WebEOC.
2.0	Sept 18	Major review of document
2.1	Sept 19	Structural Triage marking system changed to two categories, Un-defendable and Possibly Defendable. Link to RUI assessment form added.