



NSW RURAL FIRE SERVICE



NEIGHBOURHOOD SAFER PLACES

GUIDELINES FOR THE IDENTIFICATION AND INSPECTION OF NEIGHBOURHOOD SAFER PLACES IN NSW

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1 Introduction

Reducing the impact of bush fires is a shared responsibility between government, emergency service organisations and the community. The community has an integral role to play in taking the steps to prepare their property for bush fire, to understand their risk and to be ready to implement their Bush Fire Survival Plan.

Part of this plan may include the relocation to a designated Neighbourhood Safer Place (NSP) **as a last resort option**. They are a place of last resort in bush fire emergencies. They are a last resort that may assist people when there is imminent threat of bushfire and they have no plan, or their planned options are no longer possible to be carried out.

An NSP is a building or an open space that may provide for improved protection of human life during the onset and passage of a bush fire. It is a location where people facing an immediate threat to their personal safety can gather and seek shelter from the impact of a bush fire. Their function is to provide a place of last resort for a person to seek shelter at during the passage of the bush fire front. An NSP forms part of a person's backup plan, to be utilised where their intended actions in the face of a bush fire are unable to be implemented or have failed. NSPs are designated by the NSW Rural Fire Service in consultation with relevant owners/ operators of potential NSPs including community stakeholders following the assessment process outlined in this document

This document provides the assessment criteria to identify and assess a NSP. Each site is to be assessed to ensure the NSP meets these criteria. Whilst an NSP will not eliminate all risks associated with a bush fire, it may increase a person's chance of survival. Key additions from the 2012/13 guideline include Principles for Site Identification and an emphasis on performance based assessment of sites, focussing on gaining safer outcomes rather than meeting prescriptive requirements. This approach allows for flexibility, local input and utilisation of expert judgement in determining the suitability of an NSP.

NSPs are not to be confused with Fire Refuges, Recovery Centres, Assembly Areas, Evacuation Centres or Informal Places of Shelter. Additionally, it is to be noted that each community faces different risks and has its own local needs. The intended occupation time of an NSP is from a couple of minutes to a couple of hours as the fire front passes. Once safe to exit, it is intended that occupants would return to their homes or move on to more official centres mentioned above.

1.1 Purpose and application of this document

The purpose of these guidelines is to provide the framework for the identification and assessment of an NSP in accordance with Part 3A of the *Rural Fires Act 1997*. These guidelines have been written as a technical document to ensure sites are identified and assessed against nationally endorsed framework for last resort options. These guidelines do require a level of knowledge and expertise with NSPs and emergency management when applying them.

1.2 Aim of establishing an NSP

The aim of a NSP is to provide a greater chance of survival for human life during the onset and passage of a bush fire. They are identified to be attended when an individual's other life safety options in a bush fire have failed or are no longer able to be safely attempted.

1.3 Objectives of an NSP

- Offer communities with considered and appropriate last resort bush fire options
- Provide sites that are constructed and/or located to enhance the chances of survival for people when faced with bush fire attack.
- Provide a last resort option for people if their primary bush fire survival options (such as leaving the area early) have failed.
- Aid the community in taking responsibility for their own bush fire survival, in the absence of emergency service personnel.

2 Background

The 2009 Victorian Bush Fire Royal Commission Interim report stated that people need a range of options to increase their safety in the event of bush fire. The Royal Commission identified various options (pg 209). They are:

- › Community fire refuges
- › Private Bush Fire Shelters
- › NSPs
- › Other Safer Locations

In identifying these options the Royal Commission noted that safer places *“may increase a person’s chance of survival, but still entail some risk, both in moving to them during a fire and while sheltering in them. They cannot be considered, nor should they be described as, ‘safe.’”* (p.209)

In NSW, Bush Fire Management Committees identify assets at risk of bush fire in an area, which will include human settlement and economic assets as well as culturally and environmentally significant locations. NSPs are considered one of these assets. All assets at risk of bush fire are included in a Bush Fire Risk Management Plan (BFRMP). A BFRMP is a strategic document and sets out a five-year program of coordinated multi-agency treatments to reduce the risk of bush fire to the assets. Treatments may include such things as hazard reduction, community education, property planning, ignition management and preparedness strategies.

The concept of personally identified safer places or other Safer Locations form part of NSW RFS’s community engagement and education strategies. It focuses on encouraging all people living in bush fire prone areas to have considered local options for shelter if their primary Bush Fire Survival Plan fails. This might include options such as a neighbour’s house that is better prepared and has greater setbacks from the bush fire hazard.

3 Definitions

Assembly Areas – A location where people facing an immediate threat to their personal safety or property can gather and seek shelter and some assistance with immediate personal needs prior to returning to their residences or attending more permanent shelter. It is likely that this centre would only operate for about 24 hours.

Assessment Criteria – The technical requirements a building or open space is assessed against for compliance as a Neighbourhood Safer Place.

Bush Fire Survival Plan - A Bush Fire Survival Plan is a document for anyone living in, or close to bushland. It guides one through important decisions that need to be made for one's safety if affected by a bush fire.

Community Fire Refuge – A designated building open to the public that can provide short-term shelter from the immediate life-threatening effects of a bush fire event.

Evacuation Centre – A location where people that have been evacuated or forced to leave their homes during an emergency and are unable to return or be accommodated elsewhere, can be accommodated for a short period. Immediate personal support needs would be provided for and it is unlikely that this centre would operate for more than 72 hours.

Expert Judgement – The judgement of an expert who has the qualifications and experience to determine if the NSP performance criteria have been satisfied by means outside those depicted in the acceptable solutions.

Principles for Site Identification – Site specific characteristics of a site that are to come under consideration by local stakeholders prior to nominating the site for assessment as a NSP.

Neighbourhood Safer Place (NSP) – An NSP is a building or a space within the community that has been designated as such by the Commissioner of the Rural Fire Service. It provides for improved protection of human life during the onset and passage of a bush fire. It is a location where people facing an immediate threat to their personal safety or property can gather and seek shelter from the impact of a bush fire.

Land adjacent – Land that a NSP does not occur on but it is reliant on to provide the required setback between the NSP and the bush fire hazard.

Other Safer Locations – A place that individuals have personally assessed and decided is a safer option relative to their situation.

Radiant Heat Flux – The radiant heat transferred from a fire onto an object through the air. The amount of heat flux flowing through a given area in a given time, usually expressed as kilowatts per square metre. The radiant heat produced by a 1 bar electric heater is the equivalent to 1kW/m².

Recovery Centre – A location where people who been affected by an emergency can obtain information concerning the recovery activities for the community and gain access to personal support and emergency recovery services. It is likely that this centre could operate for weeks or months following an emergency that has a significant effect on the community.

4 Legislation

NSPs in NSW are legislated by the *Rural Fires Act 1997* (the Act). The Act identifies the Commissioner of the NSW RFS as responsible for the programme in NSW.

Part 3A of the Act identifies the legislative framework for;

- › Designation of a NSP
- › Inspection of a NSP (and land adjoining a NSP) and certain actions as a result of inspections
- › Removal of the Designation of a NSP
- › The Register of NSPs
- › Signposting of NSPs
- › Protection from Personal Liability for Owners of a NSP

Section 100C of the Act identifies environmental approval options for carrying out bush fire hazard reduction work on a NSP or land adjacent to a NSP.

Section 54(3) of the Act outlines the requirement for a Bush Fire Management Committee to consider the number and locations of NSPs when preparing their Draft Bush Fire Risk Management Plan. This legislative requirement combines with *Bush Fire Coordinating Committee Policy 1/2008* and *2/2012 Notified Step for the protection of Neighbourhood Safer Places* to ensure where an NSP has been designated, it is to be maintained in accordance with these guidelines under the bush fire risk management planning process. All NSPs are included as human settlement assets when preparing a Bush Fire Risk Management Plan with appropriate treatments nominated for each individual site.

5 Limitations

NSP have limited capabilities and do not guarantee safety. People need to be aware of the following risks associated with NSPs as a Place of Last Resort:

- › Travelling to an NSP is inherently dangerous due to the potential for traffic congestion, poor visibility, fire activity, traffic accidents or fallen trees that may block the route;
- › People will need to use judgement and take appropriate action in regards to their personal safety while sheltering at a NSP
- › Sheltering at a NSP may result in physical and/or psychological trauma;
- › People are likely to experience extreme conditions including heat, high winds, fire noise, burning embers, radiant heat, smoke and ash while sheltering at an NSP;
- › Access into a NSP may not be facilitated by emergency services and cannot be guaranteed;
- › Emergency services may not be present;
- › There is no provision for pets;
- › There will generally be limited parking. Large numbers of vehicles may further compromise what little protection the area affords;
- › There may be limited capacity with no amenities (e.g. food, drink, toilets will not be provided).
- › There may be little or no capacity to help people with special needs.
- › There is likely to be no communication or first aid facilities at an NSP

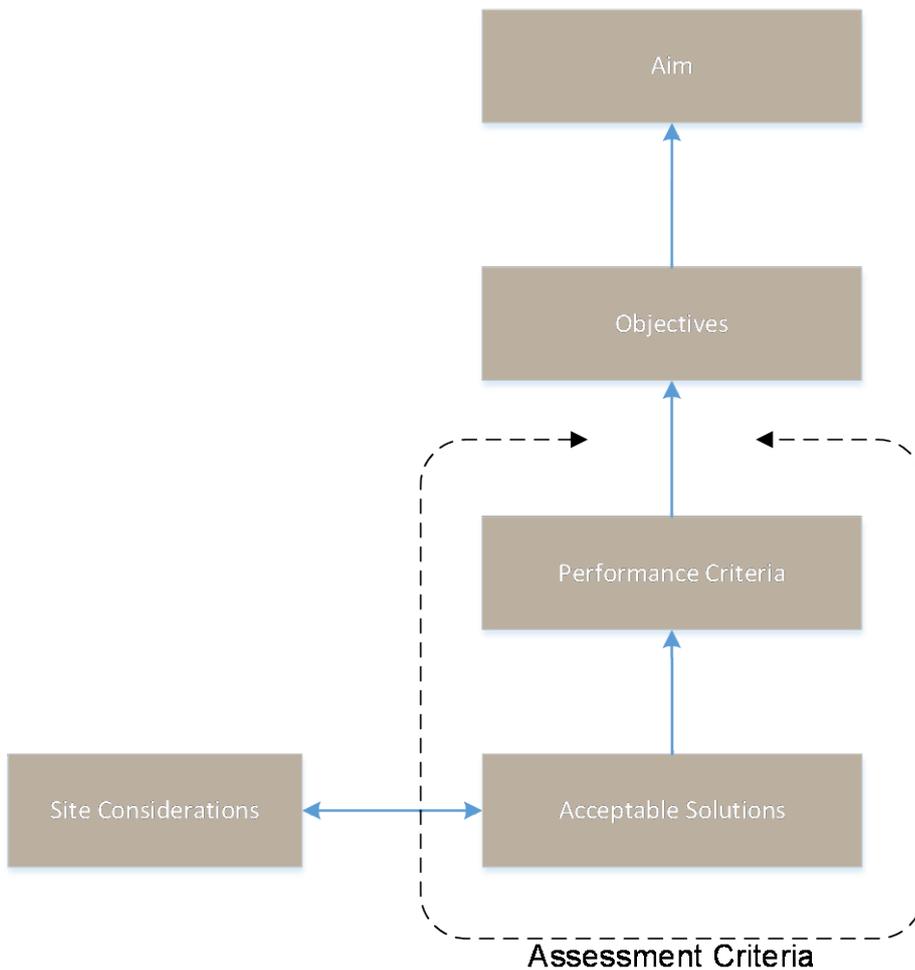
NSPs may not exist in all communities. In some instances there may not be a Neighbourhood Safer Place identified in a local area or close to homes. In these circumstances people should ensure they have identified other safer locations or that they have alternative back up options as part of their Bush Fire Survival Plan.

6 Assessing a Neighbourhood Safer Places

Before a site may be designated as an NSP, a formal assessment of the site is to be undertaken. This assessment is to be completed in line with the following criteria.

Hierarchy of Assessment

The Hierarchy of the NSP Assessment Process is as follows:



Each potential or existing NSP is to be evaluated against the Assessment Criteria of these guidelines. By meeting the Assessment Criteria, the site will directly meet the objectives and the aim of this document. Where a site does not meet the Assessment Criteria, it can be assessed on its merits against the objectives and/or the aim. As the owner of the program, the NSW RFS would judge the merits of each of these proposals.

Outside of the Assessment Criteria, this document identifies Principles for Site Identification that are to be taken into account when identifying a new NSP. These considerations ensure that features of and around an NSP site are taken into account in the identification stage. They detail issues and characteristics that are to be considered for each new NSP site prior to a formal assessment of the site.

7 Assessment Process

Assessment of an NSP is to be undertaken using the below criteria. The acceptable solutions provide a prescriptive path to achieving the performance criteria for all NSP sites in all situations. An evaluation of the Acceptable Solutions is provided in Appendix 1 of this document.

Where a site or proposal does not conform to the acceptable solutions, a performance assessment must be undertaken. Any site specific variations to meet the performance criteria must be accompanied by sufficient evidence and expert judgement that will be used to determine if the performance criteria has been adequately addressed. As the agency responsible, the NSW RFS will determine the worthiness of each site proposed as an NSP.

The Principles for Site Identification should be considered by local stakeholders for potential NSP sites. The performance of the site against these principles should then be used to determine whether the site should be nominated as an NSP. Further guidance on the Principles for Site Identification is provided in Appendix 2 of this document.

7.1 Assessment Criteria for a Neighbourhood Safer Place:

	Performance Criteria	Acceptable Solution
Radiant Heat	Building is located and constructed to enhance the chance for survival for humans in attendance from the radiant heat of a bush fire	Building is situated to prevent direct flame contact, material ignition and radiant heat levels of 10kW/m ² ; or Provide 139 metres separation distance from a bush fire hazard
	Open Space is located to enhance the chance for survival for humans in attendance from the radiant heat of a bush fire	Open Space is situated and maintained to prevent direct flame contact, material ignition and radiant heat levels of 2kW/m ² ; or Provide 310 metres separation distance from a bush fire hazard
Maintenance of the Site and the Land Adjacent	Area between bush fire hazard and the site is maintained to a level that ensures the radiant heat levels at the Building/Open Space meet the Performance Criteria for Radiant Heat.	The site and land adjacent to the site between the Building/Open Space and the bush fire hazard is managed land or maintained in accordance with NSW RFS document <i>Standards for Asset Protection Zones</i>

7.2 Principles for Site Identification

Consideration	Principles
Site Selection	<ul style="list-style-type: none"> › An NSP should provide a safer place for the community.
	<ul style="list-style-type: none"> › The community should be moving away from the bush fire hazard to access the NSP over short distances where possible.
	<ul style="list-style-type: none"> › NSP locations should reflect community need and bush fire risk.
Moving to a NSP	<ul style="list-style-type: none"> › An NSP should not be isolated from the community.
	<ul style="list-style-type: none"> › The community should not be impeded from reaching the NSP area in a bush fire situation.
Capacity	<ul style="list-style-type: none"> › Additional NSPs should be sought where it is likely current or potential NSPs cannot accommodate those likely to use it.
	<ul style="list-style-type: none"> › Demand for use of an NSP reflects a community's level of bush fire preparedness.

7.3 Inspection of NSPs and land adjacent.

The NSW RFS will conduct ongoing formal and informal inspections of the NSP site. Inspection of sites is undertaken with the intent to monitor sites at regular intervals. These assessments provide a definitive answer as to whether the NSP meets these guidelines.

When inspecting an existing NSP, this is to be undertaken against the Assessment Criteria only. Notwithstanding, an assessing officer may provide their opinion regarding the Principles for Site Identification and these will be passed on to local stakeholders for their consideration.

At the completion of an inspection, the results of the inspection shall be provided to the relevant Bush Fire Management Committee (BFMC) as an evaluation of an asset within their BFRMP. The BFMC shall consider any issues or actions identified in these inspections for implementation through their BFRMP.

Appendix 1: Assessment Criteria (Acceptable Solutions)

For a building or open space to be nominated as a NSP or an existing NSP to be assessed, the following assessment criteria of radiant heat and setback maintenance shall be used to determine whether the site meets the Acceptable Solutions.

Radiant Heat

A fundamental goal of a Neighbourhood Safer Place is to prevent people within the NSP from experiencing excessive levels of radiant heat. As seen in the limitations listed above, NSPs do not provide protection from all bush fire attack mechanisms, including low levels of radiant heat. An NSP, by location and inherent design properties, aims to limit this level of radiant heat to a level a human may survive.

The NSP program in NSW utilises the methodology developed in *Douglas and Tan (2005) Integrating Site Assessment and Performance Planning Outcomes for Bushfire Prone Areas*. When calculating the radiant heat levels to be experienced on or at an NSP, the standard design fire and weather conditions shown below are to be used in conjunction with site specific characteristics:

Fire Characteristic	Level
Fire Danger Index	120 (Catastrophic)
Flame Width	100m
Flame Temperature	1200K
Radiation Attenuation through Atmosphere	No
Flame Emissivity	100%

Applying these design fire and weather conditions to fuel loads will allow the radiant heat output of the bush fire fuel to be calculated. For the acceptable solutions, fuel loads for NSW derived from Watson 2011 with calculated 50% involvement of bark and canopy fuels are to be utilised unless site specific variations can be demonstrated. Where this research does not extend to the identified vegetation type, the fuel loads of Planning for Bush Fire Protection shall be the used.

Using these fire weather characteristics, the following radiant heat thresholds will be considered adequate to meet the acceptable solutions for a NSP. The distance threshold provides an accepted numerical outcome for all sites based on the Radiant Heat Threshold.

NSP Type	Acceptable Solutions Radiant Heat Threshold	Acceptable Solutions Distance Threshold
Building	10kW/m ²	139m
Open Space	2kW/m ²	310m

A 10kW/m^2 Radiant heat threshold for buildings is used as it is in line with the radiant heat requirements for construction materials as outlined in AS 3959-2009. At this radiant heat level, there are little to no specific requirements for building elements (windows, walls etc) in regards to resistance to radiant heat. Additionally, in accordance with Planning for Bush Fire Protection, it states that 10kW/m^2 of radiant heat is unlikely to threaten building elements (e.g. unscreened glass).

For Open Space, a threshold of 2kW/m^2 is identified in Table A3.1 of *Planning for Bush Fire Protection* as being below the threshold where an unprotected person would suffer pain after 1 minute of exposure. This threshold is also considered by Planning for Bush Fire Protection as being non-fatal. These characteristics reflect the life safety objective of NSP, and the limitation that they are not comfortable or completely safe facilities.

The mentioned design fire, weather and radiant heat thresholds provide a prescriptive framework for an NSP meeting the performance criteria. Where evidence and expert judgement is provided that overwhelmingly supports a alternate solution, these will be considered when judging the site on whether it meets the performance criteria.

Land Adjacent to a NSP

Where the bush fire hazard has been identified and the distance between the NSP facility and the hazard has been determined as adequate, it is essential that the area between the facility and the bush fire hazard is maintained appropriately. This area, known as “the setback” or “adjacent land”, is to be maintained in a way that does not bring the bush fire hazard closer to, and thereby compromise, the NSP facility. Consideration should be given as to whether the management practices of the day of inspection are likely to be ongoing.

The NSW RFS document *Standards for Asset Protection Zones* provides insight into suitable fuel management practices for the setback area.

Appendix 2: Principles for Site Identification

Through the Bush Fire Risk Management Plan, local stakeholders should take a landscape view to identify effective last resort bush fire survival options for the community. The issues or complexities affecting the community are not one size fits all parameters and will differ from site to site. Including prescriptive requirements in site selection for considering elements such as access and capacity, may see NSPs acceptable in their unique environment be discarded due to a rigid, blanket approach.

A set of principles for each relevant consideration has been provided in section 7.2 to guide local discussions about these elements. These provide a framework for the subjective approach to site characteristics and each should be considered prior to approving or dismissing a potential NSP location.

Site selection

An NSP is a place of last resort for the community in a bush fire. In order to meet this requirement, a physical assessment of the community and consultation with the community is to be undertaken to ensure the site selected is an appropriate NSP for the community.

A physical assessment of the community could include:

- › Identify the location of bush fire hazards in relation to the community.
- › Discussions of the likely primary options for the community when faced with a bush fire (e.g. leave early options to a larger or less threatened township.)
- › Describing ways these options could be compromised by bush fire.
- › Identifying likely fall back options should these primary options fail.
- › Consideration of nearby land uses for factors that could compromise a potential NSP site in a bush fire; for example flammables at a nearby petrol station.
- › Understanding existing land management practices and how these may affect a potential NSP site.

Consultation with local stakeholders will benefit this process by determining:

- › What community members plan to do as part of their Bush Fire Survival Plan .
- › Their current back-up options.
- › Where do they think an NSP would be best located.
- › How their preferred options would perform in a bush fire emergency considering smoke, embers and radiant heat.
- › Strategies they could implement to improve their preferred sites, such as upgrade buildings for ember protection.

Moving to an NSP

An NSP needs to be reachable by the community it serves in order to serve its purpose. An NSP that meets all the radiant heat and maintenance requirements of the Assessment Criteria may not be the most appropriate site if it is isolated from the community. This may be due to tracts of bushland hazard or unsuitable road or transport facilities that may hinder or prevent the community from reaching the site in a bush fire emergency.

As community needs and bush fire hazards vary considerably, there is no set standard for approaching an NSP other than considering holistically the risks people might face when travelling to the NSP. An NSP that is within the community may be considered more beneficial than one that requires further or more dangerous travel. Nevertheless, where there are no NSP alternatives other than one that may have less desirable arrangements, having a last resort option may be considered a better outcome than not having one at all.

Capacity to accommodate people

As with access, there are no set standards for the capacity of NSPs. The Building Code of Australia outlines floor space requirements for a variety of building uses. Floor Space requirements for facilities are based on people occupying the facility for a nominal time, under normal conditions without the life-threatening presence of a bush fire. As a place of last resort, a NSP should only be utilised for a short time, in a bush fire emergency when one feels their life is at risk. Using existing buildings or open spaces as NSPs is potentially a stark contrast to the normal use of the sites, and the amount of people who may use it relies on many factors external to the site itself.

Due to the range of variables at play, it is not possible to predict the amount of people likely to use an NSP. A building or open space that can hold the entire community may not be possible due to the size and availability of a facility required to hold the population nor may it not be considered necessary. A small facility in a high risk area may not be suitable to hold a large population, but it may be the only alternative available. Local stakeholders should look to the population size, availability of access and egress routes and the preparedness levels of the community to estimate if and/or how many NSPs are needed. If it is considered that a community could benefit from more NSPs, additional sites should be sourced.

Gaining Entry to an NSP

Once at an NSP site, the performance of the facility as a last resort shelter option may be reliant on the occupants gaining entry to the building or open space. In principle arrangements for sites that are regularly closed to be opened have been made through the State Emergency Management Committee. These arrangements should be discussed at a local level and processes implemented to ensure they have the best opportunity to be carried out in a bush fire emergency. It is recognised that even with these opening arrangements; it is possible that occupants may be left to gain entry to these sites by their own means due to the inability for emergency services to attend prior to the onset of the bush fire. While there are no specific criteria or principles for the gaining entry to an NSP, arrangements should be considered when selecting the location of a new site.