

Forest Industry  
Standard  
for  
Prescribed  
Silvicultural Burning  
Practice  
2009

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# Forest Industry Standard for Prescribed Silvicultural Burning Practice 2009

## **Introduction**

This document identifies a standard of practice for the conduct of prescribed silvicultural burning (PSB) in Tasmania. Within this document “prescribed silvicultural burning” means the planned burning of forest residues after harvesting or clearing to establish forest regeneration and plantations. This is commonly referred to as “regeneration burning” and “plantation establishment burning”. It includes the burning of residues from all types of forest harvesting regimes and plantation rotations. Other types of forest burning are included where the operation is subject to the Forest Practices Code and included in a Forest Practices Plan.

The standard is defined specifically for burning plans, public notification procedure, smoke management, operational risk assessment and the accreditation of persons responsible for the planning and / or conduct of PSB.

## **Background**

PSB is an essential part of the cycle of forest use and regeneration. It has been practised on a seasonal basis in Tasmania for more than fifty years. PSB and particularly the smoke it causes, is a seasonal catalyst for public debate. While concerted efforts are made to minimise the impacts of PSB on communities, periodic incidents such as escaped fires and severe smoke events do occur and provoke public concern.

The Forest Practices Authority has collated the best of current planning tools and guidelines into standards which have been endorsed by the Forest Practices Advisory Council.

The standard for each area within the scope of the PSB process is defined as a series of actions to be taken. Where appropriate implementation tools are currently in use, they are identified in this document.

## 1. Standard for PSB Planning

- 1.1 All PSB over 2 hectares will have an Approved Burning Plan. (This is a condition of a Fire Permit issued under Section 66 of the *Fire Service Act 1979*, as amended). This condition will apply to PSB regardless of whether or not a Fire Permit Period has been declared.

An “Approved Burning Plan” means a reproducible document which contains specific information:

- Business identifying information and contact details.
- Name(s) and contact details of the accredited PSB personnel responsible for the operation (see section 5).
- PSB type, identifier, area and precise location by map reference.
- Fire Permit Number (if applicable).
- Internal authorisation process (if applicable).
- Description of the type of fuel to be burnt and the Fuel Weight Index including any loadings for dryness and / or curing (see section 3).
- Prescribed weather and fuel dryness parameters.
- Description of measures taken to ensure containment of the PSB.
- Description of a suppression strategy for escapes from the PSB.
- Description of the lighting strategy with a map of the area.
- List of resources required at the site to conduct the operation.
- Provision to record measured site weather and fuel dryness.
- Provision to record time of lighting, fire behaviour and outcome.
- A public notification plan (see section 2).
- A smoke management strategy (see section 3).
- A PSB risk assessment (see section 4).
- A description of the risk management strategy to be implemented.

- 1.2 Tools currently available to implement this section of the standard are:
- 1.2.1 Tasmania Fire Service Burning Plan (will require additional fields inserted) example provided as Appendix 1.
  - 1.2.2 Forestry Tasmania Operational Plan for Burning Created or Modified Fuels (some fields may be deleted for general use) example provided as Appendix 2.

## 2. Standard for Public Notification

The standard acknowledges different levels of public interest and specifies notification protocols for each level:

**Public** notification at the regional level by means of the print media, not less than three weeks prior to the anticipated start of the PSB programme. Further notification on the day planned for PSB by means of public broadcast and business website (if available).

**Neighbour** notification in accordance with the conditions of a Fire Permit (*Section 18 Fire Service (Miscellaneous) Regulations 1996*). This will apply to PSB regardless of whether or not the Fire Permit Period is in effect.

**Specific Authority** notification. This means the police, Air Services Australia regional control towers and power utilities, notified on the day planned for PSB, where applicable.

2.4 **Proprietary interest** notification. Businesses which conduct PSB should establish a register of proprietary interest, based on their own pre-season community liaison efforts and feed-back from the public during the burning season.

Different levels of proprietary interest are recognised:

2.4.1 **Health.** This means persons within the anticipated fallout zone(s) who may be severely affected by smoke, have registered their interest and provided contact details.

2.4.2 **Commercial.** This means businesses within the anticipated fallout zone(s) which may be severely affected by smoke, have registered their interest and provided contact details.

2.4.3 **Events.** This means public events within the anticipated fallout zone(s) which may be severely affected by smoke, have registered their interest and provided contact details.

2.4.4 For notification purposes, proprietary interest registrants have the status of neighbours as defined under 2.2.

2.5 A business conducting PSB will maintain a notification log which records persons / organisations notified, time and date of notification and means of notification.

2.6 A tool which is currently available to implement this section of the standard is:

2.6.1 The Notification Checklist within the Forestry Tasmania burning plan (Appendix 2).

2.7 A relevant reference document is The Tourism & Forestry Protocol Agreement ([www.tourismforestryprotocol.com.au](http://www.tourismforestryprotocol.com.au))

### **3. Standard for Smoke Management**

3.1 The Coordinated Smoke Management Strategy Implementation Plan (CSMSIP) 2009 is the standard for smoke management. The strategy recognises the significance of and the effects and interactions between smoke impact factors. These include the type of fuel burnt, the condition of the atmosphere with regard to ventilation and inversion and daily smoke dispersion predicted by Bureau of Meteorology models.

3.2 The relevant references for this section of the standard are:

3.2.1 Coordinated Smoke Management Strategy Implementation Plan 2009 (Appendix 3).

- 3.2.2 Bureau of Meteorology F160 Forecast Aerological Diagram and Ventilation Index. (A brief explanation of this model, prepared by Forestry Tasmania's Fire Management Branch is provided as Appendix 3.1).
- 3.2.3 Bureau of Meteorology Smoke Dispersion Modelling. (A brief explanation of this model, prepared by Forestry Tasmania's Fire Management Branch is provided as Appendix 3.2).

#### **4. Standard for PSB Risk Assessment**

- 4.1 An Approved Burning Plan for PSB will include an operational risk assessment.
- 4.2 The Forestry Tasmania Burn Risk & Consequence Assessment model is the standard. The model is embedded within the Forestry Tasmania Burning Plan. For background information about the model see Appendix 4.

#### **5. Standard of Competency for persons planning and /or conducting PSB**

- 5.1 Persons responsible for planning and / or conducting PSB must be accredited as competent in the relevant area of prescribed burning practice.
- 5.2 A competent person **planning** PSB will be able to prepare an Approved Burning Plan in the course of which they will:
  - 5.2.1 Identify appropriate sites and conditions for PSB.
  - 5.2.2 Develop a site specific PSB objective with reference to appropriate silvicultural systems.
  - 5.2.3 Develop appropriate burning strategies for different objectives.
  - 5.2.4 Calculate a Fuel Weight Index for the area to be burnt.
  - 5.2.5 Within the scope of the plan, ensure the safety of persons, assets and the environment.
  - 5.2.6 Consult with other interested parties during the planning process.
  - 5.2.7 Specify the resources needed to implement a plan.
  - 5.2.8 Specify appropriate fuel dryness and weather parameters for safe and effective burning.
  - 5.2.9 Conduct a risk assessment for PSB.
  - 5.2.10 Develop a fire suppression plan for PSB.
  - 5.2.11 Specify the application of the Coordinated Smoke Management Strategy Implementation Plan 2009 to manage smoke from PSB.
  - 5.2.12 Prepare a public notification schedule for PSB.
  - 5.2.13 Monitor the implementation of an Approved Burning Plan.
  - 5.2.14 Record the results of PSB.
  - 5.2.15 Investigate and report on any incidents which arise from PSB.
- 5.3 A competent person responsible for **conducting** PSB will be able to:
  - 5.3.1 Identify and source an Approved Burning Plan for PSB.
  - 5.3.2 Obtain a Fire Permit, if required and any other authorisations for PSB.
  - 5.3.3 Implement the notification schedule attached to an Approved Burning Plan.
  - 5.3.4 Assemble and brief all personnel involved in PSB.
  - 5.3.5 Deploy the resources needed to conduct PSB.
  - 5.3.6 Monitor and record site weather in accordance with the Approved Burning Plan.

- 5.3.7 Conduct pre-burning safety checks of the site, personnel and equipment.
  - 5.3.8 Confirm and record that the site weather is within the parameters specified in the Approved Burning Plan.
  - 5.3.9 Apply the Bureau of Meteorology's Smoke Dispersion Forecasting tools to implement the Coordinated Smoke Management Strategy Implementation Plan 2009 and record details of the predictions and forecasts used.
  - 5.3.10 Implement the lighting strategy specified in the Approved Burning Plan.
  - 5.3.11 Monitor and record burning progress.
  - 5.3.12 Supervise personnel and ensure that safety is not compromised.
  - 5.3.13 Implement mop-up and patrol or suppression tactics as required.
  - 5.3.14 Conduct post-burn activities.
  - 5.3.15 Assess PSB outcomes.
  - 5.3.16 Report incidents.
- 5.4 Tools currently available to implement this section of the Standard are:
- 5.4.1 PUAFIR406A Develop prescribed burning plans (Appendix 5) and
  - 5.4.2 PUAFIR407A Conduct prescribed burning (Appendix 6) which are accredited units of the Public Safety Training Package.
  - 5.4.3 Forestry Tasmania's High & Low Intensity Burning Courses will deliver the Learning Outcomes of these Public Safety Training units.

## Appendices

**Appendix 1:** Tasmania Fire Service Burning Plan - Please contact the TFS (<http://www.fire.tas.gov.au/mysite/>)

**Appendix 2:** Forestry Tasmania Burning Plan - This Appendix is the intellectual property of Forestry Tasmania. Please contact Forestry Tasmania for further information.

**Appendix 3:** Coordinated Smoke Management Strategy Implementation Plan 2009 (attached below).

**Appendix 3.1:** Forestry Tasmania “Using the Bureau of Meteorology’s F160 Aerological Diagram to predict Temperature Inversions”. This Appendix is the intellectual property of Forestry Tasmania. Please contact Forestry Tasmania for further information. For further information on F160 calculations or Bureau of Meteorology's smoke modelling forecasts please contact the Bureau of Meteorology.

**Appendix 3.2:** Forestry Tasmania “Using the Bureau of Meteorology’s Smoke Dispersion Model”. This Appendix is the intellectual property of Forestry Tasmania. Please contact Forestry Tasmania for further information. For further information on F160 calculations or Bureau of Meteorology's smoke modelling forecasts please contact the Bureau of Meteorology

**Appendix 4:** Prescribed Silvicultural Burning risk Assessment Model. This Appendix is the intellectual property of Forestry Tasmania. Please contact Forestry Tasmania for further information.

**Appendix 5:** PUAFIR406A Develop Prescribed Burning Plans (attached below).

**Appendix 6:** PUAFIR407A Conduct Prescribed Burning (attached below).

## Glossary

**Prescribed Silvicultural Burning (PSB)** means the planned burning of forest residues after harvesting or clearing to establish forest regeneration and plantations. This is commonly referred to as “regeneration burning” and “plantation establishment burning”. It includes the burning of residues from all types of forest harvesting regimes and plantation rotations. Other types of forest burning are included where the operation is subject to the Forest Practices Code and included in a Forest Practices Plan.

**Coordinated Smoke Management Strategy (CSMS)** means a plan to equitably distribute the smoke absorbing capacity of an airshed between fire users on the basis of atmospheric conditions including predicted smoke plume dispersion.

**Coordinated Smoke Management Strategy Implementation Plan (CSMSIP)** means an operational plan which describes the implementation of CSMS.

**Population centre** means cities and towns shown on the Tasmania 1:500,000 map.

**Airshed Assumed fuel weight index Capacity matrix (AAC)** means a table which apportions units of fuel weight according to the Ventilation Index, predicted inversion height and predicted smoke plume dispersion for an airshed on a burning day.

**Fuel Weight Index (FWI)** means a numerical value assigned to an area of PSB on the basis of fuel type.

**Ventilation Index** means a numerical value which reflects the capacity of the atmosphere to disperse pollutants.

**Inversion Height** means the vertical height in metres above sea level at which a layer of warmer air will trap rising smoke. For the purpose of the CSMS this is divided into two classes: above 1500m, which is considered favourable and below 1500m which is considered unfavourable.

**Smoke plume dispersion** means the direction and spread of smoke on a lateral plane in the atmosphere.

**Dispersion model** means the predicted smoke plume dispersion from information supplied by the Bureau of Meteorology.

**Airshed** means a concept based around the nine point sources for the Bureau of Meteorology’s smoke dispersion model. It is best described as the ‘footprint’ of the smoke plume emanating from the point source and so its coverage of the land area may vary according to weather conditions. It is also the reference point for burns which are conducted in its ‘shadow’

**Point source** means a geographical location in Tasmania which is assumed to be the source of smoke for the dispersion model. There are nine such points around the State.

## Appendix 3: Coordinated Smoke Management Strategy Implementation Plan 2009

### Introduction

The management of smoke from prescribed silvicultural burning (PSB) must account for the effects of and interactions between the main factors which influence the amount of smoke experienced by communities within the fallout zone, down wind from PSB. The factors are the type of fuel burnt, the condition of the atmosphere with regard to ventilation and inversion and daily smoke dispersion predicted by Bureau of Meteorology models.

In this strategy only areas with significant populations (200 or more persons) are considered when assessing the status of dispersion. This corresponds with cities and towns shown on the Tasmania 1:500,000 map. Sparsely populated areas are not considered unless there are special circumstances which pertain to the locality.

### Background

The CSMS is based on the assumed capacity of the atmosphere to be able to absorb a certain amount of smoke before it exceeds prescribed limits. This capacity varies with the conditions of ventilation and inversion and in the case of populations, with the direction and extent of plume dispersal. The CSMS prescribes limits on the amount of fuel which can be burnt under different atmospheric and dispersal parameters. These are described in the “airshed assumed fuel weight index capacity matrix” (AAC) shown below:

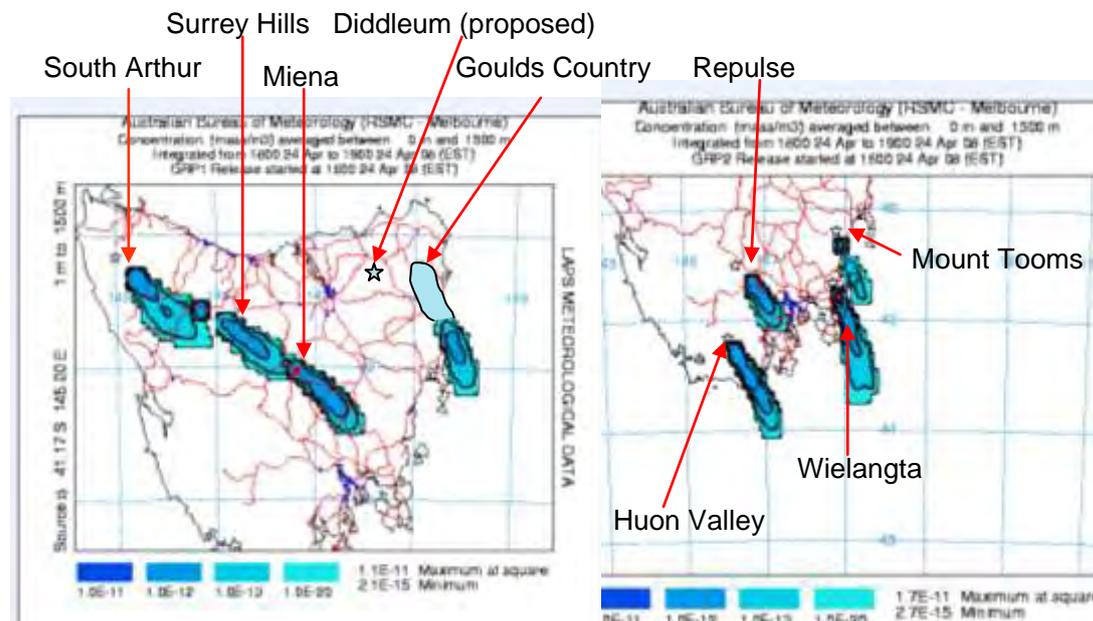
<b>Ventilation Index predicted for 1600 on day of burn</b> <b>1</b>	<b>FWI base units for airshed</b> <b>2</b>	<b>Inversion height &gt; 1500 m add units</b> <b>3</b>	<b>Inversion height &lt; 1500 m subtract units</b> <b>4</b>	<b>Favourable dispersion add units</b> <b>5</b>	<b>Un-favourable dispersion subtract units</b> <b>6</b>	<b>Best case total FWI</b> <b>7</b>	<b>Worst case total FWI</b> <b>8</b>
<b>Good</b>	15000	+5000	-5000	<b>+ 33% of Part A</b>	<b>- 33% of Part A</b>	26667	6667
<b>Fair</b>	12500	+5000	-5000			23333	5000
<b>Poor</b>	7500	+5000	-5000			16667	1667
<b>V Poor</b>	2500	+5000	-5000			1000	0
<b>Part A</b>				<b>Part B</b>			

**Table 1: Airshed assumed FWI capacity matrix (AAC)**

For the purpose of the CSMS, an “airshed” is a concept based around the nine point sources for the Bureau of Meteorology’s smoke dispersion model. It is best described as the ‘footprint’ of the smoke plume emanating from the point source and so its coverage of the land area may vary according to weather conditions. It is also the

reference point for burns which are conducted in its ‘shadow’. Some airsheds are more easily identified than others.

The Repulse and Huon Valley are the easiest to describe, being the broad drainages of the Derwent and Huon river systems respectively. Goulds Country is used for burns emanating in the north eastern corner of the State and affecting either Launceston to the west or St. Helens to the east. A new point source at Diddleum, west of Scottsdale, will represent the lower South Esk and upper Tamar drainages. Miena, on the Central Plateau, broadly relates to Deloraine and Launceston; Surrey Hills is used for the central north west coast and South Arthur for Smithton and Stanley. The Mount Tooms and Wielangta airsheds cover the central east coast and the Tasman Peninsula respectively.



**Figure 1: Point sources for the Smoke dispersion Model**

### How the CSMS will work

Practitioners will need to classify their burns into fuel types. These are described as being either ‘heavy’, ‘light’ or ‘very light’. Heavy fuel means wet forest residues, windrows and heaps or any comparable equivalent. Light fuel means open, dry forest residues, plantation residues or any comparable equivalent. Very light fuel means unlogged, open dry forest fuel, stubble, grass, buttongrass on low productivity sites or any comparable equivalent.

A Fuel Weight Index (FWI) is applied to each of the fuel types so that the daily total of hectares burnt can be represented as a value related to the amount of fuel available and hence the potential for smoke production. The FWI is calculated on the basis of 40 units per hectare for heavy fuels, 15 units per hectare for light fuels and 5 units per hectare for very light fuels. This model can accommodate variable fuels within a single burn, provided that the practitioner can estimate either the the area or the proportion of each fuel type within the burn. The FWI should be calculated and recorded as part of the burning plan.

On the burning day, participants will each log on to a Forest Practices Authority web site and register the total FWI which they plan to burn on that day for each airshed in which they plan to operate. At 0900 hours the website will be locked and no further entries can be made.

The F160 (Part A) component of the allowable FWI for each airshed for that day, based on columns 1 - 4 of the AAC matrix (Table 1), will then feed back through the web site by 0930. This will also show the amount by which the allowable FWI is exceeded by the registered FWI, expressed as a percentage.

**Example:**

Repulse	FT	Gunns	Norske	FEA	PWS	Total FWI Registered	Ventilation Index	Inversion Height	Part A FWI Allowed
28/03/09	3000	5000	2000	1500	250	<b>11750</b>	Very Poor	>1500	<b>7500 (-36)%</b>

Each participant will then adjust their registered FWI by the required amount so that in the example above, each participant's registered FWI will be reduced by 36%.

**Example:**

Repulse	FT	Gunns	Norske	FEA	PWS	Total
28/03/09	1920	3200	1280	960	160	<b>7480</b>

The next step will be for the participants to consider the effect of the dispersion model on their planned burning. Participants will be able to adjust their Part A allowable FWI on the basis of a local interpretation of the BoM's dispersion model.

The Part A allowable FWI is adjusted up or down by one third of its value (Part B), depending upon whether the smoke model predicts that the plume will hit or miss a population centre. A favourable dispersion means that upper level winds will take the smoke in the opposite direction or at a tangent sufficient to avoid the population centre.

**Example:**

Repulse 28/03/09	FT	Gunns	Norske	FEA	PWS	Total FWI
<b>Part A</b>	1920	3200	1280	960	160	<b>7480</b>
<b>Part B</b>	640	1067	427	320	53	<b>2507</b>
<b>A+B = Allowable FWI*</b>	<b>2560</b>	<b>4267</b>	<b>1717</b>	<b>1280</b>	<b>213</b>	<b>9987</b>

\* Dispersion model is favourable in this case. If unfavourable, Part B is deducted from Part A.

This approach gives considerable discretionary decision-making power to the participants and will need to be closely monitored to ensure that their interpretations of the dispersion model can be supported.

The final step in the process is the achievement feed-back which must be lodged on the website before the next day's entry can be made. This must be done even if it is a "nil return" as the new entry fields will be locked until an achievement feed-back has been entered.

Originally it was proposed that there should be a role for a centralised adjudicator where participants could make a case for special circumstances. During the initial trial period this will be the responsibility of a nominated person within each of the participating organisations. Thus any decisions to take actions which are contrary to the strategy will be at a senior level within organisations. Any subsequent action which arises as a consequence of these decisions will be between the FPA and the organisation concerned. This will have the effect of preserving existing 'chains of command' and ensuring that responsibility and accountability are retained by participating organisations.

### **Exceptional Circumstances – “No Burning days”**

Subject to the EPA being able to provide real-time monitoring by 2009, when smoke from a preceding day or days does not disperse and PM 2.5 and / or PM10 levels are at prescribed limits at 0900 then a “No Burning Day” will be declared for the relevant airshed(s) unless:

- the predicted Ventilation Index is above 7050,
- the predicted Inversion Height is above 1500 metres and
- the dispersion model is favourable for that day.

### **Responsibilities of parties to the CSMS**

The responsibilities of the various stakeholders under the CSMS can be summarised as follows:

**TFS:** Daily inputs, F160 data management.

**Prescribed fire users:** Data compilation, entry, retrieval, application of dispersion model and maintenance of system integrity.

**FPA:** Monitoring, audit, investigation, system maintenance and reporting.

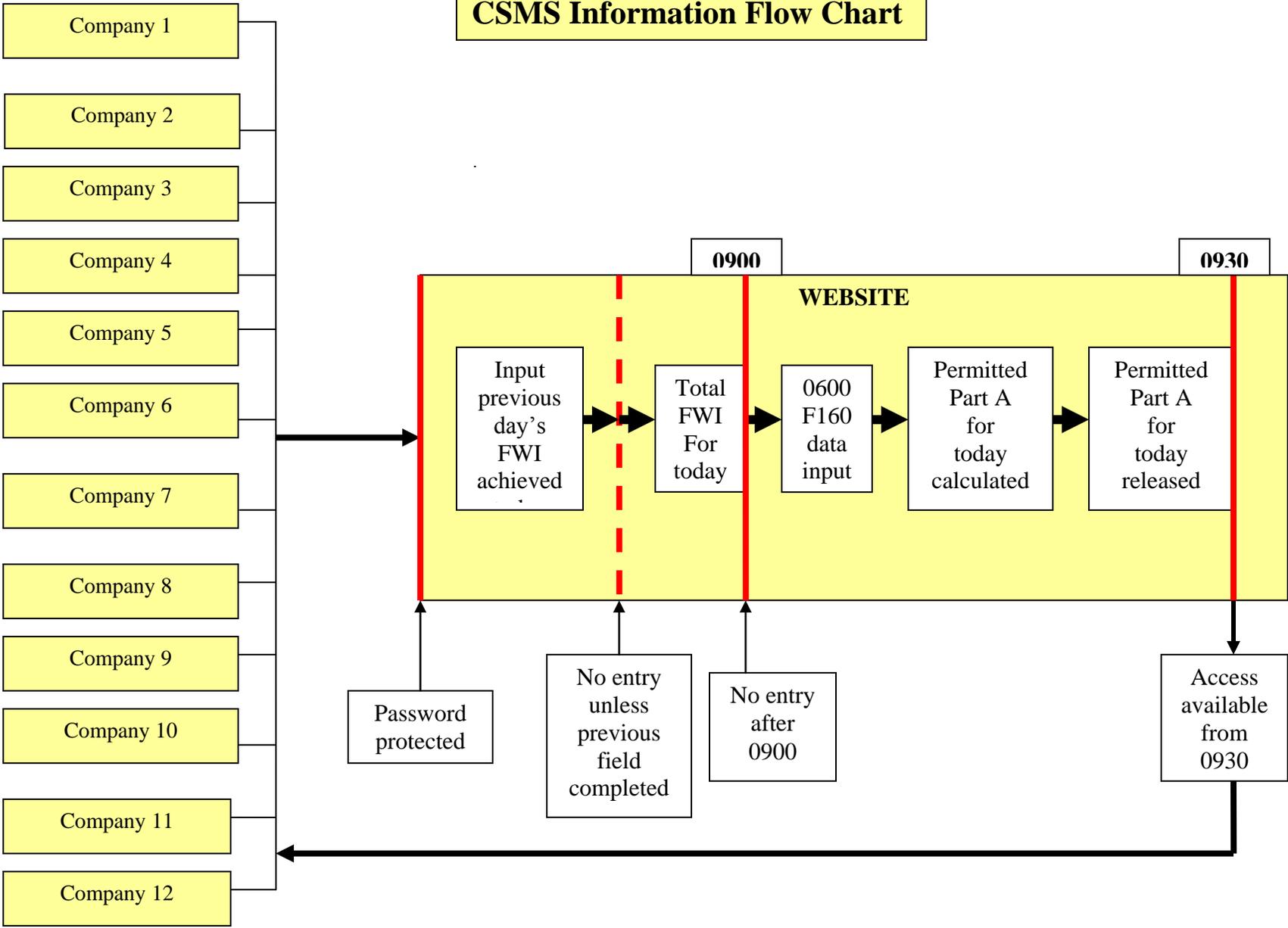
**EPA:** Air quality monitoring.

The following table summarises the implementation plan:

**Coordinated Smoke Management Strategy  
Participants' Implementation Plan 2009**

<b>Steps</b>	<b>Related Procedures</b>	<b>Explanation</b>
Burning plan preparation.	Classify fuels & calculate coupe / burn FWI & record on plan.	Must be done to establish the integrity of the following procedures.
Lodge a shedule of planned burns with FPA.		As above – FWI's are recorded for all burns.
Register total FWI with TFS by 0900 for day's planned burns.	No registration – no burn.	If a participant fails to register their FWI by the cut-off time, the daily FWI allowance for the remaining registrants will be increased by default (on restricted days).
Receive advice on day's Part A allowance by 0930.	The total of the registered FWIs will be compared with the AAC matrix and % reductions (if any) will be calculated. This will be the <u>Part A</u> allowable FWI.	Based on the F160's 0600 prediction for each of the 9 point sources and the AAC matrix, excluding the Dispersion Model value.
Apply Dispersion Model forecast at local level ( <u>Part B</u> ) and adjust daily FWI allowance accordingly.	<u>Part A</u> allowable FWI is adjusted up or down by one third of its value, depending upon whether the smoke dispersion model predicts the plume will hit or miss a population centre.	The Dispersion Model will be monitored and archived by the FPA. Inconsistencies in <u>Part B</u> interpretation will require explanation. Consistent unjustifiable misinterpretation of the dispersion model will result in suspension of a practitioner's accreditation under the proposed Standard for Prescribed Silvicultural Burning.
Following Day Feedback: previous day's achieved FWI and the dispersion model interpretation is lodged, together with the the planned FWI's for the new day (by 0900).	Failure to provide the feedback will automatically lock-out a new registration.  Subject to a daily tolerance of 10% of the registered FWI, 3 over-registrations in any 7 day period will result in a daily FWI penalty equal to the average of the excesses for the remainder of the season.	It is essential that feed-back is provided so that compliance can be monitored.  Measures may be necessary to prevent the lodgement of ambit registrations.

# CSMS Information Flow Chart



## **Appendix 5 - PUA FIR406A Develop prescribed burning plans**

### UNIT DESCRIPTOR

This unit covers the development of plans for prescribed burning in areas for which the organisation is responsible to meet defined objectives through a range of strategies.

### ELEMENT PERFORMANCE CRITERIA

1. Identify target areas and burn objectives
  1. Areas requiring prescribed burning are identified in accordance with the organisation's procedures
  2. Burn objectives are developed in accordance with the organisation's procedures
2. Prepare plans for prescribed burning
  1. Strategies and tactics which are suitable for the location and will meet objectives, are nominated in accordance with organisational procedures and programs
  2. Consultation with other interested parties, during the planning process, is conducted in accordance with organisational procedures
  3. Proposed strategies and tactics take into account the safety of persons and protection of property, assets and the environment
  4. Resources required and conditions for implementation of the strategies and tactics, are specified in accordance with organisational procedures
3. Monitor implementation of prescribed burning plans
  1. Progress of plan implementation is monitored for compliance with organisational requirements
  2. Prescribed burning activities are recorded in accordance with organisational procedures
  3. Incidents are reported and investigated in accordance with organisational procedures

### RANGE STATEMENT

Hazards may include  
flammable vegetation  
flammable hazardous materials  
adjoining land use, proximity to urban areas  
Actions may include assist in community protection  
hazard reduction  
vegetation management  
habitat management  
management of cultural sites

Interested parties may include  
government organisations including local, state and federal  
adjacent land owners and/or managers  
community groups with specific interests  
Safety of people may include  
people on areas adjacent to the target area  
people permanently or temporarily in the target area  
smoke management  
Protection of property and assets may include  
property and assets adjacent to the target area  
commercial crops or other assets on the target area  
cultural sites, historical buildings, etc.  
Protection of the environment may include  
native flora and fauna  
rare and endangered species  
water quality  
soil conservation  
safe use of chemical sprays  
smoke management  
Incidents may include  
fire escapes over control lines  
accidental chemical spillage  
damage to equipment and property  
damage to environment  
injury to persons  
complaints from persons or organisations

#### EVIDENCE GUIDE

Critical aspects of evidence

It is essential for this unit that competence be demonstrated by: identifying wildfire hazards developing objectives meeting objectives for burn strategies and tactics minimising environmental impact recognising and consulting interested parties

Interdependent assessment of units

Pre-requisite units: PUAFIR303A Suppress wildfire

Co-requisite units: Nil

Underpinning knowledge  
wildfire hazards  
prescribed burning strategies  
wildfire behaviour  
organisational procedures and programs  
legislation relevant to wildfire hazard reduction  
effects of fire on vegetation, fauna and fuel accumulation  
effects of fire on areas and places of cultural significance  
Underpinning skills community consultation and liaison  
recommending actions to be taken, communicating with others  
preparation of plans  
map reading  
measuring quantities, calculating areas  
Resource implications  
travel to remote locations may be necessary  
Consistency in performance  
competency demonstrated over a period of time within the range of variables  
Context of assessment on the job and/or indirect evidence in the form of  
documentation, and/or discussion with the applicant and nominated referees simulated  
situations

## **Appendix 6 - PUAFIR407A Conduct prescribed burning**

### UNIT DESCRIPTOR

This unit covers the competency for conducting a prescribed burn.

### ELEMENT PERFORMANCE CRITERIA

1. Prepare to burn
  1. Burn plan is identified in accordance with the organisational procedures and legislative requirements
  2. A contingency plan is developed based on local conditions at the time of burn and communicated to all personnel
  3. Permits are obtained in accordance with organisational procedures
  4. Burn notifications are issued in accordance with organisational procedures
  5. Resource requirements are identified
  6. Control lines are specified and prepared in accordance with organisational procedures
  7. Assets are protected in accordance with organisational procedures
  8. Weather conditions are monitored
2. Conduct burn
3. Resources are gathered and deployed
4. Day of burn notifications are issued
5. Pre burn checks are conducted
6. Lighting is conducted in accordance with plan or organisational procedures
7. Burning is monitored and operational changes are made as required
8. Records are kept in accordance with organisational procedures
9. Burn operations are concluded
3. Conduct post burn activities
10. Outcomes of the burn are assessed and reported
11. Variations from the burn plan are reported in accordance with organisational procedures
12. Restoration and rehabilitation is carried out in accordance with organisational requirements

## RANGE STATEMENT

Assets to be protected buildings

historic relics

camp or recreational areas

utilities (power and telephone lines, water supply

structures, communications towers)

research plots, reference areas

area of rare or sensitive flora and fauna

crops

plantations

other property

Notifications may be given to persons or organisations who have an interest in the area to be burned

have an interest in adjacent land to which a burn could spread

have an interest in managing the consequences of a burn

have an interest in specific assets

may be concerned by evidence of a burn

Notification plans are required for

private land

public land

Weather conditions to be monitored

temperature, relative humidity, wind, atmospheric stability

Resources may include

experienced crew for ground ignition, trained navigators,

bombardiers for aerial ignition, equipment and supplies,

tankers, other vehicles, equipment, back-up, logistical

support

Lighting techniques and patterns may include

ignition method

lighting pattern

ignition spacing

Burn operations may include

low intensity burns

high intensity burns

Monitoring of burning may include

observations

predictions

recording

fuel moisture content

wind speed and direction

flame height

rate of spread

smoke development

Conclusion of burning operations patrol or burn area

mop up

black out

Contingency plans for escapes include

reasons for escape  
special resources/secondary control lines  
command structure  
Local conditions at time of burn may include  
wind strength and direction  
temperature  
changes in conditions  
anticipated changes  
Restoration and rehabilitation may be required for  
control lines  
vehicle tracks  
areas disturbed by tracked machinery  
revegetating damaged areas  
repairing fences

#### EVIDENCE GUIDE

Critical aspects of evidence

It is essential for this unit that competence is demonstrated in: the preparation of burn plans for a designated area the effective conduct of a burn, utilising the appropriate resources and record action taken follow up activities once the burn is completed

Interdependent assessment of units

Pre-requisite units: PUAFIR303A Suppress wildfire

Co-requisite units: Nil

Underpinning knowledge

legislative, organisational policy and procedures for conducting a prescribed burn

types of prescribed burns

seasonal restrictions on prescribed burns

authorisations required for conducting a burn

high and low intensity prescribed burns

ignition patterns and techniques

developing a prescription

resource requirements

procedures for monitoring prescribed burns and securing burn area

Underpinning skills developing a prescribed burn

conducting high and low intensity prescribed burns

establishing control lines for prescribed burns

developing a contingency plan

monitoring the burn

undertaking patrol activities

Resource implications Access to a range of controlled or simulated fires lighting equipment

Consistency in performance

Evidence should be gathered over a period of time in a range of actual or simulated workplace environments

Context of assessment Evidence of competence may be demonstrated on the job and/or in a simulated environment

## Document Control Log Table

### Document Summary Information

Document name	Forest Industry Standard for Prescribed Silvicultural Burning Practice 2009
Version	1.1
Trim record	2011/009339
Owner	Graham Wilkinson
Author(s)	FPA
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Release Approved by	FPAC
Release status	Public document

### Version Control

Version	Date	Author(s)	Summary of changes
1.0	March 2009	Graham Wilkinson	
1.1	18/01/11	Chris Grove	Added version number, Trim record and doc control tables. Note: The wording of this document is identical to that approved by FPAC in March 2009, except for the document control information.

### Stages required for release outside FPA

Category of advice		C
Stages	Required/not required	Completed (date)
Specialist	Not required	
Line Manager	Not required	
Peer/FPO/stakeholder review	Not required	
CFPO	Required	March 2009
FPAC	Not required	March 2009
Board	Required	March 2009