

FSUFPA ADVISORY FORUM

THE FREE STATE PROVINCE
GUIDE FOR
FIRE PROTECTION ASSOCIATIONS
ON
BEST OPERATING PRACTICES, STANDARDS AND PROCEDURES
FOR
WILDLAND FIRE MANAGEMENT.

COMPILED BY THE FSUFPA ADVISORY FORUM

VERSION 2
MAY 2019



BEST OPERATING PRACTICES, STANDARDS AND PROCEDURES

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BEST OPERATING PRACTICES, STANDARDS AND PROCEDURES

1. INTRODUCTION

The Free State UFPA Advisory Forum is a subforum of the Provincial Fire Advisory Committee of the Free State Provincial Disaster Management Centre and consists of the following ex officio members: Provincial CAPS, PDMC Head of Centre and Provincial Fire Coordinator, FSUFPA Operations Manager, FPO/FPA Managers from affiliated District FPA's, WoF Provincial Ground Ops and Dispatch Centre Managers as well as the DAFF Deputy Director Regulations.

The FSUFPA Advisory Forum is convened and chaired by the FSUFPA Operations Manager on a bi-annual basis or when deemed necessary.

Purpose of the FSUFPA Advisory Forum

- To provide a platform for interdepartmental and multijurisdictional collaboration in wildfire (veldfire) risk management issues.
- To actively develop an integrated and robust wildfire management structure that can provide effective and sustainable prevention, response and recovery programs and services within the Free State.
- To facilitate the improvement of wildfire prevention, response and recovery operations.
- To facilitate the provision of information and feedback in relation to wildfire risk management issues to FPAs, Disaster Management and Fire Brigade structures in the province.
- To establish collaborative operational partnerships through liaison and interaction with delegated departments, organizations and relevant stakeholders.

Aims of the FSUFPA Advisory Forum

- To promote sustainable, equitable and efficient Wildfire/Veldfire operational management principles within the Free State.
- To promote safe, sustainable and effective capacity building in the Free State with regard to Wildfire/Veldfire operations.
- To develop trust and to promote cooperative governance among FPA's and authorities.
- To create liaison closely with the Local, District and Provincial Government, Working on Fire and the Department of Agriculture, Forestry & Fisheries.

Primary Responsibilities of the FSUFPA Advisory Forum

- Develop provincial best practice guidelines, standards and procedures for application in the Free State wildfire operational matrix.
- To facilitate and co-ordinate wildfire related training for the benefit of the FPAs and their members in cases where training is not provided by the training industry – formulate training standards for compliance and capacity training applicable to the Free State.
- Facilitating mutual aid agreements (between fire related parties and the FPAs).
- To investigate, facilitate and co-ordinate fire related equipment for the benefit of the FPAs and their members, with respect to;
- Aerial operations: Helicopters, Fixed wing Bombers, etc.
- Ground operations: Fire equipment – pumps, hoses, Fire Tenders, Hand crew equipment, Personal Protective Equipment (PPE), Radio Communications and Chemicals & Gels, etc.

Authorship and Copyright

The Free State Province Guide for Fire Protection Associations on Best Operating Practices, Standards and Procedures for Veld and Wildland Fire Management is compiled by the members of the FSUFPA Advisory Forum. Existing international and local standards obtained from various accredited sources are adhered to while adaptations are made to accommodate the operational realities created by organisational, structural, natural, demographical, socio-economical and socio-political matrixes experienced within the Free State Province.

Disclaimer

The information provided in this guide is obtained from various sources considered to be correct at the time. Although the Guide is a dynamic document, the reader must be aware of changes that may take place outside the control of the authors and the authors are not responsible for any claim resulting from inaccuracies in, or omissions from the Guide.

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2. ABBREVIATIONS & ACCRONYMS

FPA	Fire Protection Association is a community-based natural resource management organisation for the collective management of veldfires, using local knowledge within the framework provided by Act 101 of 1998, The National Veld and Forest Fire Act.
FSUFPA	Free State Umbrella Fire Protection Association
PDMC	Provincial Disaster Management Centre
ProFSAC	Provincial Fire Advisory Committee
DDMC	District Disaster Management Centre
WoF	Working on Fire Project/Program
ICS	Incident Command System
SAICS	South African Incident Command System
SAICSWG	South African ICS Working Group
PPC	Personal Protective Clothing
PPE	Personal Protective Equipment
SU	WoF vehicle identification: Strike Unit. Wildfire Truck 2x4 or 4x4 half crew and 1500l water pumping capability.
FT	WoF vehicle identification: Wildfire Truck. Large 4x4 IVECO full crew and 3000l water pumping capability.
TB	WoF vehicle identification: 2x4 Bus. Personnel transport with separate hand tool bin.
CFO	Chief Fire Officer Person in charge of a designated fire service in terms of Section 5 of Act 99 of 1987, The Fire Brigade Services Act.
CAP/S	Category of Authorised Persons as contemplated in Section 13 of Act 99 of 1987, The Fire Brigade Services Act.
FPO	Fire Protection Officer
FMAC	Fire Management Area Coordinator
FMA	Fire Management Area
SL	Sector Leader
NVFFA	National Veld and Forest Fire Act
DAFF	Department Agriculture Forestry and Fisheries
DPRT	Free State Department of Police, Roads and Transport
AHJ	Authority Having Jurisdiction
DEA	Department Environmental Affairs
SANRAL	South African National Roads Agency SOC Ltd
EMS	Emergency Medical Services
SAPS	South African Police Services
ROS	Rate of Spread: The relative activity of a fire in extending its horizontal dimensions that can be expressed as a rate of increase of the total perimeter of the fire or as rate of forward spread of the fire front.
NDMF	National Disaster Management Framework

3. BEST PRACTICE GUIDELINES

3.1 Controlled Burning Operations on Roads

a) *Responsibility and Permissions*

Proclaimed public roads including the road shoulders is public property and the authority under who's jurisdiction the road falls is the responsible party or "landowner" as per the definition provided in the NVFFA.

No burning may take place on proclaimed public roads without written permission/consent from the Jurisdictional Authority

Authorities Having Jurisdiction (AHJ)

SANRAL: All National (N) roads and selected Regional (R) Roads

Free State Department of Police Roads and Transport (DPRT): Regional (R) and Secondary (S) Roads

Local Municipalities: Residential Streets and roads within Municipal Boundaries, Limited Sections of Regional and Secondary Roads. (Many roads falling under Municipal Jurisdiction is outside the scope of the NAVFFA.)

AHJ Permissions

SANRAL: Only legally contracted service providers may conduct burning operations on SANRAL roads.

DPRT Regional (R) Roads: Obtain seasonal written permission for specified sections of Regional roads from Provincial Head of Department (HOD).

DPRT Secondary (S) Roads: Obtain written permission from District Road Maintenance offices from District Manager/ Supervisor for burning operations on Secondary (S) gravel roads.

Local Municipalities: Obtain written permission from the relevant HOD through the Disaster Management Coordinator or Chief Fire Officer (CFO)

b) *Additional Safety Measures*

When burning on roads and road shoulders on proclaimed or unproclaim roads used by the public the IC must ensure that the operation is conducted in accordance with the National Road Safety Regulations or as prescribed in writing by a dully authorised representative of the Provincial or National Department of Transport.

Smoke management must be implemented and vision impairing smoke levels may not be allowed to spread over roads unless traffic control points manned by traffic officers has been established

Notwithstanding the scope and extent of permissions obtained in point A above all controlled burning operations are subject to the rules and regulations of the FPA

c) *Burn Permits and Notifications*

Notwithstanding the scope and extent of permissions obtained in point A above all controlled burning operations are subject to the rules and regulations of the FPA and granting of burn permit by the FPA having jurisdiction.

Notwithstanding the terms and conditions set out in the burn permit, notification must also be given to the local CFO, Traffic Officers, SAPS, EMS as well as the Municipal Disaster Coordinator (where they are present) each day that burning operations take place before such burning commences.

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3.2 FDI Communication Systems

- a) Section 5(1)(e) requires an FPA to regularly communicate the Fire Danger Rating (FDI) to its members. The aim of communicating the FDI is to ensure that people and organizations are informed of potential risks in relation to predicted fire weather in order to:
 - i. Refrain from engagement in any activity that can cause the ignition of a wildfire especially making of open fires and hot work like welding and grinding in the open veld.
 - ii. Provide enough time for rescheduling or re-planning of work/activity schedules to accommodate any dangerous fire weather conditions.
 - iii. Place personnel and equipment on an appropriate state of readiness for wildfire suppression actions.
- b) The CFO/FPO is responsible for distribution of the FDI on a regular, timeous and effective manner to ensure that:
 - i. FDI information must be communicated on a management, supervisory and member level throughout the organisation.
 - ii. The FDI is distributed in writing in a manner that states the time period covered by the communication, briefly explains the conditions expected, what actions must be taken and what prohibitions or restraints, if any, are in place over the period.
- c) The following sources for FDI information are accepted as reliable by FSUFPA: South African Weather Services (SAWS), Vital Weather and the Advance Fire Information System (AFIS). The officially recognised provider of all-weather data and forecast products within South Africa however remains SAWS.
- d) Messaging applications like WhatsApp or Telegram provides proof of time, content and distribution of FDI information dissemination and is the preferred manner of providing FDI information.
- e) Messaging systems can be used in a direct or hierarchical communication system to ensure that appropriate information is distributed to the relevant persons. Messaging applications provides audited proof of time, content and distribution of FDI information dissemination.
- f) The following sources for FDI information are accepted as reliable by FSUFPA: South African Weather Services (SAWS), Vital Weather and the Advance Fire Information System (AFIS). The officially recognised provider of all-weather data within South Africa however remains SAWS.
- g) FDI information must preferably be communicated for a 5-day forecast period with warnings being issued at least 24 hours before dangerous fire weather conditions are expected.

3.3 Initial Wildfire Reporting

- a) Wildfires incidents must be reported to the FPO/CFO when and where they occur.
- b) Each District/Regional FPA must have a two-tiered fire reporting system that allows FPA members to report directly into the FPA response structure and the general public to report fires to a single response activation point.
- c) The minimum information needed for effective response is:
 - i. Name and contact details of reporting individual.
 - ii. Location of fire:
 - National and Regional route number or route description with distance from closest town
 - Secondary routes a route description with distance from closest, generally identifiable landmark or farm name
 - Use of a location pin is preferred and encouraged.
- d) The dispatching of resources or response to a wildfire must be reported to local fire services to prevent response duplication.
- e) Establishment of an integrated hierarchical messaging system is recommended in order to ensure that effective wildfire incident reporting and response structure is established.

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3.4 Incident Command System (ICS)

- a) The Incident Command System (ICS) is a management system designed to enable effective and efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure that:
 - i. Enables a coordinated response among various jurisdictions and organisations.
 - ii. Establishes common processes for planning and managing resources.
 - iii. Establishes accountability structures.
- b) ICS is the only accepted system for the management of Wildfire incidents within the Free State Province.
- c) ICS competency is required on the following levels:
 - i. All FPA members: ICS 100
 - ii. Sector Leaders: ICS 200
 - iii. Fire Management Area Coordinators & Municipal Disaster Coordinators: ICS 300

3.5 Fire Typing

- a) Fire typing provides a uniform way to assess the potential risk posed by a fire based on a predetermined set of variables in order to assist with sufficient resource dispatching. The fire typing table provides responsible persons and officials with a resource requirement guide to make reasonable operational decisions in a consistent and uniform manner.
- b) Wildfires in the Free State is typed according to the ICS typing system with Type 5 Wildfires being the smallest, least complex at the bottom end of the scale and Type 1 Wildfires the most complex and dangerous at the top end of the scale.
- c) The Free State Wildfire Typing Table is not equivalent to the ICS incident typing system in terms of scope and complexity of incidents but is only a guide for use in the Free State Province Wildfire operational matrix.
- d) The Fuel and Fire Typing tables is attached as Annexure 1.

3.6 Disengagement

- a) The IC at a wildfire incident can withdraw resources and declare a fire dead or extinguished once he/she is satisfied that mop-up has been done according to the prescribed standard.
- b) The IC must ensure that prevailing and expected conditions reasonably precludes the possibility of the fire re-igniting or that measures are in place to deal with possible reignitions along the fire perimeter.
- c) The IC can at his/her discretion institute Fire patrols/guards along the fire perimeter for a period that he/she deems necessary to deal with the possibility of reignitions. The following factors must be taken into consideration when deciding on the extent and duration of fire patrols:
 - i. Fuel conditions on the fire perimeter.
 - ii. Current and 24-hour FDI prediction
 - iii. Localised weather conditions
 - iv. Topography
 - v. Resource availability
 - vi. Resource response time
- d) Instituting of Fire patrols or Guards is mandatory when the FDI is expected to exceed 59 within 24 hours after a fire has been extinguished or when the wind is expected to reach 4 Beaufort scale.
- e) Fire patrol/guard teams must be fully self-reliant and able to effectively deal with fires in the incipient phase in the area of operations over the assignment period. Fire patrol/ guard teams must be able to communicate effectively with dispatch to request additional resources when needed.

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3.7 Protocol for Claiming Fire Suppression Costs

- a) Ensuring that a uniform standard is applied in the establishment of fair and reasonable cost recovery associated with wildfire suppression operations undertaken by FPA's or other service providers in the Free State Province. When dealing with claims for wildfire suppression operations the following must be considered:
- Possible litigation can result even three years after an incident occurred.
 - Reasonable proof must be provided for any claims made.
 - Reasonable and cost-effective action is required when dealing with wildfire incidents.

- b) The following arrangements will ensure that cost recovery is done in line with nationally acceptable norms and standards:

Step 1:

Wildfire Incident Management processes must be recorded to ensure accountability and transparency is maintained. The accepted format for initial attack recordkeeping is stipulated in the ICS requirement column of the Fuel and Fire Typing tables that forms part of Best practice Guideline 3.5 in this guide. Compliance with reporting requirements is mandatory and must be completed by the Incident Commander/Fire Coordinator on scene or directly after the incident from notes taken on scene.

Step 2

Report the fire to the SAPS and obtain an Occurrence Book (OB) entry number. This is not the same as laying a charge it is merely officially reporting of the fire incident at the police station in whose precinct the incident occurred.

Step 3

Any wildfire incident must be reported to DAFF as part of the required provision of fire statistics by FPA's as per the National Veld and Forest Fire Act. The accepted national standard is the official DAFF Veldfire Incident Report Form that must be completed and submitted on the FSUFPA Fire Incident Data Manager Application (ProFIDMApp) within 12 hours after the fire has been declared dead/extinguished by the Incident Commander/Coordinator as per SOP 1.5 Fire Incident Reports in this guide.

Step 4

Prepare an invoice based on the current FSUFPA Suppression Cost Schedule according to the information provided on the SAICS Incident Organiser - Wildland Fires. Before presenting the invoice provide the person/organisation deemed to be liable with the DAFF Veldfire Incident Report Form as well as the SAPS Occurrence Book (OB) number and inform them in writing that they will be held liable for the suppression costs. Provide the total cost amount and inform the person/organization that should they choose to dispute the liability then a Preliminary Fire Investigation will be done, the cost of which will be added to the total cost of suppression.

Step 5

If there is no dispute, then present the invoice for settlement. It is imperative that a reasonable time be given to enable arrangements with insurers. Please take note that a creditor/debtor relationship has now been established and the needed standards must be followed to ensure legal actions remains a possible option. Should the liability be disputed then continue to Step 6.

Step 6

Commission a Wildland Fire Investigator to do a preliminary fire investigation. This can be done through FSUFPA or independently by the FPA. Ensure that the investigator is of good reputation, has no possible conflict of interest and that the investigation is done according to the standard prescribed in the FSUFPA Minimum Standards of a Preliminary Wildfire Investigation attached as Annexure 4 to this guide. Should the Preliminary Fire Investigation concur that the person/entity is liable for the payment of fire suppression costs, then add the cost of the fire investigation to the invoice and present the invoice with a copy of all documents to the person/entity for settlement.

3.8 Fire Suppression Cost Schedule

- To ensure that a uniform costing model is applied during wildfire (veldfire) suppression operations within the Free State province.
- To assist with the develop a uniform resource typing system that will enable Incident Managers and Administrators to request the correct resources for the operational needs.
- Provide for a uniformly accepted resource pricing structure throughout the Free State province.
- The Fire Suppression Cost Schedule must be maintained and updated on a monthly basis to make provision for increases in fuel and other consumable prices that has a direct influence on variable costs.
- The Fire Suppression Cost Schedule must assist in establishing the actual economic impact wildfires in the Province.

4. STANDARD OPERATING PROCEDURES

4.1 Dispatching Protocol

- a) Section 17 of the NFVVA requires landowners on who's land a wildfire may start or spread to have equipment and personnel to reasonably suppress or contain such a fire. Section 84(j) of the Municipal Services Act appoints the municipality as the Controlling Authority appointed to provide and maintain a designated Fire Brigade Service as described in the Fire Brigade Services Act who has the responsibility to suppress all fires within the designated area of responsibility.
- b) An integrated hierarchical messaging system (WhatsApp, Telegram etc) must be established in order to ensure that an effective wildfire incident reporting and response structure is established.
- c) The dispatching of resources to a wildfire must be reported to local fire services to prevent response duplication.
- d) The Initial Attack IC must do an incident assessment (size up) and provide an Incident Evaluation Report directly after arriving on site to ensure that a correctly scaled secondary response is initiated.
- e) Resource requisition and dispatching must only be done by authorised persons based on reports received through recognised reporting channels.

4.2 Incident Evaluation and Reporting

- a) The initial attack IC must perform an incident evaluation before engaging in suppression activities in order to:
 - i. Ensure the safety of fire fighters and resources
 - ii. Evaluate fire behaviour
 - iii. Understand risks and hazards
 - iv. Establish incident objectives
 - v. Provide an Incident Assessment Report
- b) The official Incident Assessment Reporting Guide is an adaptation of the SAICS Wildfire Incident Organizer Initial Size-Up section. The Incident Assessment Reporting Guide will assist IC's to provide an initial Incident Report with a recommendation for fire typing to assist with initiating an appropriately scaled response.
- c) The Incident Assessment Reporting Guide recommendation must be provided verbally or on the integrated message system in order to ensure that all role players are informed of the incident classification and status.
- d) Additional reporting requirements must be adhered to.
- e) The Incident Assessment Reporting Guide is attached as Annexure 2

4.3 Incident Escalation Procedures

- a) National Disaster Management Framework Level 5: A Sector is the smallest geographical area where Community Based Wildfire Management can take place and is managed by a Sector Leader. The following Wildfire incident response must take place on Sector level:
 - i. Detection and Reporting of Fires
 - ii. Initial Fire Suppression Actions
 - iii. Incident Assessment and Reporting
 - iv. Initiation of Fire Response Plan
 - v. Sector Leader: Reporting all fire incidents to the FMA Coordinator
 - vi. Sector Leader: Assessment of incident severity and initiation of escalation protocols.
- b) National Disaster Management Framework Level 4: A Fire Management Area is a localised area that may correspond with Municipal or other jurisdictional borders and consists of multiple sectors. FMA's are managed by an FMA Coordinator. The following Wildfire incident response must take place on FMA level:
 - i. Implementation of Fire Incident Action Plans
 - ii. Local Resource Management and Dispatching
 - iii. Initial Reporting of Fire Incidents to CFO/FPO and or FPA Manager
 - iv. Initiating Escalation Protocols and External Resource Requesting
 - v. Managing Expanding Incidents
 - vi. Official Fire Incident Reporting

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- vii. Expanding Incident IC
- c) National Disaster Management Framework Level 3: A Fire Protection Association corresponds to District Municipality or multiple Municipal borders and consists of several FMA's. FPA's are managed by an FPA manager and/or an FPO. The following Wildfire incident response must take place on FMA level:
 - i. Initiating Escalation Protocols and external FPA Resource Requests
 - ii. Reporting of expanding Fire Incidents to District Disaster Manager
 - iii. Coordination with DDMC and DDMC Manager
 - iv. District Based Resource Management
 - v. Expanding Incident IC
 - vi. Liaising with FSUFPA Operations Manager
- d) National Disaster Management Framework Level 2: The Free State Umbrella Fire Protection Association encompasses the provincial borders and is managed by a GM and Operations Officer. The following Wildfire incident response must take place on FSUFPA level:
 - i. Reporting of expanding Fire Incidents to PDMC
 - ii. Liaising with PDMC and PDMC Manager
 - iii. Advising PDMC on resource availability
 - iv. Dispatch and coordination of Provincial based ground and aerial resources
 - v. Liaising with neighbouring Provincial UFPA managers
 - vi. Coordinating of external UFPA resources
- e) The Wildfire Incident Management Organogram is attached as Annexure 3

4.4 Mop-Up Standards

- a) Mopping up is done once the fire is contained and is undertaken to ensure that the fire does not re-ignite and spread. The mop-up operation is the most crucial part of wildland firefighting and should be done to the following basic standard:
 - i. Ensure that no smouldering material is present within 3-5m of the burn line.
 - ii. Smouldering cow dung must be moved away from the burn line, broken up and hosed down.
 - iii. Heavy fuels like logs or branches that is smouldering must be pulled into the burnt area away from the burn line a distance of at least 10-20m from the burn line.
 - iv. A control line of at least 0.5-1m must be cleared onto the mineral soil where compacted ground fuels (dead plant materials) has burnt especially under trees or any place where plant materials have composted over time. The control line must be constructed in a manner that will prevent possible creeping fires from spreading beyond the control line.
 - v. Smouldering trees and brushes (candle/) on the burn line must be cut or hacked down and an area of 15-20m must be cleared around it to ensure that it does not re-ignite the fire.
 - vi. Due care must be taken when dealing with candling trees for potential snags.
 - vii. Turpentine/Vlei grass on the burn line must be broken apart and thoroughly hosed down.
 - viii. A mop-up report must be provided to the IC by responsible group and division supervisors or crew/unit leaders when mopping up has been concluded.

4.5 Fire Incident Reports

- a) All Wildfire incidents must be reported to DAFF as well as to the CFO of the local fire services and disaster management structures.
- b) The FSUFPA Fire Incident Data Manager Application (ProFIDMApp) is a cloud-based online reporting tool that is a digital version of the official DAFF Wildfire report and can be accessed online by authorised persons at www.fsufpa.co.za
- c) Authorised persons must register in order to obtain access to the FSUFPA Fire Reporting portal with a user created password that will provide access to relevant collated wildfire information.
- d) Authorised persons are:
 - i. Sector Level: FPA sector leaders
 - ii. Fire Management Area Level: FMA and Municipal Disaster Management Coordinators
 - iii. District and Regional Level: CFO/FPO's, DDMC and FPA managers
 - iv. Provincial Level: PDMC Manager, PDMC Fire Coordinator and FSUFPA Executive Personnel.
- e) Fire Incident reports must be submitted on the Fire Incident Data Manager Application (ProFIDMApp) within 12 hours after a fire has been declared extinguished.