PROPOSED EXPANSION OF THE CAPE WINELANDS AIRPORT
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APPEAL DECISION: 14/3/1/A5/20/0705/26

# ANNEXURE 5 – VELDFIRE MANAGEMENT PLAN

OCTOBER 2026

DEA&DP IN-PROCESS NR: 16/3/3/2/A5/20/2046/24

# DRAFT VELDFIRE MANAGEMENT PLAN FOR THE PROPOSED EXPANSION OF THE CAPE WINELANDS AIRPORT

## (P10 OF FARM 724, RE OF FARM 724, P23 OF FARM 724, P7 OF FARM 942, RE OF FARM 474, P3 OF FARM 474 AND P4 OF FARM 474)

MARCH 2025




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# KEY TERMS AND ABBREVIATIONS

**Alien Vegetation Management Plan (AVMP)** - A strategic framework designed to control, manage, and reduce the impact of alien invasive plant species in a specific area.

**Applicant** – Capewinelands Aero (Pty) Ltd. The Applicant who is the landowner, person in control of the land, developer and operator of the airport will be responsible for the overall implementation of the FVMP.

**Auditing -** A systematic and objective assessment of an organization's activities and services conducted and documented on a periodic basis to a predetermined standard.

**Burn Unit** – A specific, clearly defined area of land designated for a controlled burn (prescribed burn) during fire management operations.

**CPFPA** - The Cape Peninsula Fire Protection Association

**CWA** – Cape Winelands Airport

**Crew Leader** – A suitably qualified firefighter responsible for overseeing a team of firefighters during both wildfire suppression and controlled burns.

**Defensible Space** - A carefully maintained natural or landscaped area surrounding a structure, intentionally designed to minimize fire hazards. This space acts as a buffer zone that reduces the risk of wildfire spreading to the structure and provides easier access for firefighting operations.

**Department of Environmental Affairs and Development Planning (DEA&DP)**– the provincial authority for sustainable environmental management and integrated development planning.

**Environmental Auditor –** An independent EAP appointed to conduct an audit of the environmental management systems in place for an organization or development.

**Environmental Manager (EM) –** Head of the CWA Environmental Management Division. The EM will oversee all aspects of the Environmental Management on site. The Environment Manager is responsible for ensuring that the organization meets its environmental policy commitments and improves its environmental performance.

**Environmental Management Division (EMD) –** Designated entity for overseeing and ensuring environmental compliance throughout the construction and operation of CWA.

**Environmental Management Programme (EMPr)** - An environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation, and decommissioning of a project are managed, and that positive benefit of the projects are enhanced.

**Environmental Control Officer (ECO)** – a suitably qualified environmental consultant to be appointed by the Applicant to oversee the implementation of the suite of Environmental Management Plans complied for the site, inclusive of this Veld Fire Management Plan.

**Fire Break -** A fire break is a gap in vegetation or other combustible material that acts as a barrier to slow or stop the progress of a fire.

**Fire Chief** / **Fire Control Officer (FCO)**– A suitably qualified firefighter to be appointed by the Applicant to oversee and manage all fire-related operations on-site. The Fire Chief will be responsible for overseeing the implementation of the VFMP, ensuring the firefighting team is operationally prepared, addressing potential fire risks, supervising both preventive and emergency response actions and reporting on such actions.

**Fire Danger Rating** - A rating system that provides an indication as to the fire risk for a specific area on a specific day. The system evaluates factors influencing fire danger systematically and represent them in the form of fire indices. The fire danger rating is mandated by Chapter 3, Section 9(1) of the National Veld and Forest Fire Act 101 of 1998 and is developed daily by the South African Weather Bureau.

**Firefighting Unit** – A dedicated team of professionally trained firefighters stationed permanently at CWA to handle all fire-related emergencies. The team will be established under the CWA EMD and will hold the primary responsibility for implementing and maintaining the Veldfire Management Plan (VFMP), ensuring adherence to fire safety protocols and addressing any fire risks that may arise during the development's operational phase.

**Fire Protection Association (FPA)** - Organization formed by landowners in wildfire-risk areas to prevent, predict, manage, and to assist with the extinguishing of wildfires under the National Veld and Forest Fire Act (Act 101 of 1998). FPAs are co-operative structures established between Local Authorities, the State, private landowners (and their lessees) in areas of high wildfire risk.

**National Environmental Management Act (Act 107 of 1998, as amended) (NEMA)**– national legislation that provides principles for decision-making on matters that affect the environment.

**Site -** Area where the proposed development will take place

**Veld Fire -** The National Veld and Forest Fires Act, Act 101 of 1998 defines a veldfire as a veld (bush), forest or mountain fire.

**Veld Fire Management Plan (VFMP)** - A document designed to guide the prevention, mitigation, and response to veldfires in fire-prone ecosystems. It outlines strategies for managing fire risks while protecting the ecological integrity of the landscape and minimizing the threat to human life, property, and biodiversity

# SECTION 1: CONTEXTUAL INFORMATION

## 1.1. Project Background

This report aims to supply Veldfire Management Plan (VFMP) for the proposed Cape Winelands Airport (CWA) Development. The development spans across the following cadastral portions (see Figure 1):

- Portion 23 of Farm 724,
- RE of Farm 724,
- Portion 10 of Farm 724,
- Portion 4 of Farm 474,
- RE of Farm 474,
- Portion 7 of Farm 942,
- Portion 3 of Farm 474.

*Overview of the proposed development:*

The CWA, historically known as Fisantekraal Airfield (FAFK), is located approximately 10.5 km northeast of Durbanville and 25 km northeast of Cape Town International Airport (CTIA) (see Figure 2). Initially constructed around 1943 as a South African Air Force aerodrome during World War II, CWA has since transitioned into a general aviation (GA) airfield. The current 150-hectare site includes four concrete runways, each 90 meters wide and varying in length between 700 meters and 1,500 meters. The facility supports various unscheduled operations such as recreational flying, flight training, aircraft maintenance, charter operations, crop spraying, and aerial banner towing.

The proposed development will expand the existing airport facilities, encompassing five additional cadastral portions, creating a combined area of 885 hectares. Of this area, 470 hectares will be allocated for airport development, including an airside precinct, terminal precinct, services precinct, general aviation precinct and associated landscaping (see Figure 3 & Figure 4). The remaining land will remain as agricultural zones, designated as an agricultural precinct (Figure 3 & Figure 4). This agricultural precinct will feature a combination of dryland agriculture, conservation of botanically sensitive areas, and wetland offsets.

The project envisions a phased development approach, including the realignment of a primary runway to an orientation of 01-19 with a length of 3.5 km. The upgraded CWA is planned to transition from a general aviation airfield into a commercial airport capable of facilitating long-haul, wide-body flights by airlines and unscheduled operators from across the world. The airport's expansion will serve multiple roles within the aviation sector and will

support a variety of industries, including fixed-based operations, private charter services, flight training, helicopter services, aircraft maintenance, hotel and conferencing facilities, retail and food services, warehousing, logistics, and freight operations.

This VFMP forms part of the overarching Environmental Management Programme (EMPr) for CWA and serves as a strategic framework designed to manage the risks associated with veldfires within the CWA premises and guidance on the management of risk from surrounding areas. The plan provides clear policies and guidelines for CWA's approach to veldfire management, covering all phases from prevention and preparedness to response and recovery. It outlines the necessary strategies and assigns responsibilities to ensure that fire risks are minimized, while also aligning the airport's development with environmental best practices.

This VFMP is limited to veldfires only. It does not extend to fires within the built-up areas or relate to other emergencies that may occur on airport premises. Response plans for these eventualities will be provided in the Emergency Response Plan that will be compiled for the proposed development. Furthermore, a complete and detailed Fire Protection Plan, for all the proposed buildings will be submitted during the building plan submission for the project.

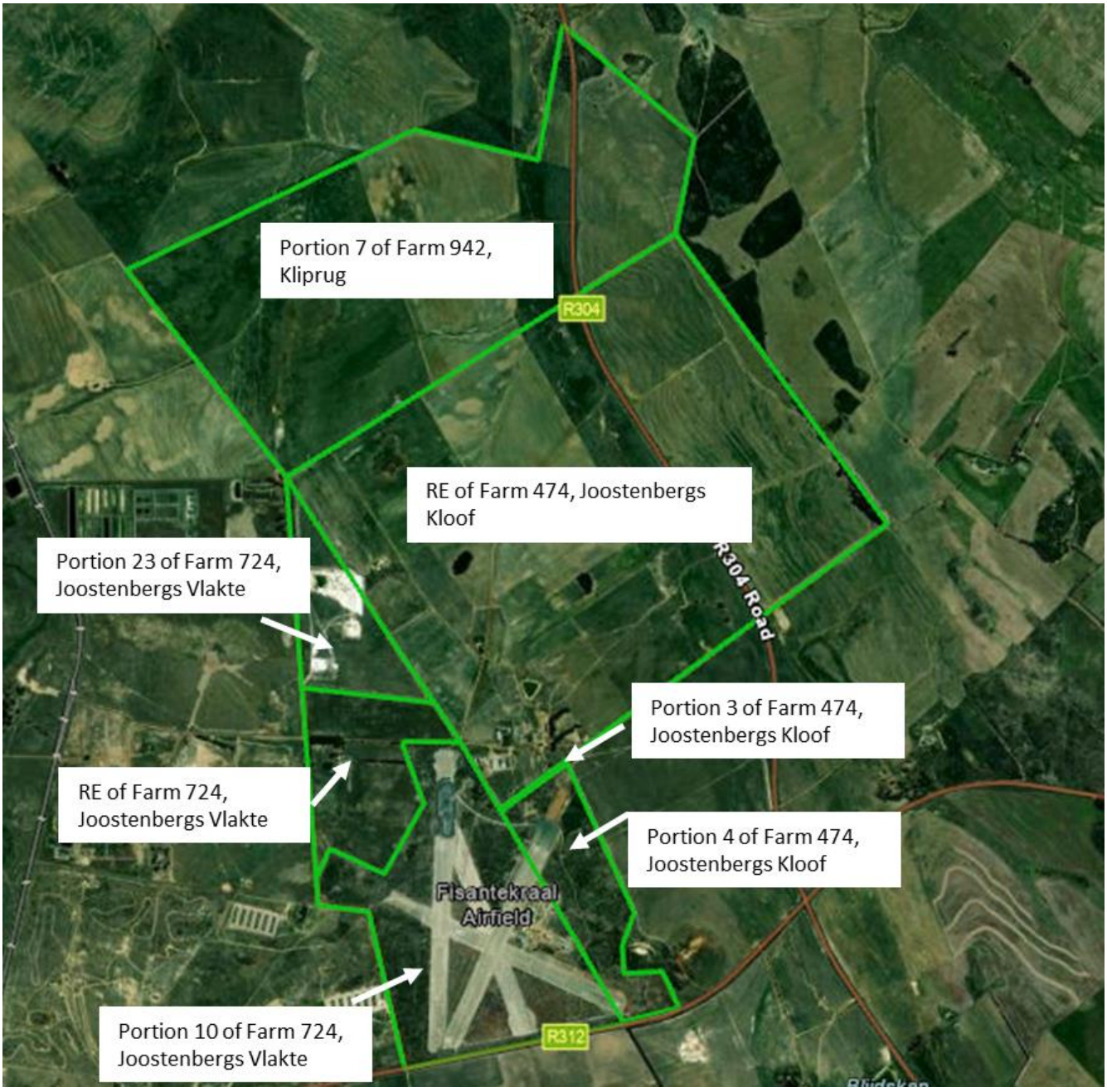



**Figure 1: Cadastrals forming part of application area**

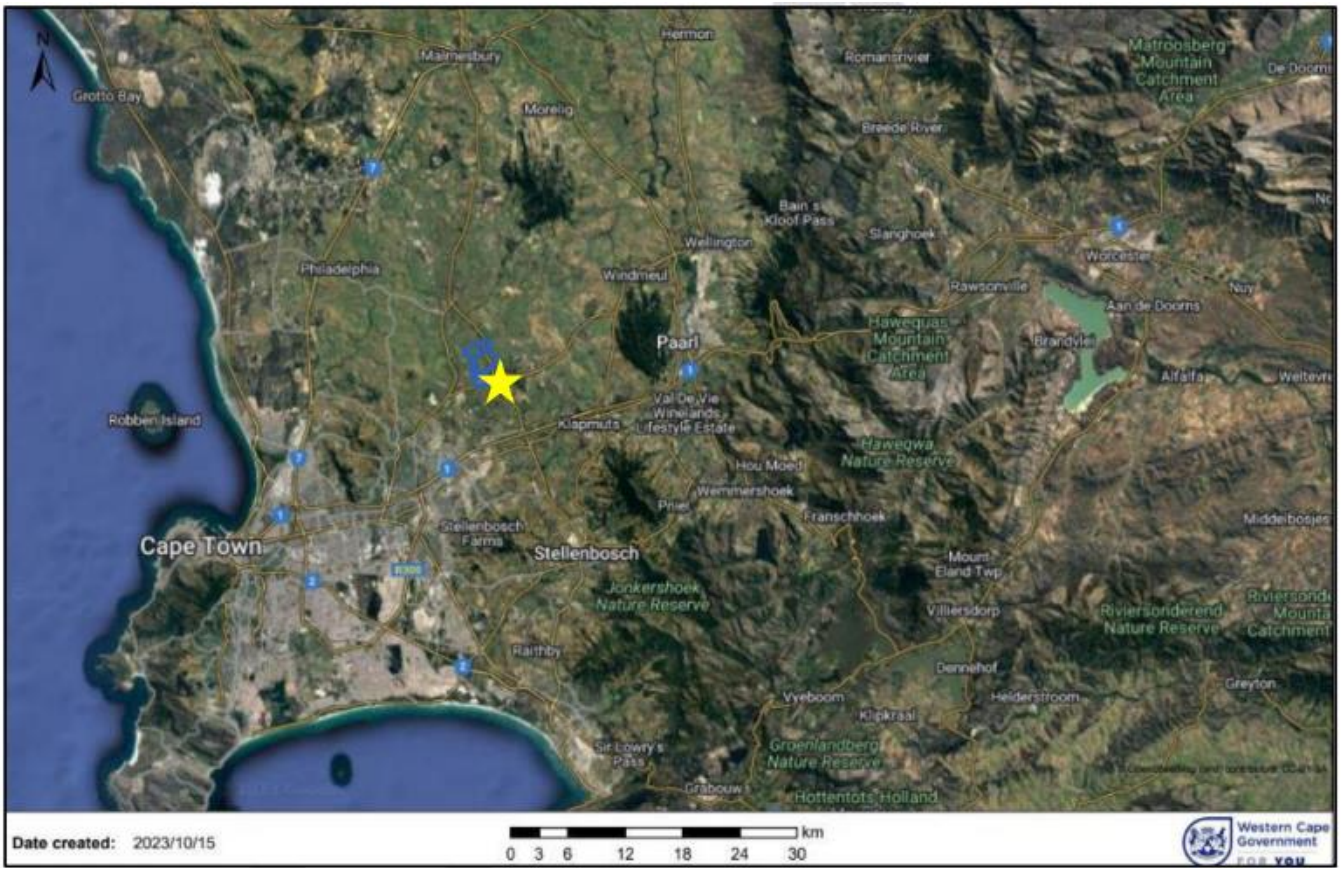



**Figure 2: Regional location of CWA (indicated by yellow star and with cadastrals outlined in blue) (PHS Consulting, Oct 2023)**




**Figure 3: Phase 1 preferred SDP - Precinct Plan (Capex, August 2024)**




**Figure 4: Phase 2 preferred SDP - Precinct Plan (Capex, January 2025)**

## 1.2. Purpose of the Veldfire Management Plan

The purpose of this VFMP is to ensure the safety of personnel and infrastructure, minimize environmental impact and ensure uninterrupted airport operations. To achieve these goals, the plan focuses on meeting the following objectives:

- **Protect Human Life:** Ensure the safety of all individuals, including staff and tenants, firefighters, and the public.
- **Safeguard Property and Assets:** Protect infrastructure and assets from veldfire damage.
- **Minimize Physical and Environmental Impact:** Reduce the adverse effects of veldfires and fire suppression techniques on both physical structures and the environment.
- **Promote Sustainable and Cost-Effective Protection:** Implement veldfire protection measures in an environmentally responsible and financially efficient manner.
- **Maintain Appropriate Fire Regimes:** Preserve environmental values by managing fire regimes through controlled burns that are suitable and necessary for conservation purposes.

## 1.3. Management Strategy

This fire management strategy takes a proactive approach to mitigating fire risks, guided by the following steps in the veldfire management cycle:

1. **Prevention:** Activities directed at reducing fire occurrence, including public awareness, law enforcement and the reduction of fire risks.
2. **Preparedness:** All activities designed to protect an area (including life, property, assets and values) from damage by fire.
3. **Response:** All the work and activities connected with fire-extinguishing operations, beginning with discovery and continuing until the fire is completely extinguished
4. **Recovery:** The process of returning a disturbed ecosystem or area as a result of a veldfire to its original state

Management objectives are essential for each stage of the veldfire management cycle. Prevention objectives focus on understanding the causes and potential impacts of veldfires. Preparedness objectives are informed by an

understanding of veldfire behavior. Response and suppression objectives rely on insights into both veldfire behavior and their impact. Finally, restoration objectives are guided by a comprehensive understanding of the aftermath and consequences of veldfires.

## 1.4. Relevant legislation and policies

The following is a list of the principal legislation for veld fire management in the Western Cape as relevant to the proposed development. All activities on site must ensure compliance with the provisions of the legislation as applicable:

- The Constitution of the Republic of South Africa (Act 108 of 1996)
- Fire Brigade Services Act, Act 99 of 1987
- National Veld and Forest Fire Act, Act 101 of 1998
- GN 1054 of 2005 - The National Fire Danger Rating System in terms of the National Veld and Forest Fire Act, 1998, Act no 101 of 1998
- Disaster Management Act, Act 57 of 2002
- Conservation of Agricultural Resources Act, Act 43 of 198
- National Environmental Management Act (Act 107 of 1998) – NEMA
- National Environmental Management: Air Quality Management Act, Act 39 of 2004
- National Environmental Management: Biodiversity Act, Act 10 of 2004
- Pollution Prevention Act, Act 45 of 1965
- National Water Act, Act 36 of 1998
- Occupational Health and Safety Act (No. 85 of 1993)
- Basic Conditions of Employment Act 75 of 1997

The National Veld and Forest Fire Act, Act 101 of 1998, is of primary relevance to the VFMP. This legislation provides the legal framework for the prevention and control of veld, forest, and mountain fires across South Africa. The Act clearly defines the responsibilities and obligations of landowners to actively prevent and manage veldfires. It establishes minimum enforceable standards, such as the creation and maintenance of firebreaks and ensuring preparedness measures are in place. Compliance with this Act is essential for effective fire risk management on the Cape Winelands Airport premises.

In addition, the development will adhere to the following:

- SANS 10400–T: 2024 and the Community Fire Safety By-law, Provincial Gazette 5832 (as amended 29 June 2007 and 21 August 2015):
    - A Fire Engineer (ECSA Registered) shall be appointed for this project.
    - A Complete and Detailed Fire Protection Plan, for all the proposed buildings are required to be submitted during building plan submission for scrutinizing and approval.
        - Fire hydrants to be provided as per SANS 10400 – T4.35
        - Provide access for emergency vehicles complying with the Community Fire Safety By-law.

        - Section 12 Provision of water for Fire Fighting (SANS 10400-W: 2011).
    - Storage and use of Flammable substances shall comply with Chapter 8 of the Community Fire Safety By-law.

## 1.5. Status of the Veldfire Management Plan

The VFMP must form part of all contractual documents for this project. The Environmental Authorization ascribes legal status to this Management Plan and any subsequent amendments thereto. The approval of the Management Plan by DEA&DP will require that the applicant and all appointed contractors must comply with the requirements herein. Any amendments/ changes/ upgrades to the Management Plan will require submission to and approval by DEA&DP.

This VFMP forms part of the contract identifying and specifying the procedures to be followed by contractors and employees of the facility to eliminate or reduce adverse fire risks associated with the proposed development. Should a contractor or employee persistently fail to observe the provisions of the Management Plan, the Environmental Control Officer (ECO) can recommend that the employee be removed from the site.

## 1.6. Responsibility and Enforcement of the VFMP

### 1.6.1. Applicant

The Applicant will be responsible for the overall implementation of the VFMP. The Applicant is accountable for the potential impacts of the activities that are undertaken and is responsible for managing these impacts. The Applicant has the overall environmental responsibility to ensure that the implementation of the operational requirements complies with the relevant legislation. The Applicant must ensure that he/she is fully familiar with the requirements of this VFMP, any relevant Environmental Authorization or any other legally binding documentation.

### 1.6.2. CWA Environmental Management Division

The CWA Environmental Management Division (EMD) will be established at the start of the construction phase to ensure environmental compliance throughout the project. The CWA EMD will appoint an Environmental Manager (EM) to oversee all aspects of the Environmental Management on site. The Environment Manager is responsible for ensuring that the organization meets its environmental policy commitments and improves its environmental performance. Not only do they monitor performance against and ensure compliance with relevant laws and regulatory requirements, but they are also proactive in identifying and promoting opportunities to reduce the environmental impact of the organization's activities, products and services.

Led by an Environmental Manager, the CWA EMD will consist of several teams for e.g. landscaping, waste management, alien species control, fire management etc. During the initial phases it could be one multitask team to be split as the tasks increases. Each team will have a Control Officer reporting directly to the EM. In the case of Velf Fires this would be the Fire Chief / Fire Control Officer. The Environmental Manager will oversee the implementation of Environmental Management Plans (EMPr), compliance with regulations, day-to-day environmental management of the site, managing the necessary applications, and overseeing external service providers such as the appointed Environmental Control Officer. Responsibilities also include internal audits and developing strategies for waste minimization and emissions reduction.

### 1.6.3. CWA Firefighting Unit

The designated onsite firefighting unit will be responsible for the implementation of the VFMP. Upon appointment, all crew members must receive comprehensive training on the VFMP's requirements, with ongoing training provided to any newly appointed team members throughout the operational phase. It is the responsibility of the applicant to ensure that this training is conducted.

A Fire Chief / Fire Control Officer must be appointed must be appointed within the EMD to lead the firefighting team and oversee the implementation of the VFMP. The fire control officer will assume overall responsibility for managing the VFMF, employees and contractors and ensure and oversee the implementation of the VFMP onsite in its entirety. All decisions regarding fire related environmental procedures and protocol must be approved by the fire control officer, who also has the authority to stop any activity in contravention of the VFMP. The role of is interactive and must include daily site visits.

**Key Responsibilities of the Fire Control Officer:**

- Assume overall command of fire response operations onsite.
- Provide training to all staff on VFMP requirements.
- Conduct regular monitoring of the site to identify potential fire risks.
- Perform routine inspections of firefighting equipment and machinery, documenting the results of each inspection.
- Compile and submit monthly monitoring reports to the ECO.
- Work closely with the ECO, applicant, and contractors to resolve any fire risk issues that arise.
- Maintain detailed records of all fire incidents and responses.

This list of responsibilities is not exhaustive, and the Fire Chief must remain adaptable to additional tasks as necessary for fire safety and compliance.

### 1.6.4. The Environmental Control Officer (ECO)

The Environmental Control Officer (ECO) is responsible for overseeing and verifying the proper execution of the EMPr during the construction and operational phase. This includes ensuring that various contractors working on-site comply with the waste management plan within their designated areas. During the construction phase, an independent Environmental Assessment Practitioner (EAP) firm must be appointed to serve as the ECO who will work alongside the EM. Once the project transitions fully into the operational phase, this function can be managed by an in-house ECO within the CWA Environmental Management Division who will report to the EM. During the construction and operational phases, monthly ECO reports must be prepared and submitted to the Department of Environmental Affairs and Development Planning (DEADP) during construction and to the EM during operations.

### 1.6.5. The competent authority

DEA&DP will review the EMPr and on approval they may have the following role to play:

- Review and monitor implementation of the VFMPr;
- Review whether there is compliance by the applicant;
- Perform random control checks;
- Review incident and audit reports;
- Enforce legal mechanisms for contraventions of the VFMP.

### 1.6.5. Engineers and Contractors

The engineers and contractors, where applicable, are responsible for physically carrying out certain development and maintenance activities. The responsibilities indicated here are also relevant to sub-contractors.
The responsibilities of the engineers and contractors include but are not limited to the following:

- Be conversant with the VFMP, EMPr, any relevant Environmental Authorization or any other legally binding documentation;
- Have a responsibility to adhere to any conditions and recommendations laid out in above mentioned documentation;
- Prevent actions that may cause harm to the environment;
- Be responsible for any remedial activities in response to an environmental incident;
- Review and amend any construction activities to align with the VFMP, EMPr and Best Practice Principles;
- Ensure compliance of all site personnel and / or visitors to the VFMP, EMPr and any other authorisations.

# SECTION 2: OVERVIEW OF SITE CONDITIONS

## 2.1. Climate

The proposed development site is located in a Mediterranean climate zone, with warm dry summers and mild wet winters. During the dry summer months vegetation can become dry and highly flammable, increasing the risk of veldfires. The average annual precipitation for the area is approximately 532mm/annum of which only 94mm (<20%) falls during the summer months (October – March) (GEOSS, Geohydrological Scoping Report, Sept 2023).

## 2.2. Vegetation and Landcover

The proposed development area forms part of the West Coast Renosterveld bioregion within the Fynbos biome located within what is now known as the Core Region of the Greater Cape Floristic Region (GCFR) (Nick Helme Botanical Surveys, Botanical Impact Assessment, September 2024). GCFR is highly biodiverse with high levels of endemism and is considered a global conservation priority with agriculture, urbanization, and alien plants posing the greatest threat, particularly to lowland habitats.

According to the South African Vegetation Map, the proposed airport precinct would naturally have been dominated by Swartland Granite Renosterveld (Endangered) along with smaller areas of Swartland Shale Renosterveld (Critically Endangered) and a minimal portion of Cape Flat Sand Fynbos (Critically Endangered) (Figure 5). These vegetation types require fire for optimal ecological functioning. Based on field verification, the appointed botanist however is of the opinion that the northern most remaining patch of natural vegetation should be classified as Swartland Silcrete Renosterveld which is Critically Endangered (Nick Helme Botanical Surveys, Botanical Scoping Study, February 2024).

### 2.2.1. Botanical Sensitivity

The Botanical Impact Assessment undertaken by Nick Helme revealed the following (Nick Helme Botanical Surveys, Botanical Impact Assessment, September 2024):

- About 93% of the site has been heavily disturbed and degraded over a long period of time, with the result that negligible indigenous vegetation is found in these areas, and these areas are of Low botanical sensitivity. Indigenous plant diversity is very low in the most disturbed parts of the airport precinct, and is low overall, compared to pristine Renosterveld, which would have at least 250 species in a site of this size (if pristine). There is no indigenous plant cover in the large cultivated areas in the agricultural precinct.

- Approximately 7% of the site (about 6.5ha) is deemed to be of Medium, High or Very High botanical sensitivity (Figure 6 - Figure 8).
- Two patches of very high sensitivity, four patches of high sensitivity and eight patches of medium sensitivity have been mapped in the airport precinct (Figure 6 & Figure 7) and two patches of very high sensitivity and two patches of medium sensitivity have been mapped in the agricultural precinct (Figure 8).
- Ideally all areas of Medium, High or Very High botanical sensitivity should be conserved and ideally, they would also all be ecologically connected via rehabilitated Low sensitivity areas. From a botanical perspective most of these areas would be ecologically viable, especially if connected by ecological corridors. Key ecological management interventions required would be ongoing alien vegetation management (pre and post burn) and management burns in the appropriate autumn season (once every 8-12 years).

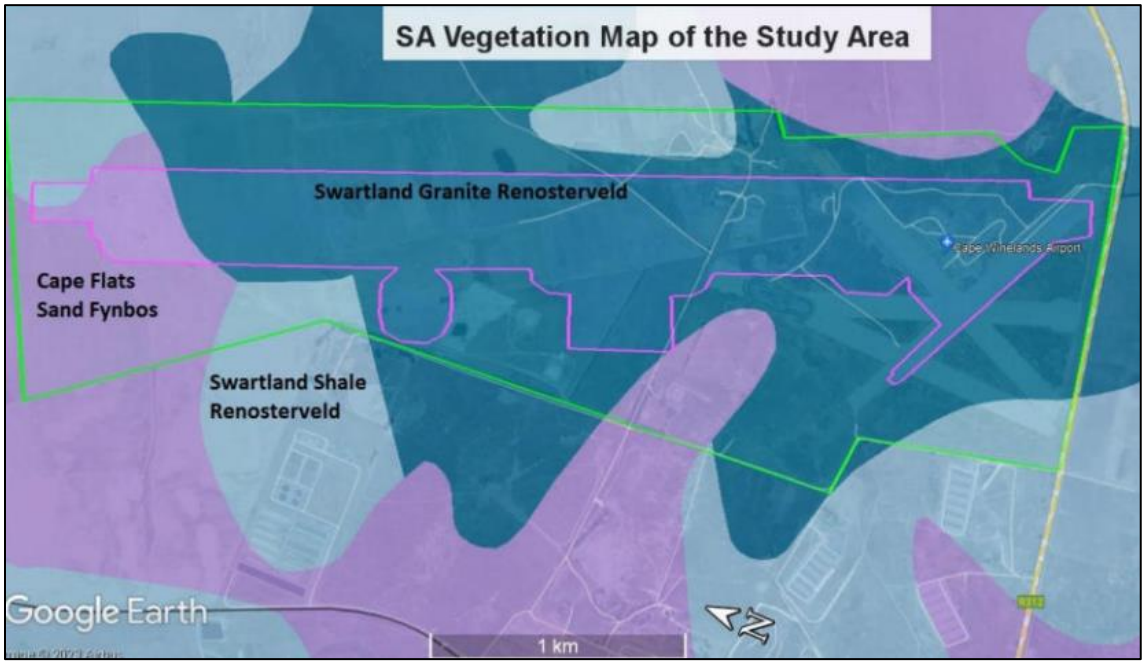



**Figure 5: Extract of the SA Vegetation Map (Mucin & Rutherford 2012) showing that three different vegetation types would originally have occurred in the primary study area (excluding the Agricultural Precinct), with Swartland Granite Renosterveld making up the bulk of the site. The green polygon is the study area, and the pink polygon is the airside development footprint (Nick Helme Botanical Surveys, Impact Assessment, September 2024).**

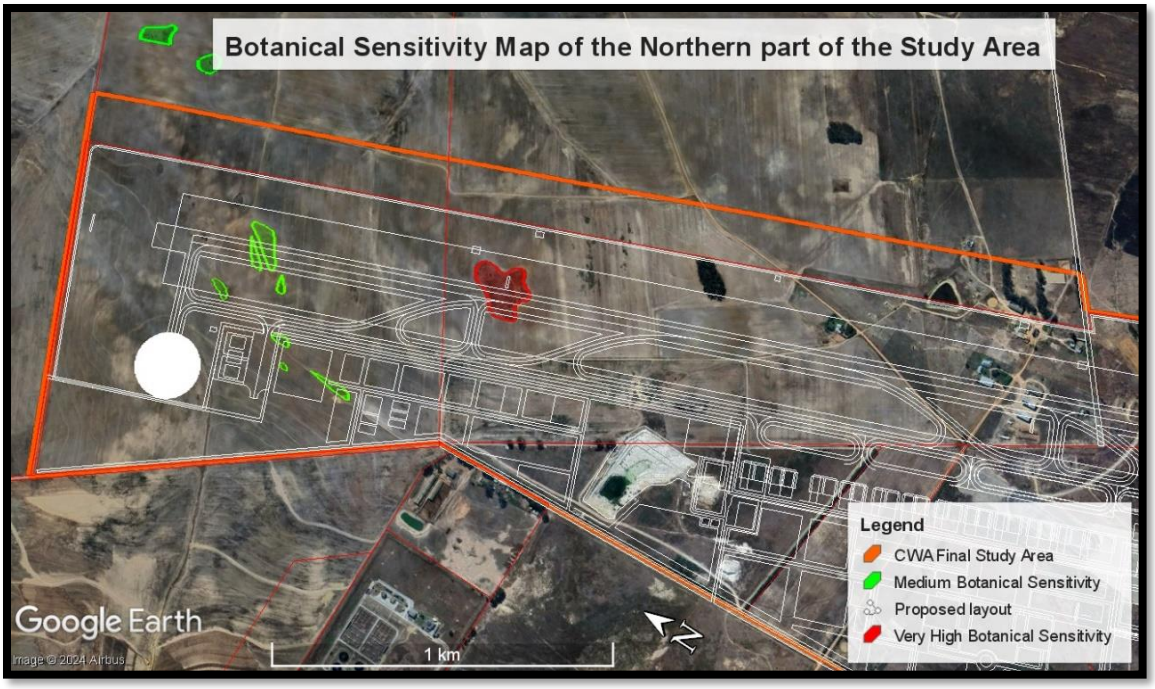



**Figure 6: Botanical sensitivity map for the northern part of the airport precinct. All areas not shaded green or red within the study area are of Low botanical sensitivity (Nick Helme Botanical Surveys, Impact Assessment, September 2024).**

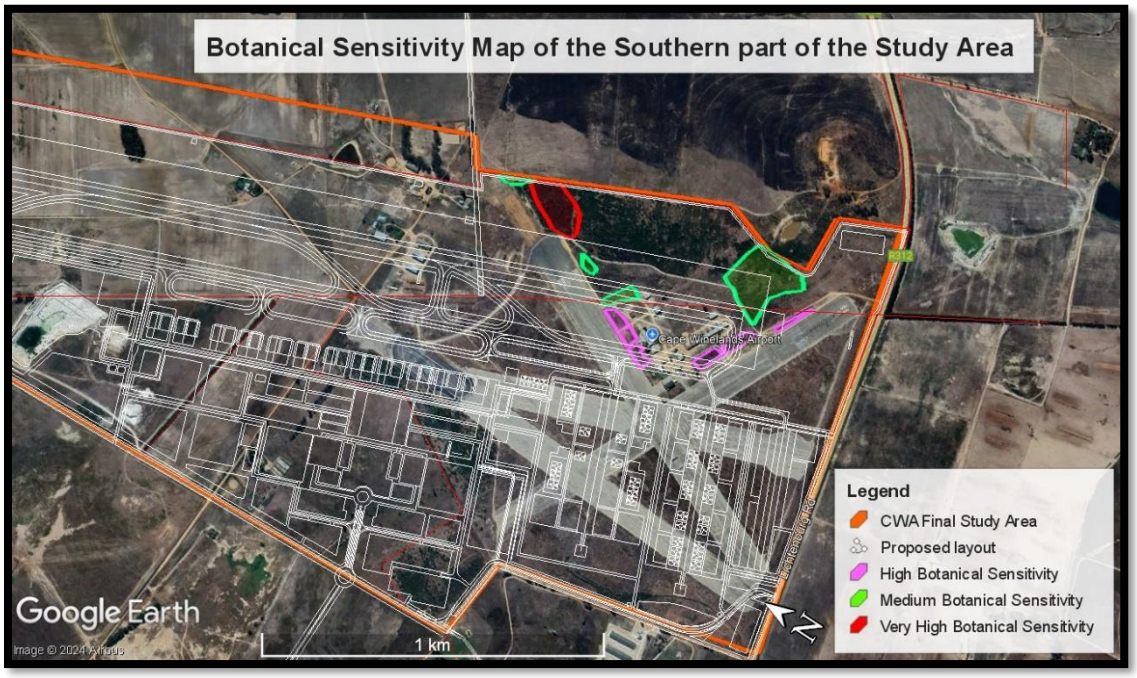



**Figure 7: Botanical sensitivity map for the southern part of the study area. All areas within the airport precinct not shaded green, red or pink are of Low sensitivity (Nick Helme Botanical Surveys, Impact Assessment, September 2024).**

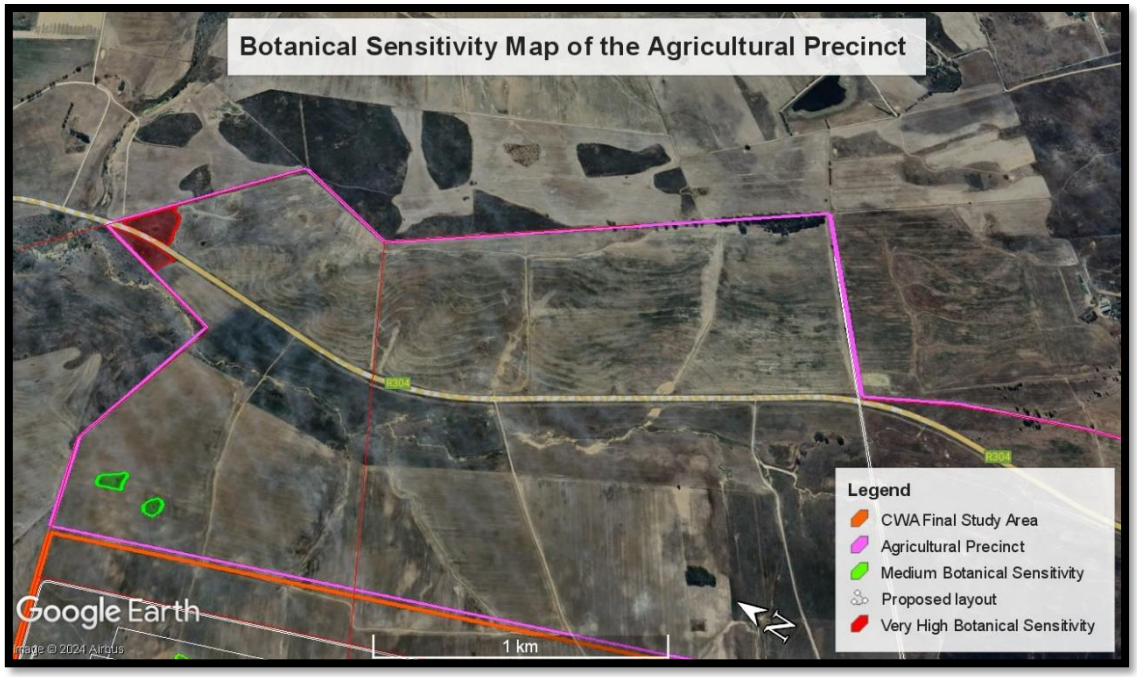



**Figure 8: Botanical sensitivity map for agricultural precinct. All areas not shaded green or red within the precinct are of Low botanical sensitivity (Nick Helme Botanical Surveys, Impact Assessment, September 2024).**

### 2.2.2. Current Status of Vegetation

The Botanical Impact Assessment reveals that approximately 93% of the study area and about 88% of the proposed development area has experienced extensive disturbance and degradation over time, leading to very limited indigenous vegetation within these areas (Nick Helme Botanical Surveys, Botanical Scoping Study, February 2024). The remaining natural habitat within the airport precinct is classified as Swartland Silcrete Renosterveld and Swartland Shale Renosterveld. In contrast, the agricultural precinct, currently under cultivation, has no indigenous plant cover.

The proposed development site is currently affected by woody alien invasive species, predominantly *Acacia saligna* (Port Jackson), along with scattered *Leptospermum laevigatum* (Australian myrtle), *Pinus* species (pines), and *Eucalyptus* species (gums). A significant portion of the airport precinct was cleared of invasive woody vegetation in late 2020 and early 2021, with previous invasive coverage ranging from 50% to 100%. Despite the biocontrol fungus infecting many of the Port Jackson trees, leading to reduced seed production and some plant mortality, it is highly probable that a substantial seed bank remains onsite which could result in prolific regrowth following a fire or similar clearing event (Nick Helme Botanical Surveys, Botanical Impact Assessment, September 2024).

### 2.2.3. Extent of proposed vegetation removal

The proposed development will involve the removal of vegetation across the entire airport precinct, with the exception of three designated conservation patches as outlined in the landscaping plan (Figure 9). These conservation areas include:

- 1.6 hectares of very high conservation value vegetation
- 0.2 hectares of medium conservation value vegetation
- 1.6 hectares of additional medium conservation value vegetation

No additional vegetation removal is planned within the agricultural precinct. Existing cultivated areas will remain dedicated to agricultural use, while certain sections of the precinct will be rehabilitated as part of the wetland offset plan (Figure 10).

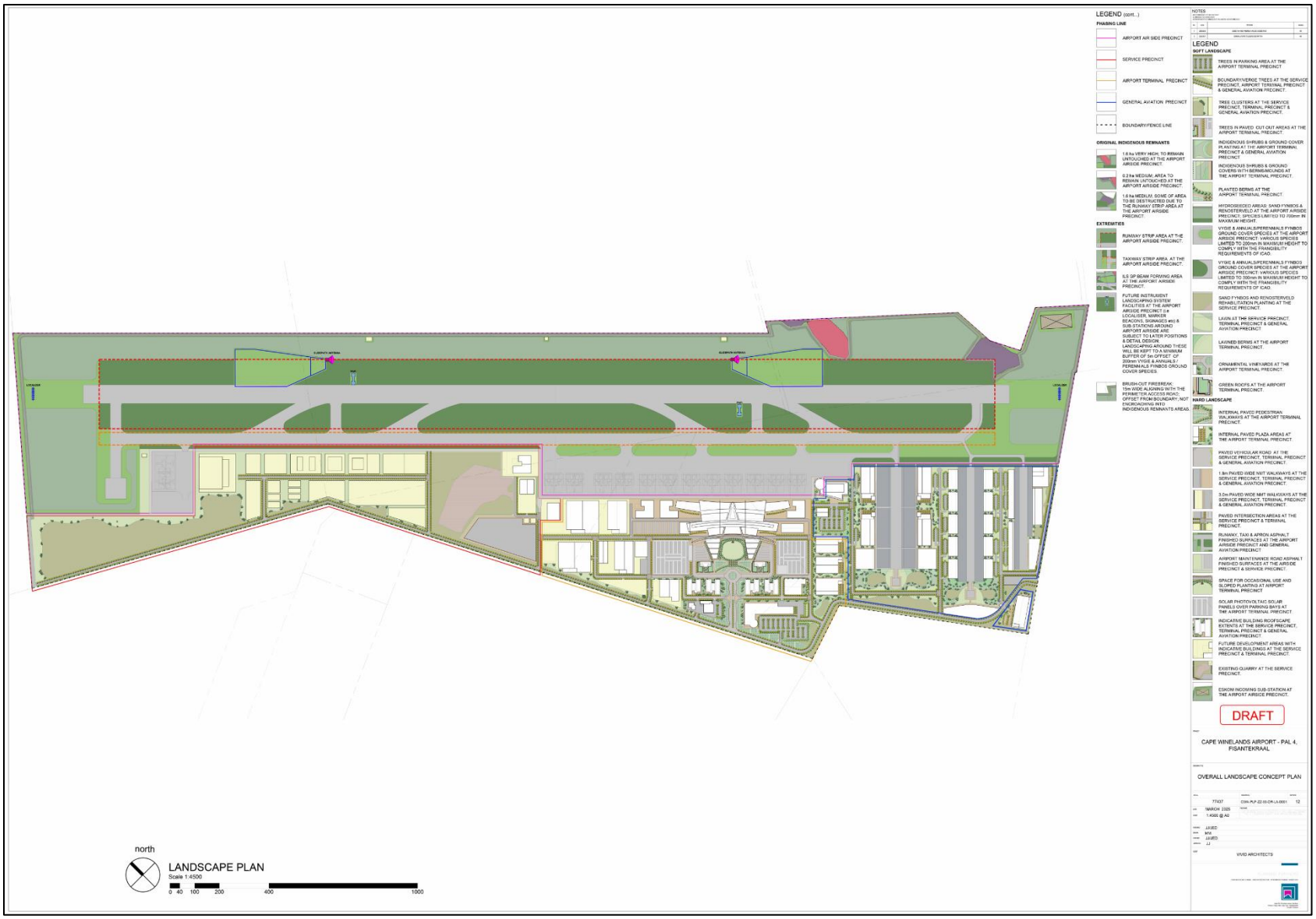



**Figure 9: Cape Winelands Airport Landscape Concept Plan (Planning Partners, March 2025)**

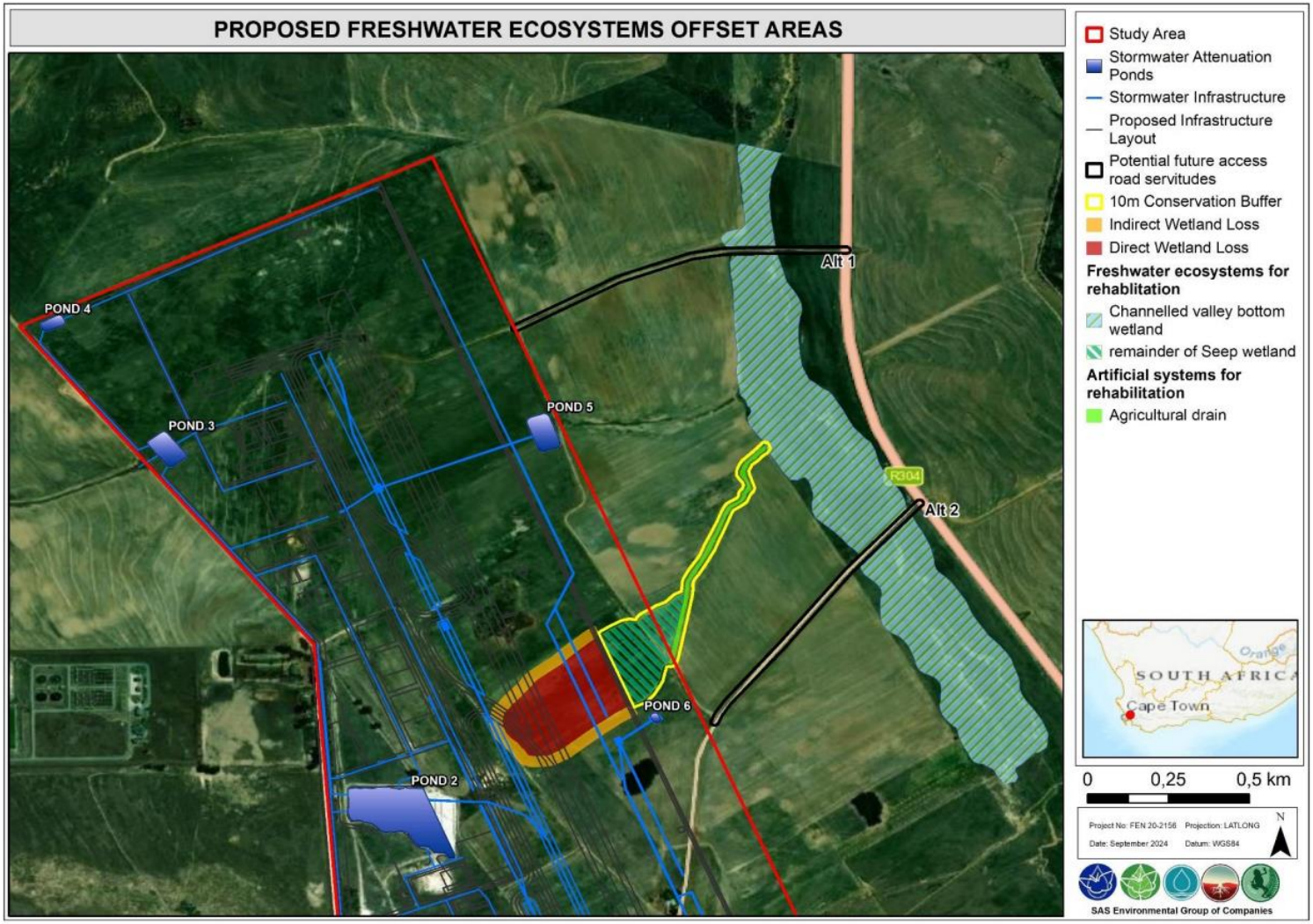



**Figure 10: Extent of wetland to be lost (7.44 ha) vs identified wetland areas to be rehabilitated (FEN, Draf Wetland Offset Study and Implementation Plan, September 2024).**

## 2.3. Fire History

Although Renosterveld, the natural vegetation of the area, is a fire-dependent ecosystem requiring burns every 8-12 years for optimal ecological function, the majority of the proposed development area has not experienced a fire in the past 14-25 years, as evidenced by site vegetation and historical satellite imagery dating back to 2004 (Nick Helme Botanical Surveys, Botanical Scoping Study, February 2024). Consequently, much of the indigenous vegetation on site is considered senescent and overdue for a burn. In the absence of fire for over 15-20 years, plant species diversity typically declines rapidly, but can recover dramatically post-fire due to the activation of soil-stored seed banks.

## 2.4. Landscaping Plan

A comprehensive landscaping plan has been developed for the airport precinct, as shown in Figure 9. The landscaping will incorporate fynbos and renosterveld planting, using specific species to achieve the required vegetation heights for airport operations. The development will also preserve patches of high botanical sensitivity (Figure 6 to Figure 8) and include wetland offsetting within the agricultural precinct (Figure 10).

A key ecological management action for areas landscaped with natural fynbos or renosterveld vegetation, as well as conservation zones, will involve conducting controlled management burns during the appropriate autumn season, approximately every 8-12 years. Further details on these controlled ecological burns are outlined in Section 3.3 of this VFMP.

### *Firescaping*

Firescaping is the practice of creating a defensible space around buildings by incorporating fire-resistant plants, proper spacing, and strategic landscaping techniques. When planning fynbos or renosterveld planting near the building line, firescaping can be applied by incorporating more fire-resistant, succulent species. These include varieties from the Vygie family, such as *Lampranthus, Malephora, Drosanthemum, Delosperma, and Carpobrotus*, all of which have fleshy leaves that are highly resistant to fire. Alternatively, maintaining hand-cut firebreaks for at least 15m around buildings and other structures can also help reduce fire risks.

# SECTION 3: FIRE PREVENTION

Fire prevention focuses on preventing the ignition of fires and minimizing the impact of any fires that do occur. Fire prevention is proactive.

## 3.1. The National Fire Danger Rating System

Chapter 3 of the Veldfire Act provides for the prevention of veldfires through a fire danger rating system. The South African Weather Services (SAWS) each day develops a rating for the day and a prediction for the following day. The Fire Danger Index (FDI) ratings as prescribed by the National Fire Danger Rating System in Terms of the National Veld and Forest Fire Act, 1998(Act No 101 Of 1998) – GN 1054 of 2005 uses 5 categories to rate the fire danger represented by color codes as indicated in Table 1 below.

All on-site firefighting personnel are required to monitor the Fire Danger Index (FDI) daily throughout the construction and operational phase of the development. When the FDI is 'High' or 'Very High' these ratings must be communicated to all relevant contractors, workers, and team leaders active on the site. This protocol will enable all personnel to adjust their activities in line with the prevailing fire conditions. The on-site firefighting teams must leverage the FDI data to implement proactive measures aimed at minimizing the risk of unintended ignitions and enhancing readiness for potential veldfires.

When the FDI rating is classified as 'High' or 'Very High,' the following proactive measures should be actioned:

- Restrict or modify high-risk activities such as:
    - Suspend all outdoor burning and heating
    - Limit the use of ground support equipment that involves combustion or high heat if they are not essential.
    - Delay any activities that involve open flames or high heat sources, including maintenance and construction that could produce sparks such as welding.
    - Implement stringent safety measures and increased supervision during aircraft refuelling operations.
    - Avoid the use of brushcutters for bushclearing or maintenance of fire breaks as this can result in sparks igniting the vegetation.
    - Avoid the use of chainsaws for tree felling as this can result in sparks igniting the vegetation – sparks are usually caused due to poor maintenance of the machine.
- Heightening surveillance across the site.
- Ensuring that all firefighting equipment is fully operational and that personnel are prepared for immediate deployment if a fire occurs.

Additionally, the FDI should inform the firefighting team's assessment of veldfire behaviour, guide control strategies, and determine the necessary actions corresponding to each fire danger level.

**Table 1: Fire Danger Ratings**

| DANGER RATING | INSIGNIFICANT | LOW | MODERATE | HIGH | HIGH - EXTREME |
|---|---|---|---|---|---|
| *Indicative Colour* | *Blue* | *Green* | *Yellow* | *Orange* | *Red* |
| **FIRE BEHAVIOUR** | Veldfires are not likely to ignite. If they do, they are likely to go out without suppression action. There is little flaming combustion.<br><br>Flame lengths generally lower than 0.5 metre.<br><br>Rates of forward spread less than 2 metres per minute. | Veldfires likely to ignite readily but spread slowly.<br><br>Flame lengths generally lower than 1.2 metres.<br><br>Rates of forward spread less than 5 metres per minute. | Veldfires ignite readily and spread rapidly.<br><br>Flame lengths between 1.2 and 2 metres.<br><br>Rates of forward spread between 5 and 25 metres per minute. | Veldfires ignite readily and spread very quickly.<br><br>Local crowning and short-range spotting.<br><br>Flame lengths between 2 and 5 metres.<br><br>Rates of forward spread between 25 and 35 metres per minute. | Conflagrations are likely in fynbos, stands of alien invasive trees and plantation forests.<br><br>Long range fire spotting is likely in these fuel types.<br><br>Flames lengths between 5 to 15 metres or more.<br><br>Rates of forward spread of head fires can exceed 60 metres per minute. |
| **FIRE SUPPRESSION DIFFICULTY** | Veldfires easily approached and suppressed using hand tools. | Veldfires can safely be approached on foot and suppression is readily achieved through direct manual attack methods. | Direct attack constrained as veldfires are not safe to approach on foot for more than very short periods.<br><br>Back burning from control lines can be undertaken if prevailing conditions are safe. | Serious control problems where - depending on fuel loads and prevailing weather - direct attack is not always feasible.<br><br>Control through a combination of direct attack and indirect control measures such as aerial water bombing.<br><br>Back burning should only be used after careful consideration. | Any form of fire control is likely to be precluded until weather conditions become more favourable.<br><br>Equipment such as fire tenders should be used to protect properties on the urban edge.<br><br>Back burning is dangerous and should be avoided. |

| | | | | | |
|---|---|---|---|---|---|
| FIRE PREVENTION AND PREPAREDNESS MEASURES | No precautions are needed | Fires including prescribed burns may be lit, used or maintained in the open air on the condition that persons making fires take reasonable precautions against such fires spreading.<br><br>Keep a watch for unexpected changes in wind speed and direction. | No fires may be allowed in the open air except in designated fireplaces authorised by a Fire Protection Officer where a Fire Protection Association exists, or elsewhere, the Chief Fire Officer of the local fire service.<br><br>Extreme caution should be taken when prescribed burning is undertaken. | No fires may be allowed under any circumstances in the open air.<br><br>Fire Protection Associations and Municipal Disaster Management Centres must invoke contingency fire emergency and disaster management plans. | No fires may be allowed under any circumstances in the open air.<br><br>All operations likely to ignite fires halted.<br><br>Householders placed on alert. Fire Protection Associations and Provincial Disaster Management Centres must invoke contingency fire emergency and disaster management plans including extraordinary readiness and response plans. |
| **RECOMMENDED ACTIONS** | None | None, other than prudent care to ensure that any open-air fires do not escape.<br><br>Prescribed burning permissible. | Open-air fires should only be permitted in authorised fireplaces.<br><br>Prescribed burning should be conducted with care, and any prescribed veldfires should be extinguished should the forecast fire danger-rating turn to high. | Ensure all staff and visitors are aware of prevailing high fire danger rating.<br><br>High risk areas should be put on standby for evacuation, should the fire danger conditions forecasted become worse.<br><br>All efforts should be made to bring any veldfires under control with maximum effort. | Fire-fighters and equipment placed on stand-by and be dispatch immediately at the first sign of a fire.<br><br>High risk areas to be evacuated.<br><br>Equipment such as helicopters and water tenders should concentrate efforts on the protection of houses and other structures. |

| | | | | | |
|---|---|---|---|---|---|
| **APPLICATION OF THE NATIONAL VELD AND FOREST FIRE ACT, 101 of 1998** | | | Above precautionary measure to be prescribed and made applicable nationally on days rated moderate. | Section 10(1)(b) of the National Veld and Forest Fire Act applies: no person may light, use or maintain a fire in the open air. | Section 10(1)(b) of the National Veld and Forest Fire Act applies: no person may light, use or maintain a fire in the open air. |
| **RELATIONSHIP WITH DISASTER MANAGEMENT** | | | | The threat of disastrous wildfires exists at municipal level under these conditions.<br><br>Municipal Disaster Management Centres must invoke contingency plans and inform Provincial Disaster Management Centre. (Section 49 of the Disaster Management Act, 57 of 2002). | The threat of disastrous wildfires at provincial level exists under these conditions.<br><br>Provincial Disaster Management Centre must invoke contingency plans and inform National and Disaster Management Centre. (Section 49 of the Disaster Management Act, 57 of 2002). |

## 3.2. Sources of fire

Understanding and managing the various sources of fire is essential to reducing the likelihood of fire outbreaks and minimizing their impact when they do occur. Likely sources of fire at the Cape Winelands Airport can be divided into three areas namely, natural sources, external activities, and onsite activities. Further details of potential fire sources, along with corresponding preventative measures, are provided in Table 2.

**Table 2: Overview of potential Fire Sources and Management Actions for Effective Fire Prevention at the Cape Winelands Airport**

| Source | | Risk | Prevention Action |
|---|---|---|---|
| Natural Sources | Lightning strikes when vegetation is dry | Natural ignition | Monitor weather conditions; deploy response teams during high-risk periods. |
| External Activities | Fire Spreading from Neighboring Properties | Fires from adjacent properties can spread across boundaries, increasing fire risk. | Establish firebreaks along property boundaries; communicate with neighboring landowners; collaborate on fire management. |

| | | | |
|---|---|---|---|
| | Intentional Fire Setting | Intentional fire-setting poses a fire risk. | Implement surveillance systems; promote community reporting; collaborate with law enforcement to detect and prevent arson. |
| Human Activities Onsite | Construction and Maintenance Work | Sparks from activities like welding and grinding can ignite dry vegetation. | Implement safety protocols, including fire watch personnel and equipment checks and ensure proper ventilation in work areas. |
| | Vehicle-Related Fires | Sparks from vehicles, especially off-road, can ignite dry vegetation. | Perform regular vehicle maintenance; establish firebreaks along access roads. |
| | Powerlines | Faulty or downed power lines can spark fires, especially in windy conditions. | Conduct regular inspections and maintenance; create firebreaks under and around power lines. |
| | Green Waste Stockpiles | Accumulated green waste can spontaneously combust, leading to fires. | Avoid stockpiling large amounts of green waste and ensure regular removal. |
| | Agricultural & Conservation Practices | Controlled burns can become uncontrolled, leading to wildfires. | Require clear guidelines and permits; closely monitor all burning activities. |
| | Aircraft Crash | A crash can result in a significant fire, particularly in or near natural areas. | Develop emergency response plans with specific protocols for aircraft-related fires; coordinate with aviation authorities. |

## 3.3. Veld management

Given that natural, fire-adapted and fire-dependent fynbos and renosterveld vegetation will be present within the airport precinct as per the landscaping plan (Figure 9) as well as within the agricultural precinct, veld management will play an important role in the prevention of unplanned veld fires.

### 3.3.1. Prescribed Burning

Prescribed burning is a critical intervention for managing fire-prone and fire-adapted ecosystems like fynbos. In these environments, controlled burns help reduce fuel loads, minimizing the risk of uncontrolled wildfires while maintaining species diversity and essential ecological functions. The designated onsite firefighting unit will be the implementing agent for any necessary controlled burns within CWA property. Controlled burns must take numerous factors into account, and it is subject to a permitting process as outlined below:

*Ecological Considerations*

Variability in veldfire management is key to maintaining biodiversity. While there is no single "ideal" fire interval, it is important to vary the frequency of burns between 8 and 20 years, with an optimal range of 12 to 18 years. Burning too often (under 8 years) can harm species that haven't fully matured, while infrequent burns (over 25 years) can result in the loss of other species. Strict rotational burns are not practical, as unplanned wildfires and natural variability in fire intervals play a crucial role in promoting biodiversity. Additionally, veldfire intensity and size of the area burnt are important factors, as they influence species recovery and seed predation. Managing veldfires requires attention to a combination of ecological criteria such as vegetation age, species composition, fuel loads, and prevalence of invasive species to determine whether the ecosystem is ready for a controlled burn.

To effectively manage the natural vegetated areas within the site, it is recommended that an assessment of the veld condition be conducted at least every eight years by a suitably qualified botanist. The condition of areas with a medium, high and very high botanical sensitivity must however be monitored annually by a suitably competent botanist (or CoCT Environmental Management Dept.). The botanist will provide a recommendation on whether the vegetation is in need of a controlled burn and if the next assessment should be delayed or moved forward.

*Climatic Considerations*

Prescribed burns should be conducted under specific weather conditions to ensure safety and effectiveness while minimizing the risk of uncontrolled fires. Key weather conditions include:

1. **Temperature**: Moderate temperatures, typically between 10°C and 25°C, are preferred. Higher temperatures can increase fire intensity and make it harder to control.
2. **Wind**: Winds should be steady and not too strong, usually between 8 and 20 km/h. Strong winds can spread the fire too quickly, while calm conditions can lead to erratic fire behaviour due to insufficient ventilation.
3. **Fuel Moisture**: Moisture in the vegetation (fuel) should be balanced—not too wet or too dry. Dry fuel burns too intensely, while wet fuel will not ignite easily.

These factors, along with thorough monitoring of the fire danger ratings for the region, should guide the decision to undertake a prescribed burn.

*Permitting Procedure*

No one may carry out open burning of any material on any land or premises unless the person has first obtained written authorization for open burning from the City's Air Quality Management Unit. Examples of open burning

include biodiversity burns of open veld, burning of agricultural stubble, and stack or fuel load reduction burns of biomass. Should it be determined that a prescribed burn is needed, a burning permit must be obtained by following the following steps:

1. Application Form: Download and complete the 'Open Burn Application Form' from the City of Cape Town or Cape Peninsula Fire Protection Associations website along with all required supporting documents as outlined in the application form. The burn period designated for Prescribed / Ecological / Biodiversity Burns is from 1 February to 30 April and from 1 September to 30 November.
2. Public Participation: Part of the Open Burn Permit application process requires that an applicant notify neighbouring properties regarding their intention to apply for an Open Burn Permit. This can be achieved by:
    - **Emailing notification letter to neighbouring properties**, includes Air Quality officials in the e-mail to serve as proof of the process.
    - **Letter drops**, take photos of letter drops to serve as proof of the process and include photos in submission of application.
    - **Place a notification in the local newspaper**, include a copy of the newspaper article/notification in the submission of application.
3. Submission: The completed and signed Open Burn Permit application form together with supporting documentation must be submitted to the City's Air Quality Management Unit at Bronwyn.Davidson@capetown.gov.za.

    Once the City's Air Quality Management Unit has received your application it will be reviewed followed by a joint site inspection by the Air Quality Management Department and Fire and Rescue Services. The proposed burn site/s should be prepared and ready prior to inspection.

Controlled burns may only be conducted on days with a low fire danger rating. Additionally, before any prescribed burn takes place, CWA must notify local Fire Rescue Services as well as any adjacent landowners to ensure they are informed and prepared for the event.

*Controlled burns on neighboring properties*

Controlled burns are a common agricultural practice on neighbouring properties. While the frequency of these burns has decreased in recent years, it remains an integral part of local agricultural management, and it is unlikely that the practice will be completely phased out.

Landowners wating to carry out a controlled burn must obtain the necessary permits from the City of Cape Town. Burns are only permitted on days with a low fire danger rating and typically occur between March and mid-April. Prior to conducting a burn, neighbours are required to notify local fire and rescue services. Additionally, should burns be required in close proximity to the airport, neighbours will also inform airport management.

*Firebreaks*

The western (landside) section of the landscaping plan features fynbos and renosterveld vegetation planted in well-defined blocks, as outlined in Figure 5. These blocks should be treated as individual management units for prescribed burning. Existing roads and pathways between the blocks can act as natural firebreaks. In areas without defined planting blocks, strategic firebreaks must be created by brush-cutting vegetation within each designated burn unit. In all cases, a firebreak—either existing or created through brush cutting—must be established around the perimeter of the designated burn unit before conducting a prescribed burn. This ensures containment and enhances safety during the burn operation.

*Standard Operating Procedures*

For large, controlled burns on and off site that may affect visibility and disrupt aviation activities, a Standard Operating Procedure (SOP) will need to be developed to ensure effective coordination between aviation operations and airport management teams. This SOP will establish protocols for managing potential risks to visual aviation, outlining clear communication channels between fire management teams, air traffic control, and airport authorities. Developing this SOP will be critical to minimize disruptions to aviation while maintaining safe and effective fire management practices.

*High Botanical Sensitivity Arras*

Once all alien invasive vegetation has been removed from the conservation areas (as per the Alien Vegetation Management Plan outlined for the site) (Figure 6 - Figure 8) all these areas must be subject to planned (controlled) burn regimes starting the following autumn, as this vegetation needs fire for optimal ecological functioning. The Very High sensitivity areas are the priority areas for ecological burns, which must be undertaken in the period

February – March. Burns should be professionally managed. The botanically sensitive areas will need to be burnt every 8-12 years for optimum ecological functioning.

Prior to the controlled burn firebreaks should be brushcut by hand around the perimeter of the sensitive areas (not within them) using handheld brushcutters.

The condition of all Very High, High and Medium sensitivity areas (Agricultural Precinct and on site) should be monitored every year by a suitably competent botanist (or CoCT Environmental Management Dept.), and they should make recommendations for any management changes or actions (alien clearing, lack of fire, etc.) that are needed in order to achieve optimal ecological functioning in these areas.

*Pre-Development Burn*

According to the botanical scoping report the majority of the indigenous vegetation on the site is overdue for a burn. To reduce potential fire hazards during the development phase, it is recommended that a controlled burn be conducted prior to the onset of construction.

### 3.3.2. Alien Vegetation Management

Managing invasive alien vegetation assists in reducing fire risk and preserving the ecological health of natural habitats. Alien species, such as pines and wattles, typically produce more biomass than indigenous fynbos, resulting in denser vegetation that increases fire intensity. Additionally, alien plants can disrupt the natural fire regime, negatively impacting the ecological integrity and biodiversity of native vegetation. To protect these ecosystems, alien vegetation must be continuously removed, following the guidelines outlined in the Alien Invasive Vegetation Management Plan for the site (Annexure 6 to the overall EMPr)

## 3.4. General Prevention Measures

In addition to the measures mentioned above the following general fire safety practices should be implemented onsite to prevent veldfires from occurring:

- Restrict or regulate outdoor activities that could pose a fire risk, such as smoking or using open flames, to designated areas that are well away from flammable materials and high-risk zones.
- Regularly inspect and maintain ground support equipment and machinery to ensure they are in good working condition and free from faults that could cause sparks or heat.
- Implement strict protocols for the use of equipment that generates heat or sparks, such as grinding or welding tools. Ensure these activities are carried out in designated, fire-safe areas.

- Ensure that fuel storage areas are properly managed, with clear guidelines for safe storage, handling, and disposal of flammable materials.
- Implement a hot work permit system for activities that involve welding, cutting, or other tasks that produce sparks or heat. Ensure these activities are only conducted under controlled conditions.
- Conduct regular patrols of the airport grounds to monitor for potential fire hazards and ensure compliance with fire safety protocols.
- At the onset of the fire season cut long grasses and dense shrubs and remove all dead material.
- Keep gutter free of leaf litter and other combustible materials.
- Trim branches away from power lines and telephone lines

# SECTION 4: FIRE PREPAREDNESS

The objective of fire preparedness is to ensure that the airport is equipped to facilitate fast and effective response to any fire incident that may occur on-site or pose a threat to the facility and its operations. The level of preparedness should be based on the daily Fire Danger Rating. Firefighting personal must use Table 1 to understand veldfire behavior and veldfire control actions required for each fire danger rating class. Nevertheless, basic preparedness should be maintained throughout the fire season, irrespective of the Fire Danger Rating.

## 4.1. Fire Protection Association

Chapter 2 of the National Veld and Forest Fire Act (Act No. 101 of 1998) provides for the establishment of Fire Protection Associations (FPAs) by landowners to predict, prevent, manage, and extinguish veldfires. FPAs are voluntary associations formed by landowners in wildfire-prone areas, but membership is mandatory for municipalities and state landowners within the FPA's jurisdiction.

FPAs support landowners in fulfilling their responsibilities under the Act by offering compliance advice, coordinating fire management plans, distributing the daily fire danger rating to all members during wildfire season, facilitating shared fire breaks, and providing training opportunities. They also serve as a platform for coordinating efforts and sharing resources during large wildfire incidents.

The Cape Peninsula Fire Protection Association (CPFPA), established in 2003, covers the entire Cape Metropolitan area, including the proposed CWA development site. The CWA should become a member of the CPFPA, which is divided into three management wards: the West Ward (Peninsula), the East Ward (Cape Flats, Somerset West, Steenbras), and the North Ward (Durbanville, Klipheuwel, Philadelphia, Atlantis, Mamre). The CWA site is located in the North Ward.

## 4.2. Firebreaks

Establishing and maintaining effective and permanent firebreaks is essential for controlling veldfires, as they provide critical access points for fire response teams, create safe zones for firefighting efforts, and help prevent the spread of fire. Firebreaks are required to comply with Section 21(1) of the National Veld and Forest Fires Act (No. 101 of 1998), which mandates that every landowner must prepare and maintain a firebreak on their side of the boundary between their land and any adjoining land where a veldfire may start, burn, or spread.

To optimize firebreak effectiveness and site accessibility, the layout of firebreaks should be linked to access roads. This approach minimizes the areas needing preparation while ensuring comprehensive access throughout the development site. Firebreaks are required around the entire property perimeter. At the proposed development site, an internal road will be constructed along the airport precinct's perimeter and will be managed and maintained as a firebreak (Figure 9). This road and firebreak will be carefully designed to avoid all botanically sensitive areas. Additionally, internal roads within the airport precinct should be designed to function as defensible spaces in the event of a fire, with road verges regularly cleared of flammable vegetation. Firebreaks must also be established along the property boundaries within the agricultural precinct, as mandated by the National Veld and Forest Fire Act (No. 101 of 1998). The landscape plan indicates the position of roads that should double as firebreaks (Figure 9). Please note, when conducting prescribed burns, it is essential to establish additional strategic firebreaks, as detailed in Section 3.3.1, to ensure safety.

### 4.2.1. Firebreak creation and maintenance

All firebreaks established onsite must meet the following requirements:

- With due regard to the weather, climate, terrain and vegetation of the area, firebreaks must be wide and long enough to have a reasonable chance of preventing a veldfire from spreading to or from neighbouring land. A width of 15m, inclusive of the road, is recommended as a guide.
- The establishment and operation of firebreaks must not cause soil erosion. Firebreaks must be cut by means of a bossiekapper or handheld brush cutters in sensitive areas. No burning may be used to establish fire breaks.
- Firebreaks must be maintained reasonably free of flammable plants and fuels, as well as bushy and tall vegetation and trees capable of carrying a veldfire across it. The height of the vegetation within the firebreak must be kept as low as possible.

- Firebreaks must be established and maintained on an annual basis, with the initial establishment occurring prior to the onset of the fire season in early October.
- All required onsite firebreaks must be monitored monthly during the fire season.
- All material removed from the firebreaks must be cleared from the site to prevent it from becoming a fire hazard.
- Firebreaks should not be designed with sharp angles. Where roads serve as firebreaks, the adjacent vegetation must be managed to ensure smooth, continuous lines without abrupt changes in direction.
- Firebreaks should not be established in areas identified as having high ecological sensitivity (e.g. wetlands or areas of botanical significance). Instead, wherever possible, firebreaks should be strategically placed in locations already planned for disturbance, such as along roads or other planned infrastructure. This approach minimizes environmental impact while maintaining the effectiveness of the firebreaks.

These guidelines ensure that firebreaks serve as an effective tool for fire prevention and control, reducing the risk of wildfires spreading across property boundaries and threatening the airport precinct.

## 4.3. Equipment, facilities & staff

### 4.3.1. Aircraft rescue and firefighting (ARFF) services

A dedicated firefighting team will be appointed and maintained onsite at all times. For veldfire management, this team should comprise at least 9 firefighters and 1 crew leader. However, additional team members may be required depending on the specific needs of Aircraft Rescue and Firefighting (ARFF) services. The size and composition of the team should align with both veldfire risks and airport operational demands. All appointed firefighters must be appropriately qualified with recognized accreditations. All site operatives must receive training in awareness of the issues of fires, litter, and contaminants and all any staff involved in high fire-risk activities, such as hot work or refueling, must undergo relevant firefighting training to ensure preparedness and safety

The ARFF services will be located directly East of the air traffic control tower, close to the middle of the runway and complies with the ICAO requirements considering the response times of two minutes and not exceeding three minutes, to any point of the operational runway and any other part of the movement area.

### 4.3.2. Equipment

In accordance with the National Veld and Forest Fires Act equipment, protective clothing and trained personnel must be available on the site to fight and extinguish any fires. The following minimum equipment and tools must be kept on site, at all times:

Hand tools:

- Fire beaters
- Spades
- Rake hoes
- Fire extinguishers (not to be used in natural areas & PFC's should not be used)

Water related:

- 15l Backpack sprayers
- Potable water tanks (mounted on vehicles) ("Bakkie Sakkie" with a minimum of 500l water tank capacity)
- Trailer pump (>1000l)
- Designated fire response vehicles fully equipped with firefighting equipment
- Fire water tanks with access hydrants and pumps

PPE (Personal Protective equipment):

- Fire resistant jacket, pants, gloves
- Flash resistant hoods
- Cotton overalls and t-shirts
- Leather boots
- Goggles
- Breathing masks
- Hard hats

Other equipment:

- Spotlights, and headlamps (minimum of 1 per fire fighter)
- Bolt cutters
- First aid kit with burn shields (minimum 1 per fire fighter)
- Two-way radio's / Cell Phones

The quantity of required firefighting equipment depends on both the size of the property and the number of designated firefighters available. The CPFPA has established minimum standards for equipment, personnel, and protective clothing, as detailed in Tables 3 and 4 below. For properties of this size (101-1000 ha), the maximum thresholds outlined in these tables apply. It's important to note that these requirements are considered the minimum baseline requirements for veldfire management and additional resources may be necessary to ensure adequate fire preparedness and safety.

**Table 3: CPFPA Minimum Equipment Requirements**

| Property Size in Ha. | Fire Beaters | 15l rucksack pumps | Rake Hoes | First Aid kit | Cell Phones | Trailer pump, >1000l | Bakkie sakkie fast reaction units – 500l capacity | Compliance | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | YES | NO |
| 1-10 Ha | 3 | 2 | 3 | 1 | 1 | - | - | | |
| 11-100 Ha | 5 | 4 | 5 | 1 | 1 | - | - | | |
| 101-1000 Ha | 10 | 5 | 10 | 1 | 1 | 1 | 1 | | |

**Table 4: CWA Minimum Personnel and Protective Equipment Requirements**

| Size in Ha. | Fire fighters | Crew leader | Fire Boss | Fire protective clothing (= number of personnel) | | | | | Compliance | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cotton overalls | Cotton t-shirts | Leather boots | Flashood/Scarf & Goggles | Pair of gloves | YES | NO |
| 1-10 Ha | 2 | 1 | - | 3 | 3 | 3 | 3 | 3 | | |
| 11-100 Ha | 4 | 1 | - | 5 | 5 | 5 | 5 | 5 | | |
| 101-1000 Ha | 9 | 1 | - | 10 | 10 | 10 | 10 | 10 | | |

All firefighting equipment must be serviced according to the manufacturer's instructions and no less frequently than the manufacturer's statutory requirements (annually). Firefighting vehicles must be maintained in optimal working condition with regular servicing. Fire extinguishers must be serviced at least once a year. An inspection register for all firefighting equipment must be maintained. Any defects or damages to vehicles or equipment must be reported immediately to the relevant manager.

Equipment should be positioned in readily accessible and clearly visible locations. Only trained employees are authorized to use firefighting equipment. In the case of any welding, grinding or other "hot work" being undertaken onsite, a fire extinguisher is to be readily available to extinguish any fire that may result from these activities. All heavy machinery used onsite should carry fire extinguishers, and all staff should be able to use them if required.

## SECTION 5: FIRE RESPONSE

A well-planned and coordinated fire response is crucial. The goal of an effective fire response is to rapidly identify and implement strategies that contain and extinguish fires, minimize environmental impact, and ensure clear communication among all involved authorities throughout the process. Fire Response must be based on the potential threat not the immediate size of the veldfire.

## 5.1. Communication during a veldfire

Effective communication is essential for efficient response to veldfires. To minimize risk, damage, and costs, it's crucial to establish clear lines of authority and communication from the outset. Every veldfire operation must designate a Fire Chief, who commands the overall firefighting effort, and a Crew Leader, who oversees a team of up to 15 firefighters. For smaller fires, one person may fulfill both roles. Reliable communication tools, such as two-way radios, are necessary to ensure seamless coordination among all crew members involved in firefighting operations.

In all veldfire situations, the Fire Chief must maintain clear and ongoing communication with airport operators and key stakeholders, such as neighboring properties and municipal firefighting teams. This includes providing timely and accurate updates on the fire's location, size, and intensity. Such information is essential for airport operators to make informed decisions regarding the safety of operations, while also allowing other stakeholders to assess and implement any necessary management actions to protect their assets and interests.

### *Standard Operating Procedures*

For large, veldfires on and off site that may affect visibility and disrupt aviation activities, a Standard Operating Procedure (SOP) will need to be developed in association FPA to ensure effective coordination between aviation operations and airport management teams. This SOP will establish protocols for managing potential risks to visual aviation, outlining clear communication channels between fire management teams, air traffic control, and airport authorities. Developing this SOP will be critical to minimize disruptions to aviation while maintaining safe and effective fire management practices.

## 5.2. Keeping the fire small

A rapid response significantly increases the chances of quickly containing and extinguishing a fire. To ensure this, it is essential to have effective systems in place for fire detection and reporting:

- Fire Spotting: During working hours, CWA ground staff, the control tower, and airport tenants are responsible for monitoring and reporting fires within airport bushland or approaching airport land. Outside of these hours, airport management will depend on remaining onsite staff, such as security personnel, and neighbouring communities for fire detection. To enhance fire detection and response, it is recommended to engage neighbouring communities in understanding the importance of timely fire reporting. Additionally, ensure that essential firefighting contact information is broadly disseminated to nearby landowners and adjacent communities.

- Reporting a fire: Fires originating onsite must immediately be reported to the designated firefighting unit stationed at the airport as well as the Cape Peninsula Fire Protection Association. All onsite and offsite fires must also be reported to the City of Cape Town Fire & Rescue Services Control Room: 021 590 1900, alternatively: 107 (from a landline) or 021 480 7700 (from a cell phone). The onsite firefighting unit must have a designated and publicly available contact number.

## 5.3. Response procedures

Once an onsite fire is reported to the onsite firefighting personal the appropriate response plan must be enabled as below:

**1. Initial Response**

1. Dispatch Firefighting Team: Upon receiving a report of a wildfire on airport property, the on-duty Fire Chief must immediately dispatch a firefighting team to the location. The dispatched team should be equipped with all necessary firefighting equipment and PPE.

**2. On-Site Assessment and Action Plan**

1. Assessment: Upon arrival, the designated Crew Leader will conduct an assessment of the wildfire's size, intensity, and potential threat.
2. Develop Action Plan: In consultation with the Fire Chief, the Crew Leader will formulate an appropriate action plan to effectively extinguish the wildfire. The method used to bring fires under control should be based on the daily Fire Danger Rating. Firefighting personnel must use Table 1 to understand veldfire behaviour and veldfire control actions required for each fire danger rating class.

**3. Communication with Affected Parties**

1. Inform Stakeholders: Depending on the level of threat, promptly notify all affected parties, including City Fire & Rescue Services, CPFPA, adjacent landowners, airport operators and other relevant stakeholders regarding the level of reaction required

**4. Control and Coordination**

1. Report Control Status: The Crew Leader must inform the Fire Chief once control of the wildfire has been established and when firefighting resources are being withdrawn from the site.
2. Joint Operations (if needed): If the wildfire is large or severe, coordinate joint operations with the City Fire & Rescue Services or the CPFPA to ensure a unified and effective response.

**5. Post-Control Actions**

1. Mopping Up: After final control has been established, continue mopping up the area to prevent re-ignition. This process will continue until the Fire Chief confirms that the wildfire is fully extinguished.

# SECTION 6: FIRE RECOVERY

Recovery is the process of returning the affected area back to normal after the impact of a fire. The objectives of fire recovery include recording information about the fire and review and updating response and management plans as relevant.

## 6.1. Immediate recovery

After a veldfire has been brought under control, patrolling and inspections should continue until the Fire Chief is satisfied that the veldfire has been extinguished. Once a veldfire has been extinguished, all equipment should be returned to the correct storage facilities and inspected. Equipment must be cleaned, repaired if needed and prepared for future use.

## 6.2. Debriefing

After major veldfires, a formal debriefing should be conducted with all relevant agencies and parties involved in the firefighting effort. This debriefing is essential for discussing lessons learned, identifying necessary changes, and improving the response plan's efficiency. To ensure its effectiveness, the debriefing should be scheduled as soon as possible after the event. At this debriefing, the cause of the veldfire should be identified and discussed as this will assist with improved future management.

## 6.3. Recording the fire

Maintaining comprehensive records of fire extent and impact is crucial for effective fire prevention and bushland management. Furthermore, in accordance with the Veldfire Act, all veldfire incidents occurring on-site must be documented and reported to the relevant Fire Protection Association (see Section 4.1)

These records should include:

- The mapped spatial extent of the area burnt.
- An estimate of the percentage of the vegetation that remained unburnt within the area recorded. Veldfires often burn unevenly, leaving patches or "islands" of unburnt vegetation behind.

- Estimated fire intensity (high, moderate or low), based on the efficiency of fuel consumption in the burnt areas
- Fire origin/cause
- Date and time of the incident
- Method of fire reporting
- Fire Danger Index and weather conditions at the time
- Effectiveness of preparedness measures
- Fire response actions taken and required rehabilitation efforts

An example of a fire report template is provided in Appendix A.

### 6.4. Post fire fauna and flora management

Post fire rehabilitation requirements will be dependent on a number of factors such as the habitat/vegetation type impacted, the size of the fire, the intensity of the fire, the time of year and the success of natural post-fire regeneration. Alien invasive plant species, which often proliferate from existing seedbanks after a fire, may pose a significant challenge. To address this, monthly monitoring of the burnt area and prompt removal any emerging seedlings should be implemented post fire as outlined in the Alien Invasive Plant Management Plan – Annexure 6 to the overall EMPr.

## SECTION 7: MONITORING AND COMPLIANCE

### 7.1. Monitoring

The implementation of this Veldfire Management Plan (VFMP) falls under the responsibility of the CWA Firefighting Unit. It is critical that all management actions outlined in the plan are strictly adhered to. Regular and thorough monitoring is essential to ensure compliance with VFMP specifications, identify any issues of non-conformance, and implement corrective actions to minimize fire risks and prevent environmental damage.

Monitoring activities should be carried out monthly by the appointed Fire Chief, ensuring that all aspects of the plan are effectively applied. The results from these checks must be documented and reported to the ECO appointed to the site.

Detailed records of all fire incidents, controlled burns, and relevant interventions must be meticulously maintained. These records should be submitted to the CWA Environmental Management Division on a monthly basis. To evaluate the effectiveness of the VFMP, the results will be analysed to develop key performance indicators (KPIs). It

will be the responsibility of the Fire Chief to develop best practices based on these KPIs, ensuring continuous improvement across CWA veldfire management operations.

## 7.3. Review of the Veldfire Management Plan

The VFMP will be reviewed by the appointed Fire Chief on an ongoing basis. Based on observations during site inspections and issues raised during team meetings, the Fire Chief in collaboration with the CWA Environmental Management Division and appointed ECO will determine whether any procedures require adjustment to enhance the plan's efficiency and applicability. The VFMP must be updated should any significant changes to operations be required. Updates must be guided and supported by a qualified environmental professional to ensure adherence to environmental and ecological best practices. All updates should be appended as an annexure to this document and must be distributed to all relevant stakeholders on site. This ensures that everyone involved is informed of the latest changes and can implement them accordingly to maintain compliance and operational efficiency.

## 7.4. Environmental Monitoring and Audits

Throughout the construction phase, monthly ECO reports must be compiled and submitted to DEADP. Throughout the operational phase, monthly ECO reports must be compiled and submitted to the site's EM.

During the construction phase a qualified Environmental Auditor, appointed at the Applicant's expense, must conduct six-monthly compliance audits of the EMPs in place for the site, including the VFMP. Once the project transitions fully to the operational phase, annual compliance audits of the same EMP suite, including the VFMP, must be undertaken. Internal audits should be undertaken on a regular basis as determined and managed by the site's EM.

The audit should aim to:

1. Assess compliance with the key components of the EMPrs.
2. Identify critical areas requiring attention.
3. Recommend priority actions for improvement.

The audit must cover a range of issues, including the implementation of environmental controls, environmental management practices, and environmental monitoring.

Audit findings should guide any necessary updates or additions to the EMPrs to address new or unresolved environmental issues on site. National, provincial, and local authorities must be provided access to the facility for audit or inspection upon request.

## 7.5. Record Keeping

The Applicant should keep records of the following:

- Monthly monitoring reports submitted by the onsite Fire Chief / Fire Control Officer
- 6-monthly audit reports
- Annual audit reports
- Reviews and amendments of the VFMP
- Incident reports for all fire related incidents that occur onsite

Records should be kept and must be made available for review on request, based on adequate motivation.

# APPENDIX A: FIRE REPORT TEMPLATE

**Fire Report**

| | |
|---|---|
| **Name:** | **File reference number:** |
| **Date & time of Fire:** | **FDI on date of Fire:** |
| **Reporting method:** | **Weather on date of Fire:** |

Section 1: Description of the fire (Location, time taken to control, fire intensity (high, medium or low) based on the efficiency of fuel consumption in burnt areas, effectiveness of preparedness measures)

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| |

Section 2: Response actions taken and remedial action required

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| |

Section 3: Mapped spatial extent of the area burnt & percentage of area burnt

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|---|
| |

Section 4: Steps to prevent recurrence

| |
|---|
| |

Section 5: Signatures

| | |
|---|---|
| Fire Chief: ..... | Date: ..... |
| ECO: ..... | Date: ..... |
| Applicant: ..... | Date: ..... |