



Safeguarding
the Airport

12

12.1

Introduction

The safety of aircraft operations and the capacity of the airport to operate and respond to growing demand can be directly impacted by inappropriate land use and activities that occur on land surrounding the airport.

Long-term protection and safeguarding of Parafield Airport are critical to ensuring the continuation of aviation operations and aircraft safety. The safeguarding of the airport, which refers to measures taken to minimise inappropriate land uses and activities, is the shared responsibility of Parafield Airport Limited (PAL) and all levels of government.

The Commonwealth government has enacted regulations to protect airspace around airports through the Airports (Protection of Airspace) Regulations 1996. Separately, a series of guidelines have been developed as part of the National Airports Safeguarding Framework (NASF) to enhance the current and future safety, viability and long-term growth of aviation operations at Australian airports. These guidelines have been developed by the Commonwealth in conjunction with the relevant state and territory planning ministers and cover a range of safeguarding matters. Implementation of the guidelines is facilitated by the relevant state and territory planning authorities as part of state planning systems.

12.2

National Airports Safeguarding Framework

The current and future viability and safety of aviation operations at Parafield Airport can be impacted by inappropriate developments occurring in areas beyond the airport boundary. The safeguarding measures applied by PAL in its planning include the NASF guidance documents which are listed in Table 12-1.

NASF Guideline	Description
Guideline A	Measures for Managing Impacts of Aircraft Noise
Guideline B	Managing the Risk of Building Generated Windshear and Turbulence at Airports
Guideline C	Managing the Risk of Wildlife Strikes in the Vicinity of Airports
Guideline D	Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation
Guideline E	Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports
Guideline F	Managing the Risk of Intrusions into the Protected Airspace of Airports
Guideline G	Protecting Aviation Facilities – Communication, Navigation and Surveillance (CNS)
Guideline H	Protecting Strategically Important Helicopter Landing Sites (HLS)
Guideline I	Managing the Risk in Public Safety Areas at the Ends of Runways

Table 12-1: National Airports Safeguarding Framework Guidelines

12.3 South Australian Government Planning Policy

The responsibility for land use planning off-airport lies with both state and local government. In May 2012, the South Australian Government agreed to the NASF and committed to implementing the outcomes of the NASF.

As described in Section 4, the South Australian planning system, through the *Planning, Development and Infrastructure Act 2016* and resulting Planning and Design Code provides a framework for addressing some elements of the NASF guidelines in relation to off-airport development.

There are three aviation related overlays, described below, within the Planning and Design Code which make reference to airport safeguarding measures. As detailed in Section 4.3, the State Planning System does not relate to development occurring on-airport and it is important to note that these Overlays may be subject to change from time-to-time. The information contained herein is current as of the date that this Master Plan is submitted for approval by the Minister.

12.3.1 Building Near Airfields Overlay

The desired outcome of the Building Near Airfields Overlay is to:

'Maintain the operational and safety requirements of certified commercial and military airfields, airports, airstrips and helicopter landing sites through management of non-residential lighting, turbulence and activities that may attract or result in the congregation of wildlife.'

The Assessment Criteria provide general guidance regarding:

- Outdoor, non-residential lighting within vicinity of an airport
- Minimising development that has the likelihood to attract or cause the congregation of wildlife within three-kilometres of an airport
- Limiting the height of new buildings within a defined area to mitigate the risk of building induced windshear and turbulence.

The Building Near Airfields Overlay does not trigger a referral of the development application to PAL for review, comment or direction.

12.3.2 Aircraft Noise Exposure Overlay

The desired outcome of the Aircraft Noise Exposure Overlay is as follows:

'Development sensitive to aircraft noise is designed and located to manage noise intrusion to reduce land use conflict and protect human health.'

The corresponding spatial representation of this overlay is currently based on the Australian Noise Exposure Forecast (ANEF) published in the Parafield Airport Master Plan 2017. The overlay includes assessment criteria providing guidance regarding:

- The siting of new buildings accommodating sensitive receivers, or additions to existing buildings, on land subject to particular ANEF values
- The creation of new allotments intended to accommodate sensitive receivers within areas subject to particular ANEF values.

This Overlay seeks to restrict the division or development of land within the ANEF 30 contour or greater.

The Aircraft Noise Exposure Overlay does not trigger a referral of the development application to PAL for review, comment or direction.

PAL will work with the South Australian Department for Trade and Innovation (Plan SA) and relevant stakeholders, including the City of Salisbury, to seek an update to the Overlay to reflect the new 2043 ANEF (see Section 13).

12.3.3 Airport Building Heights (Regulated) Overlay

The desired outcome of the Airport Building Heights (Regulated) Overlay is:

'Management of potential impacts of buildings and generated emission to maintain operational and safety requirements of registered and certified commercial and military airfields, airports, airstrips and helicopter landing sites.'

The assessment criteria provide general guidance regarding:

- Limiting the siting and height of buildings of in relation to airspace, declared to maintain safety and aircraft operations
- Minimising the potential impact generated by emission velocities from exhaust stacks.

Development proposals which exceed building height limitations or result in emissions exceeding pre-determined velocities around airports will trigger a referral to PAL and the relevant Commonwealth government agencies for assessment and direction. This is discussed further in Sections 12.5 and 12.9.

The protected airspace surfaces for Parafield Airport may be updated from time to time to reflect new, or changes to, flight procedures. In the event of the protected airspace surfaces being updated, PAL Airport will work with the SA Department for Trade and Innovation to seek a corresponding update to the Airport Building Heights (Regulated) Overlay

12.4 Aircraft Noise

Inappropriate development around airports can result in unnecessary constraints on airport operations and negative impacts on community amenity resulting from the effects of aircraft noise. These impacts need to be managed in a balanced and transparent way.

NASF Guideline A: Measures for Managing Impacts of Aircraft Noise provides advice on the use of a complimentary suite of noise metrics, including the ANEF system and frequency-based noise metrics, to inform strategic planning and provide communities with comprehensive and understandable information about aircraft noise.

PAL has prepared an ANEF for Parafield Airport every five years since 1999, with the Federal Airports Corporation developing the ANEF prior to the airport's privatisation. A new ANEF has been prepared as part of this Master Plan and was technically endorsed by Airservices Australia in December 2023. (see Appendix B).

The most effective way to manage development in areas forecast to be exposed to high levels of aircraft noise is to implement appropriate land use planning controls and acoustic standards.

The ANEF is a land use planning tool to inform noise-sensitive land uses around the airport. It provides guidance to both state and local government authorities in making planning and development decisions. The ANEF is prepared in consultation with state and local government authorities.

The ANEF underpins *Australian Standard AS 2021:2015 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction*. This Standard provides guidance on the siting and construction of new buildings within forecast aircraft noise exposure zones and on the acoustical adequacy of existing buildings in areas near airports. In order to minimise the potential for future occupants to experience adverse noise impacts, AS 2021:2015 recommends dwellings located between ANEF 20 and 25 incorporate noise control measures and achieve prescribed decibel levels within bedrooms.

New building developments within the Parafield Airport site are designed to minimise aircraft noise intrusion and achieve compliance with this Standard.

Off airport, the ANEF is applied through the Aircraft Noise Exposure Overlay within the South Australian Planning and Design Code, as described in Section

12.3. The planning controls contained in the Code restrict developments that accommodate activities sensitive to aircraft noise, additions to existing residential dwellings, as well as land divisions, in areas having an ANEF value of 30 or more.

In addition to the Planning and Design Code, the South Australian planning system includes the use of Ministerial Building Standards. These Standards identify additional requirements on matters such as the design, construction, quality and amenity of buildings to be considered as part of the building consent process undertaken by the local government authorities. *Ministerial Building Standard MBS010 – Construction requirements for the control of external sound* provides guidance on what building design and building measures are required to mitigate noise intrusion where a building is within the ANEF.

NASF Guideline A also recommends the use of additional metrics to communicate aircraft noise exposure to the community. Section 13 of this Master Plan provides a detailed assessment of aircraft noise exposure associated with Parafield Airport, including number-above contours as recommended in Guideline A.

12.5 Windshear and Turbulence

Building generated windshear and/or turbulence can become a safety issue for aircraft operations when structures are situated close to airport runways. When a significant obstacle is located in the path of a crosswind to an operational runway, the wind will be diverted around and over the obstacle causing the crosswind to vary in speed along the runway. The greatest risk from windshear and turbulence is on landing and take-off, when an aircraft's speed is low and the pilot's ability to respond to the varying wind speed is limited.

NASF Guideline B: Managing the Risk of Building Generated Windshear and Turbulence at Airports presents a layered approach to the siting and design of buildings near runways to assist land use planners and airport operators to reduce the risk of building generated windshear and turbulence.

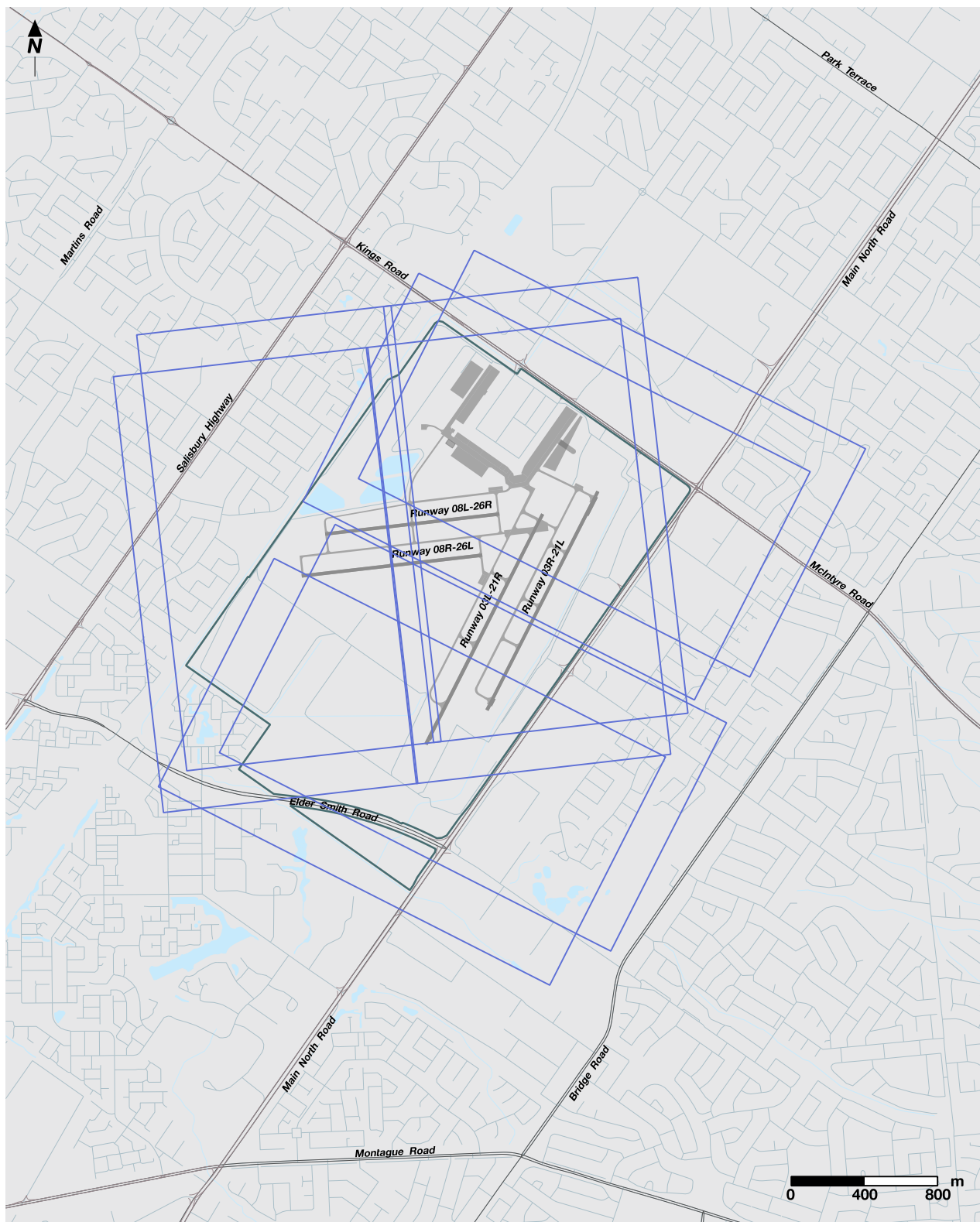
Guideline B provides technical criteria to assess buildings against the potential to generate windshear or turbulence and offers design techniques to mitigate these effects. It also provides options for modifying existing buildings.

The windshear assessment areas for Parafield Airport are shown in Figure 12.1.

The South Australian Planning and Design Code includes general guidance for limiting the height of new buildings within a defined area to mitigate the risk of building induced windshear and turbulence. It is however recognised that this does not fully reflect the principles contained in Guideline B. There is no referral trigger within the overlay for PAL to review, comment or provide direction on the development application. PAL will continue to encourage the State Government to ensure that the Guideline is incorporated into the assessment process for off-airport developments in areas which could potentially affect runways or flight paths.

PAL seeks to mitigate the potential impact of windshear and turbulence on airport land. Windshear and turbulence assessments, based on Guideline B criteria, are undertaken for key development activities within Parafield Airport and close to the airport runways in accordance with Guideline B.





LEGEND

- | | |
|---------------------|--------------------------------|
| Airport Boundary | Windshear Assessment Envelopes |
| Runways | Local Roads |
| Taxiways/Aprons | Arterial Roads |
| Drainage/Water Body | |

Figure 12.1: Windshear and turbulence assessment envelopes for Parafield Airport

12.6 Wildlife Strike

Wildlife strikes and/or avoidance can cause major damage to aircraft and can compromise aircraft safety. While the Civil Aviation Safety Authority (CASA) has well established safety requirements for wildlife management within the airport, wildlife hazards also occur beyond the airport boundary.

NASF Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports provides advice to help protect against wildlife hazards originating off-airport.

Guideline C does this by recognising that land use planning decisions and the way in which existing land use is managed in the vicinity of airports can significantly influence the risk of wildlife hazards.

As the airport operator, PAL is required to manage the risk of wildlife strike in accordance with Part 139 of the *Civil Aviation Safety Act 1998* and corresponding Part 139 (Aerodromes) Manual of Standards.

PAL has a Wildlife Hazard Management Plan that details the monitoring, assessment, reporting and control measures for managing the risk of wildlife strike. Habitat mapping, aimed at identifying potential risks, and landscaping guidance directed at minimising potential risks, are currently focussed primarily on development activities occurring on-airport.

Many airports, including Parafield, are surrounded by areas that are attractive to wildlife, especially birds. The main risks are that wildlife could cross the flight path of aircraft or migrate onto the airport.

Bird and animal strikes are classified as an air safety incident and must be reported to the Australian Transport Safety Bureau.

Figure 12.2 identifies the wildlife buffer zones for Parafield Airport, based on the criteria in Guideline C. Buffer zones are split into three categories: Area A (three-kilometre radius from the airport), Area B (eight-kilometre radius) and Area C (13-kilometre radius). The Guideline provides guidance on the types of land uses that present a risk of attracting wildlife and triggers (based on the buffer zones) for adopting active measures to mitigate that risk.

Guideline C also outlines the need for development activities and rezoning proposals within 13-kilometres of airports to be appropriately monitored and for airport operators to work with local and state government authorities to ensure that land is appropriately used and developed within the vicinity of the airport.

For developments and activities within Parafield Airport, PAL assesses the potential for wildlife hazards as part of the airport's approval process. Any new development, and ongoing operational arrangements on the airport, must seek to minimise the risk of wildlife strikes through reducing birdlife attraction. Such measures include building design (to avoid nesting opportunities), landscaping species selection, water-detention and retention strategies and waste management practices.

For off-airport developments, the Building Near Airfields Overlay is applied as part of the State Government's Planning and Design Code and it includes general guidance for minimising development that has the likelihood to attract or cause the congregation of wildlife within three-kilometres (Area A) of an airport. There is no referral trigger within the overlay for PAL to review, comment or provide direction on the development application.



LEGEND

- Airport Boundary
- Arterial Roads
- Drainage/Water Body
- Parks, Forests and Reserves
- Runways
- - - Wildlife Buffer Zones

Figure 12.2: Wildlife buffer zones for Parafield Airport

12.7 Wind Turbines

Wind turbines can constitute a risk to low-flying aviation operations such as agricultural pilots. Additionally, temporary, and permanent wind monitoring towers can be erected in anticipation of, or in association with, wind farms and can also be hazardous to aviation, particularly given low visibility. These structures can also affect the performance of communications, navigation and surveillance equipment operated by Airservices.

NASF Guideline D: Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation provides advice on the siting and safety management of these and similar structures.

The risk of wind turbines as a physical obstacle to air navigation around Parafield Airport is controlled under the Airports (Protection of Airspace) Regulations 1996 (see Section 12.9).

Wind turbines are not considered a significant risk to the operations of Parafield Airport given the highly urbanised nature of the areas surrounding the airport.

12.8 Lighting at the Airport and Surrounding Areas

Pilots are reliant on the specific patterns of aeronautical ground lights during inclement weather and outside daylight hours. These aeronautical ground lights, such as runway lights and approach lights, play a vital role in enabling pilots to align their aircraft with the runway in use. They also enable the pilot to land the aircraft at the appropriate part of the runway. It is therefore important that lighting in the vicinity of airports is not configured or is of a pattern that pilots could either be distracted or mistake such lighting as being from the airport.

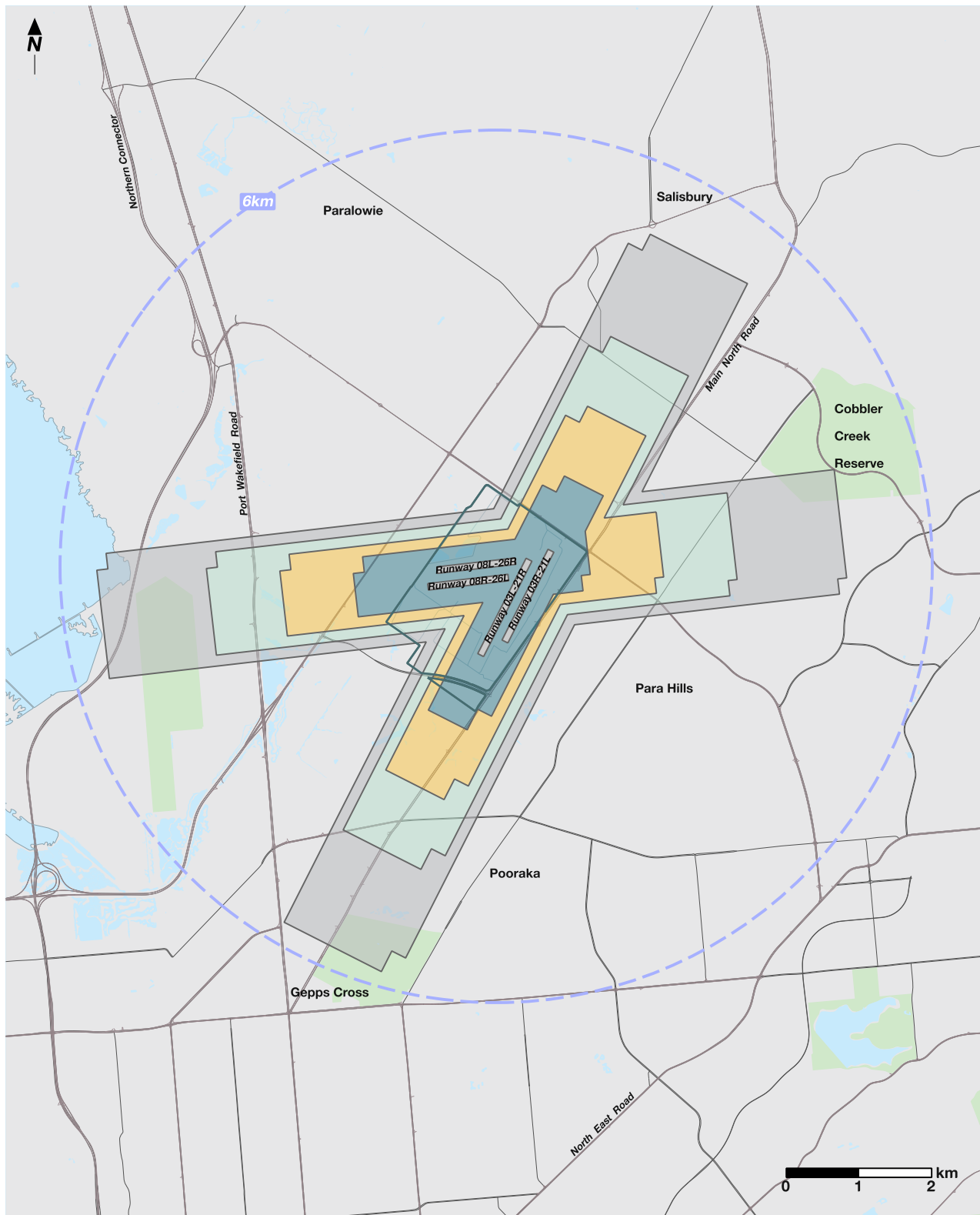
NASF Guideline E: Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports recognises the potential hazard of inappropriate lighting by specifying performance standards for lighting installations on and in proximity to airports.

This Guideline applies to areas within a six-kilometre radius of Parafield Airport, including on-airport developments. Developers and designers of lighting are required to comply with the Guideline to ensure ground lighting does not interfere with pilot vision on approach to the runways for landing. Advice is available in Chapter 9 of the Part 139 (Aerodromes) Manual of Standards of the Civil Aviation Safety Regulations 1998. CASA has authority under Regulation 94 of the Civil Aviation Regulations 1988 to request interfering lights to be extinguished or modified.

Figure 12.3 shows a plan of the lighting control zones around Parafield Airport.

For developments and activities within Parafield Airport, PAL assesses lighting as part of the airport's development approvals process.

For off-airport developments, the Building Near Airfields Overlay is applied as part of the South Australian Planning and Design Code (see Section 12.3) and includes general guidance for the need for non-residential outdoor lighting to be designed in a manner that does not pose a hazard to aircraft operations. There is no referral trigger within the overlay for PAL to review, comment or provide direction on development applications.



LEGEND

- Airport Boundary
- Arterial Roads
- Drainage/Water Body
- Parks, Forests and Reserves

Runways

CONTROL ZONES

- Zone A
- Zone B
- Zone C
- Zone D
- Lighting Compliance Limit

Figure 12.3: Lighting control zones for Parafield Airport

12.9 Protected Airspace

The operational airspace of airports is the volume of airspace above a set of imaginary surfaces, the design of which is determined by criteria established by the International Civil Aviation Organization (ICAO). These surfaces are established with the intent of protecting aircraft from obstacles or activities that could be a threat to safety, such as tall buildings and cranes.

NASF Guideline F: Managing the Risk of Intrusions into the Protected Operational Airspace of Airports provides key advice to planners and decision makers about working within and around protected airspace and how the airspace can be better integrated into local planning processes.

Guideline F considers the critical nature of obstacles, whether natural or constructed, and highlights the serious impact that intrusions can have on the operational efficiency and safe aircraft operations.

It is generally appreciated that tall structures can impact upon airport operations, however this is often only considered for structures that are located a short distance away from the airport and within the immediate approach and take-off areas. While this is of primary concern, it is equally true that objects up to 15-kilometres from the airport and unrelated to the runway alignment can impact upon aircraft approaching or departing an airport, particularly in poor weather conditions or in instances of engine failure.

12.9.1 Prescribed Airspace

ICAO standards have been adopted which define two sets of invisible surfaces above the ground around Parafield Airport. The airspace above these surfaces forms the airport's prescribed airspace. These two surfaces are:

- Obstacle Limitation Surface,
- Procedures for Air Navigation Services – Aircraft Operations,

which are described below.

12.9.1.1 Obstacle Limitation Surface

The Obstacle Limitation Surface (OLS) is a series of surfaces which determine when an object may become an obstacle to aircraft manoeuvring in the vicinity of an airport during approach or departure or during circuit flying. The OLS defines protection

requirements for the initial and final stages of a flight. During these manoeuvres, appropriate visibility must be maintained by the pilot to see and maintain visual reference to the airport and take responsibility for obstacle avoidance and separation from other aircraft.

The objective of the OLS is to define a volume of airspace, in proximity to an airport, which is to be kept free of obstacles that may endanger aircraft in visual operations or during the visual stages of instrument flight procedures. The intention is not to restrict or prohibit all obstacles, but to ensure that either existing or potential obstacles are examined for their impact on aircraft operations and that their presence is properly considered.

As the OLS is relevant only to visual operations, in exceptional circumstances it may be sufficient to ensure that an obstacle is conspicuous to pilots by appropriate obstacle marking and lighting as nominated by the CASA.

However, if an obstacle is located in the approach and take-off areas, pilots will be forced to make adjustments to their normal take-off and landing to ensure obstacle clearance. Correspondingly, this may restrict the operation of a runway by reducing the available length. The most stringent requirements apply on the extended centreline of a runway in the approach and take-off areas that extend 15-kilometres from the runway strip end.

At either side of the runway strip and the approach surface are two OLS components called the transitional surfaces. These are intended to protect an aircraft that encounters severe cross winds during the final phase of the approach to land and may then drift sideways as the pilot decides to 'go around' for another approach to landing.

Figure 12.4 displays the OLS plan for Parafield Airport. The OLS extends to a 15-kilometre radius surrounding the airport.

12.9.1.2 Procedures for Air Navigation Services – Aircraft Operations

A second group of criteria is used to determine the volumes and dimensions of airspace required to protect the safety of aircraft operating under instrument flight rules, whereby pilots rely solely on aircraft navigation instruments. Airspace protection for these operations cannot allow for the introduction of long-term penetrations.

The relevant criteria are established by the ICAO and are published in a document titled Procedures for Air Navigation Services – Operations (PANS-OPS). The surfaces determined in accordance with the criteria in the PANS-OPS publication are called PANS-OPS surfaces.

The PANS-OPS surfaces are used in the construction of take-off, landing and approach procedures. These procedures enable aircraft to navigate solely by reference to aircraft instruments and are designed to protect aircraft from colliding with obstacles. Minimum safe altitudes are established for each segment of an instrument procedure.

The minimum obstacle clearance requirement is added to the height of the tallest object under the PANS-OPS surface to determine the minimum or 'lowest safe altitude' to which a pilot may descend in attempting to establish visual reference to the airport. The landing cannot be made unless the pilot makes visual contact with the ground at or before reaching this minimum descent altitude. If the lowest safe altitude for an instrument procedure must be raised to account for new buildings or other structures, there may be direct impact on airport usability. The higher this altitude needs to be, the less likely it becomes that a pilot will be able to land during low visibility conditions.

Figure 12.5 and Figure 12.6 display the PANS-OPS chart for Parafield Airport.

12.9.2 Airports Act 1996 & Airports (Protection of Airspace) Regulations 1996

The Commonwealth Minister for Infrastructure, Transport, Regional Development and Local Government protects the airspace surrounding airports in accordance with the directions provided in the *Airports Act 1996* (Airports Act) and associated Airports (Protection of Airspace) Regulations 1996 (APA Regulations). This legislation prescribes airspace around the airports for protection from activities that could pose a hazard to air navigation. These are referred to as 'controlled activities' and include:

- Buildings or other structures that may intrude into prescribed airspace, including construction cranes
- An activity that results in artificial or reflected light that exceeds acceptable light intensities or is capable of blinding or confusing pilots
- An activity that results in air turbulence
- An activity that results in the emission of smoke, dust, or other particulate matter
- An activity that results in the emission of steam or gas.

The APA Regulations provide a framework for the assessment and approval of controlled activities. Details of proposed controlled activities are required to be provided to PAL for assessment. Any proposed

activity that would result in an airspace infringement is referred to Airservices and CASA for assessment before being submitted to the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDCA) for approval or refusal.

Infringements of the PANS-OPS surfaces may only be approved by the DITRDCA if the activity is short-term (less than three months) and does not pose an unacceptable effect on the safety or existing or future aircraft operations.

Infringements of the OLS that are of a short-term nature (less than three months), such as cranes, can be approved by PAL following assessment by Airservices and CASA.

In addition, Part 139 of the *Civil Aviation Safety Regulations 1998* also applies. These Regulations and the supporting Part 139 (Aerodromes) Manual of Standards set the standards for the establishment of the OLS at an airport, the requirement for airport operators to monitor and maintain prescribed airspace free of obstacles and regulate the development of instrument procedure designs by CASA and approved entities, including Airservices.

12.9.3 Amendments to Prescribed Airspace

Changes to visual or instrument flight path procedures may require amendment of the OLS or PANS-OPS surfaces at Parafield Airport. There are no changes to the OLS or PANS-OPS surfaces attributed to this Master Plan 2024. Amendments may be made during the period of this Master Plan as circumstance dictates. This would result in changes to the surfaces shown in Figures 12.4 to 12.6.

12.9.4 Development Assessment

For off-airport activities, the Airport Building Heights (Regulated) Overlay is applied as part of the State Government's Planning and Design Code. This overlay includes general guidance regarding limiting the siting and height of buildings in relation to airspace as well as minimising the potential impact generated by emission velocities from exhaust stacks. Development proposals which exceed building height limitations or result in emissions exceeding pre-determined velocities around Parafield airport will trigger a referral to PAL and the Commonwealth for assessment and direction.

There are areas around Parafield Airport where development of land will likely infringe the prescribed airspace. PAL works with development proponents to ensure buildings are below airspace surfaces by providing the applicable height limitations. This information is supplementary to that presented within the South Australian planning system.

Conditions may be imposed on a controlled activity approval. When required, PAL arranges the publication of a Notice to Airmen (NOTAM) to notify aircraft operators of airspace obstacles.

All Airservices designed flight procedures must be protected against future infrastructure developments. Airservices must be notified about any building developments, including the use of associated construction equipment, to ensure that they will not pose a hazard to aircraft operations and that all Airservices designed procedures are safe for aircraft operations. The height of buildings, or the other developments, must not penetrate the visual segment





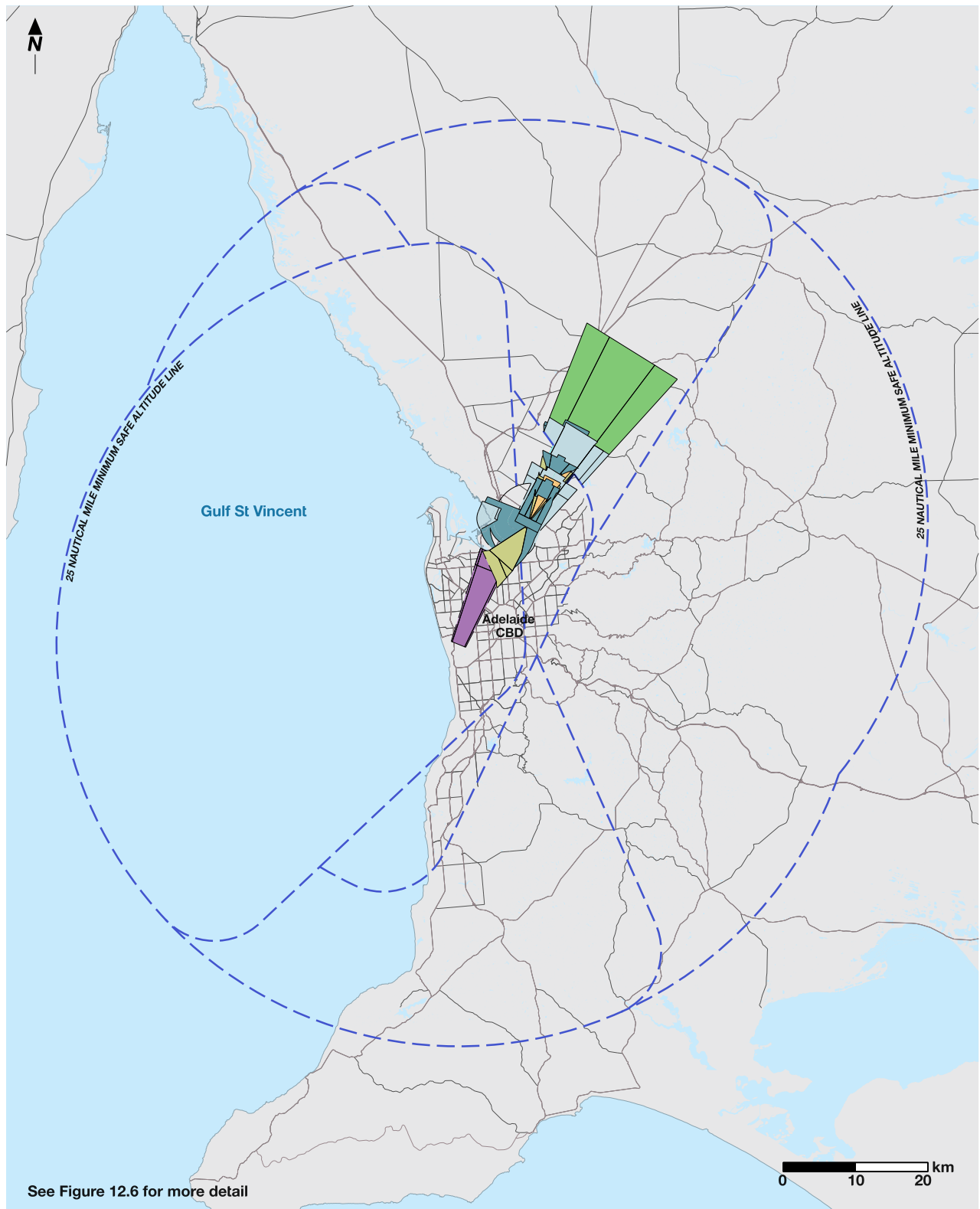
LEGEND

- Airport Boundary
- Arterial Roads
- Drainage/Water Body
- Parks, Forests and Reserves

- Conical Surface
- Transitional Surface
- Take Off Surface
- Approach Surface
- Inner Horizontal

surfaces associated with approaches to the runways.

Figure 12.4: Obstacle Limitation Surfaces (OLS) plan for Parafield Airport



LEGEND

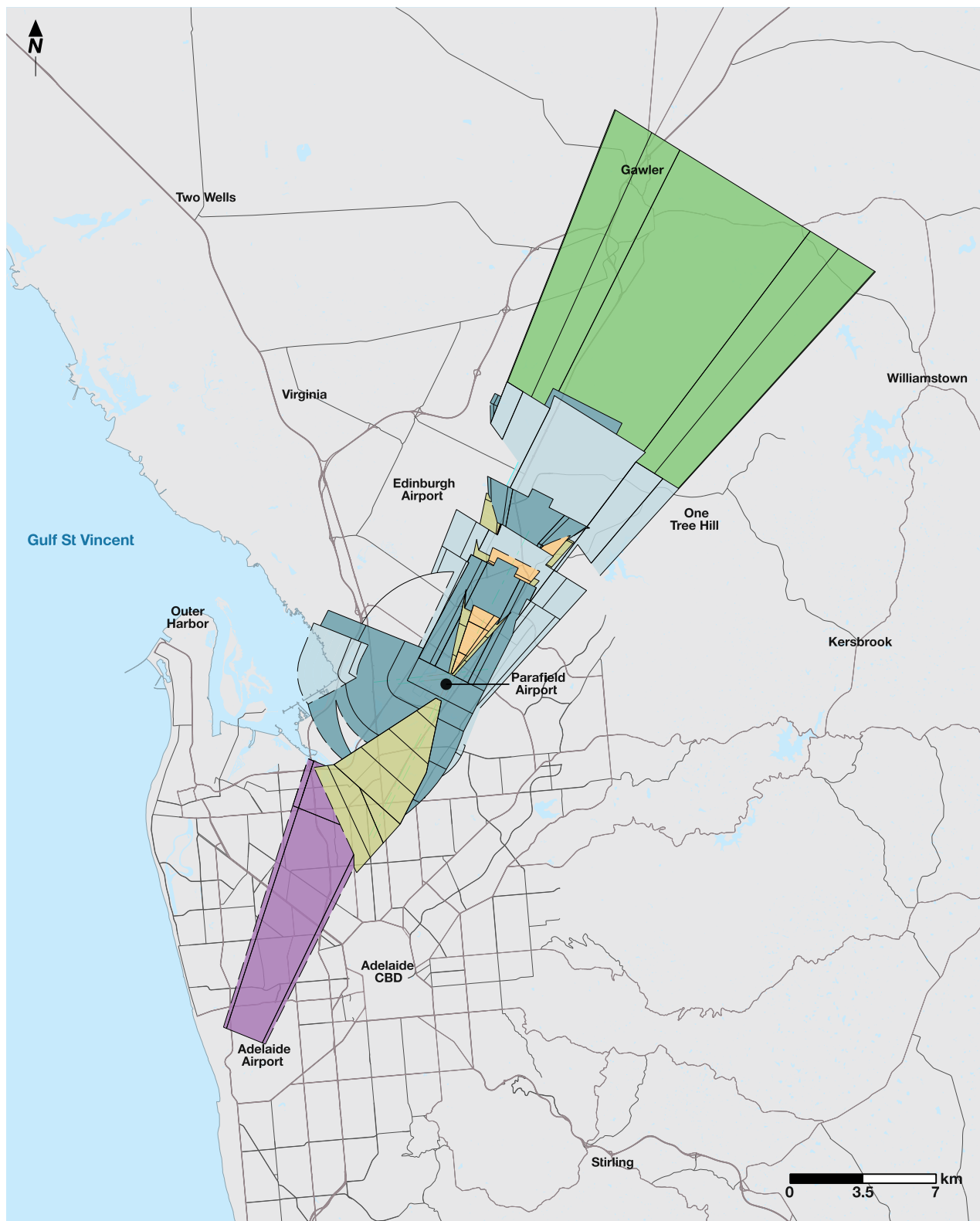
- Arterial Roads
- Drainage/Water Body

PANS OPS

- NDB-Y
- NDB-Z
- VOR-A

- RNAV-Z
- SID
- VSS

Figure 12.5: Procedures for Air Navigation Services Aircraft Operations (PANS-OPS) surfaces



LEGEND

- Arterial Roads
- Drainage/Water Body

PANS OPS

- NDB-Y
- NDB-Z
- VOR-A

- RNAV-Z
- SID
- VSS

Figure 12.6: Procedures for Air Navigation Services Aircraft Operations (PANS-OPS) surfaces inset

12.10 Protecting Communications, Navigation and Surveillance Facilities

Communications, navigation and surveillance (CNS) facilities are critical to the safe and efficient operation of aircraft. This equipment enables pilots to communicate with air traffic control, navigate while between airports and conduct instrument approaches. While such facilities are generally associated with airports, some are located off-site and can be significant distances from airports, or not associated with airports. Inappropriate development in the vicinity of these facilities can compromise their effectiveness.

Guideline G: Protecting Aviation Facilities – Communication, Navigation and Surveillance (CNS) provides guidance to assist land use planners at all levels of government when considering a particular development proposal or developing strategic planning frameworks and accompanying strategic land use plans. This Guideline also describes circumstances when consultation should occur with Airservices, CASA or the Department of Defence.

There are various CNS systems operating around Australia. Airservices uses radar, radio and satellite communications for the safe and efficient management of aircraft movements on, around and enroute between airports.

There are also additional systems for monitoring wind and other weather parameters used by the Bureau of Meteorology to provide up-to-the minute data for pilots and air traffic controllers to safely make decisions about flight routing, runway selection and landing procedures.

Guideline G prescribes Building Restricted Areas (BRAs) of varying size around each type of CNS facility. The purpose of BRAs is to trigger an assessment by Airservices of potential impacts on CNS facilities from proposed developments. BRAs are not intended to prohibit development, except where it would lead to an adverse impact on a facility.

CASA is responsible for enforcing safety requirements under the *Civil Aviation Act 1988* and the *Air Navigation Act 1920*. Section 21 of the *Civil Aviation Act 1988* enables CASA to take enforcement action where development is, or may be, causing active or passive interference to a communications, navigation or surveillance facility.

When developing near CNS facilities on the airport site, PAL considers Guideline G and works with Airservices to understand and minimise any impacts when necessary.

12.11 Strategic Helicopter Facilities

The protection of strategically important helicopter landing sites, such as those associated with hospitals, from the adverse impacts of development has become a critical issue in recent years.

NASF Guideline H: Protecting Strategically Important Helicopter Landing Sites applies to helicopter sites located off-airport and seeks to provide a consistent national approach for land use planning in the vicinity of these facilities.

State and territory governments are responsible for identifying helicopter landing sites that are considered to be of strategic importance or are to be protected in the interest of public safety.

The Airport Building Heights (Regulated) Overlay is applied as part of the South Australian Planning and Design Code. This Overlay includes general guidance regarding limiting the siting and height of buildings of in relation to airspace so as to maintain operational and safety requirements of registered and certified commercial and military airfields, airports, airstrips and helicopter landing sites. There are currently no helicopter landing sites identified within this overlay.

12.12 Public Safety Areas

Public Safety Areas (PSAs) are designated areas of land at the end of runways within which certain planning restrictions may apply. While air crashes are rare events, the majority occur in the vicinity of airports during take-off and landing.

NASF Guideline I: Managing the Risk in Public Safety Areas at the Ends of Runways and defines PSA's using risk-assessment models to determine acceptable levels of risk for given land uses. The risk considered is that of an aircraft crash which affects public safety.

The purpose of these areas is to limit the number of people living, working or congregating in the defined PSA, and limit or remove the storage of hazardous materials in the defined area. This occurs over time through the introduction of land use controls.

The Guideline was formally adopted by the Standing Committee on Transport and Infrastructure in 2018 to guide state and territory governments in the implementation of PSAs at the end of runways. The introduction of outcomes from Guideline I is the responsibility of the South Australian Government. PAL remains committed to working with the State government to determine the best way of introducing PSAs into the state's planning system.

For development occurring on the airport site, PSAs are considered by PAL in the approval process.