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MOORABBIN AIRPORT PRELIMINARY DRAFT 2021 MASTER PLAN - SUBMISSION

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1. EXECUTIVE SUMMARY

There is a regulatory requirement for an Airport Master Plan to be strategic in nature. It should demonstrate how the airport should primarily serve as a public asset as set out in the *Airports Act 1996*. An Airport Master Plan should also maintain a strong focus on aviation development and limit non-aeronautical uses which would compromise the future growth of aviation activity as envisioned in the *Aviation White Paper 2009*.

For an Airport Master Plan to be comprehensive, it should consider the wider industry context, now and in the future, and how it intends to respond, rather than maintaining the status quo.

This submission has provided a broad market analysis, compared the Moorabbin pDMP with the Master Plans of other like airports and studied the progression from previous Moorabbin Master Plans has also been investigated.

Following a detailed and thorough analysis of the Moorabbin pDMP, the following conclusions have been drawn:

- Overall, the pDMP is incoherent and inconsistent with sound planning from an aviation development perspective.
- The pDMP lacks detail and evidence in relation to fundamental assumptions and conclusions, including practical capacity and future aircraft movements.
- The pDMP ANEF models aircraft with a maximum take-off weight greater than 5700 kg (up to approximately 9000 kg) but these aircraft may only operate if they have prior permission.
- The pDMP does not adequately respond to current circumstances (especially the status of flight training) and does not satisfactorily consider future trends and opportunities.
- The pDMP has a single focus on flight training as the primary aviation use. This is in the face of COVID-19 impacts (which will persist for some time) and establishes an invalid foundation upon which to base the Aviation Development Plan.
- This singular focus on flight training operations, potentially at the expense of other aviation development opportunities, is questionable in the context of current and near- term prospects of the flight training industry.
- The pDMP specifically notes that FTOs seeking to expand or establish operations at the airport will need to satisfy themselves that there is available airspace capacity suitable for the scale of their operations. This condition on future increases in aviation activity contradicts the stated objective of delivering an increase in total movements from 268,000 in 2020 to 375,000 in 2010, and increase student numbers from 1250 in 2020 to 1800 in 2040.
- The pDMP does not adequately safeguard or future proof aeronautical infrastructure. There is an intention to downgrade capability rather than enhance it through reducing runway code numbers, and non-aviation development in close proximity to some runways has almost certainly introduced a windshear hazard.
- The pDMP makes no provision for fixed wing aircraft in the emergency services fleet (B350, PC24) which are commonly operated in other states and territories.
- The pDMP specifically lacks exact details on stakeholder engagement including up to date feedback (if any).

2. INTRODUCTION

2.1. Background

Moorabbin Airport Chamber of Commerce Inc (MACCI) is an organisation that seeks to represent members, namely pilots, aircraft owners and local airport tenants, to improve logistics and conditions at and around Moorabbin Airport. Its members make a significant contribution to the local economy through their activities on or from the airport.

MACCI has approximately 91 members operating more than 100 aircraft at Moorabbin Airport in the following activities:

- Aeromedical
- Charter
- Flight training (FTO)
- Maintenance, repair and overhaul (MRO)
- Private.

MACCI is concerned that the Aviation Development Plan within the Moorabbin Airport pDMP does not serve the long term interests of its members and existing tenants and has prepared this submission in response to the Invitation for Public Comment.

2.2. Context

This submission is presented in 6 main sections. The intention ultimately is to identify shortfalls of the Moorabbin Airport Preliminary Draft Master Plan (pDMP) by beginning in the regulatory context, providing a broader economic and aviation sector-specific analysis, using comparable data from other similar airports subject to the Airports Act 1996, reviewing progression from previous Master Plans and then specifically identifying items in the Moorabbin pDMP which are of concern to the MACCI.

This report is structured as follows:

- Regulatory context and review
- Aviation sector outlook and market analysis
- General trends in aviation
- A comparison of Airport Master Plans from like airports
- Progression from previous Master Plans
- Windshear
- Specific issues.

2.3. References

References used or consulted in the preparation of this submission include:

- Airservices Australia Aeronautical Information Package, Enroute Supplement Australia (ERSA)
- Archerfield AMP 2017
- Australian Government, Civil Aviation Authority, Manual of Standards Part 139 - Aerodromes
- Australian Government, Department of Infrastructure, Transport, Regional Development and Communications: Airport Planning;
- Australian Government, Department of Infrastructure, Transport, Regional Development and Communications, Flying to Recovery, Issue paper 2020
- Australian Government, Department of Infrastructure, Transport, Regional Development and Communications, National Airports Safeguarding Framework Principles and Guidelines
- Australian Government, Federal Register of Legislation, Airports Act 1996
- Australian Government, National Aviation Policy, Aviation White Paper, 2009
- Bankstown AMP 2019
- Civil Aviation Safety Authority AC 101-01v3.0
- Department of Infrastructure: Airport Planning
- https://simpleflying.com/cathay-pacific-single-pilot-a350-flights/
- https://www.flightglobal.com/airlines/no-new-pilots-needed-for-very-long-time-lufthansa-training-arm/140484.article
- IATA Annual General Meeting - Outlook for Air Transport and the Airline Industry
- Jandakot Airport pDMP 2020
- KPMG - Aviation 2030 Disruption beyond COVID-19 Thriving on disruption series
- Moorabbin Airport Master Plan 2015
- Moorabbin Airport Preliminary Draft 2021 Master Plan April 2021
- Parafield Airport Master Plan 2017.

3. REGULATORY CONTEXT

The *Airports Act 1996* establishes the framework for the regulation of leased Federal airports. The Act provides a system for separating the roles of the airport operator and airport regulator. In the case of Moorabbin Airport, the Commonwealth Department of Infrastructure and Regional Development (DIRD) and the Civil Aviation Safety Authority (CASA) provide the regulator role.

Moorabbin Airport Corporation (MAC) being the Airport Leasing Company (ALC) undertakes the airport operator role. It is primarily responsible for activities that take place on the ground and within airport confines and the protection of the airport airspace.

Following the sale and privatisation of Moorabbin Airport under the *Airports Act 1996*, the Commonwealth became both the landlord with responsibility for facilitation of the businesses it had transferred to private ownership, and the regulator of those same businesses.

The following paragraphs summarises the pertinent role and responsibilities of both the ALC and the Australian Government.

3.1. Airport Master Plans

Airports are essential public infrastructure assets and can generate significant social and economic benefits for communities. They need to be properly planned and protected over the long term to safeguard future plans and opportunities at and around the airport to realise these benefits, and importantly ensure safe operations. Lack of and/or poor airport planning can result in a range of issues such as restrictions on the full use and operational restrictions, amenity and safety impacts.

Airport master plans provide the strategic direction for future efficient and economic development of the airport and ensure that future development plans are properly documented for public view. The master plan is based on airport projects and activities over a longer period, usually 20 years with a particular focus on a 5 year horizon. It is a planning tool forming the basis from which future projects may proceed into detailed implementation.

The master plan indicates to the public the intended uses of the airport site, reduces any potential conflicts and ensures that they are compatible with the areas surrounding the airport.

The key objectives of a master plan are maintaining the ability for aircraft to operate safely and unrestricted as possible; facilitating the ability for the airport to grow and expand in response to demand; promoting the role of the airport and its significance as a community asset; providing for the airport to attract and increase aviation and non-aviation revenue streams; safeguarding the airport's long term plans; ensuring compliance with relevant regulations and managing environmental and heritage constraints

Master plans also address and minimise potential encroachment and impacts of incompatible activities and development in the airport vicinity such as aircraft noise, intrusions into protected operational airspace, lighting distractions, wildlife strikes, building generated windshear and turbulence from nearby development, public safety and impacts on navigational aids. The master plan also links on airport to off airport such as access, ground transport arrangements such as car rentals, taxis, buses, local accommodation, and local areas to visit.

As described by the Australian Government, Department of Infrastructure, Transport, Regional Development and Communications: Airport Planning;

> *All leased federal airports are subject to a planning framework in the Airports Act 1996. The Master Plan is a 20 year strategic vision for the airport site which is renewed every five years. The Master Plan includes future land uses, types of permitted development, and noise and environmental impacts. Federal Register of Legislation - Airports Act 1996*

3.2. Australian Government, Airports Act 1996

Part 5, Division 3, Section 70 of the *Airports Act 1996* sets out the requirements of the Airport Master Plan (author's bolding):

> *Final master plans*
>
> *(1) For each airport, there is to be a final master plan.*
>
> *(2) The purposes of a final master plan for an airport are:*
>
> ***(a) to establish the strategic direction for efficient and economic development at the airport over the planning period of the plan; and***
>
> *(b) to provide for the development of additional uses of the airport site; and*
>
> *(c) to indicate to the public the intended uses of the airport site; and*
>
> *(d) to reduce potential conflicts between uses of the airport site, and to ensure that uses of the airport site are compatible with the areas surrounding the airport; and*
>
> *(e) to ensure that all operations at the airport are undertaken in accordance with relevant environmental legislation and standards; and*
>
> *(f) to establish a framework for assessing compliance at the airport with relevant environmental legislation and standards; and*
>
> *(g) to promote the continual improvement of environmental management at the airport.*

3.3. National Aviation Policy, Aviation White Paper, 2009

The *Aviation White Paper 2009* sets out the Australian Government's long-term policy objectives for the aviation industry. The *White Paper 2009* details:

1. *The important role aviation performs in supporting broader economic, trade and social outcomes;*
2. *the regulatory framework the Australian Government maintains to keep the industry safe and secure,*
3. *the importance of continued investment and protection of aviation infrastructure and reforms to planning arrangements at Australia's major airports, and*
4. *the importance of minimising aviation's negative impacts on the environment and communities.*

The White Paper 2009 also notes (author's bolding):

> *the industry needs certainty about access to secondary airports in Australia's capital cities where there have been examples of valuable airport capacity transferred to non-aviation uses in the years immediately following privatisation. The Government confirms its commitment to the continued operation and growth of secondary capital city leased federal airports, vital to general aviation.* ***The Government will ensure airport master plans maintain a strong focus on aviation development at secondary airports and will not allow non-aeronautical uses to compromise the future growth of aviation activity.***

3.4. Strategic vision

The common thread amongst the *Airport Act 1996, White Paper 2009* and the Australian Government on Airport Master Plans is there must be some form of strategic vision for the leased airport. The Australian Government has committed in the *White Paper 2009* to protect aviation development activity from non-aeronautical uses which compromises the future growth of aviation.

Once elements of 'aviation', for example, airport land, are taken away to be used for other purposes, then there is minimal chance of being able to reclaim them for aviation uses.

For example, constructing a building on land where an element of aviation infrastructure could potentially be developed will permanently render that site unavailable for aviation purposes.

Constructing a building at the side of a runway at the controlling height of the transitional surface of the obstacle limitation surfaces (OLS) means that the runway can never be upgraded to accommodate a higher category of aircraft.

In these instances, the prospect of aviation growth is impeded permanently and in contradiction to the Australian Government assurances of protection of aviation growth.

The task of optimising an airport site for aviation and non-aviation development is multi-faceted, but experience shows that it is better to leans towards preserving space for future aviation needs than re-allocating it for non-aviation development.

4. ECONOMIC OUTLOOK AND MARKET ANALYSIS

When considering the strategic significance of airports and the Government's commitment to ensuring continued operation and growth, it is vital to analyse the framework in which the airport is an integral part. This framework is explored as an economic outlook and market analysis which incorporates general themes in aviation.

Acknowledging there must be a strategic vision and plan for Federal owned airports, a holistic approach and scrutiny of areas which may affect the aviation landscape needs to be documented. This provides a background for a strategic pathway to be built, not only for Moorabbin Airport but for other smaller airports as well.

Aspects to be considered include emerging aviation opportunities, aerospace business opportunities, broader high technology industries, high value-add manufacturing and innovation orientated opportunities which all could potentially be attracted to the Airport precinct and provide avenues for aviation growth.

Even prior to COVID 19, significant change was occurring at a macroeconomic level. For the most part, COVID-19 has catalysed economic change, and this has considerable implications for the aviation sector.

Themes that should be considered when developing an Airport Master Plan for the current and future aviation market are explored in further detail below.

4.1. COVID-19 aviation impact

The COVID-19 pandemic has seen the biggest shock to aviation since WW2. Figure 1 provides an indication of worldwide revenue passenger kilometres since 1950 (source: International Air Transport Association).

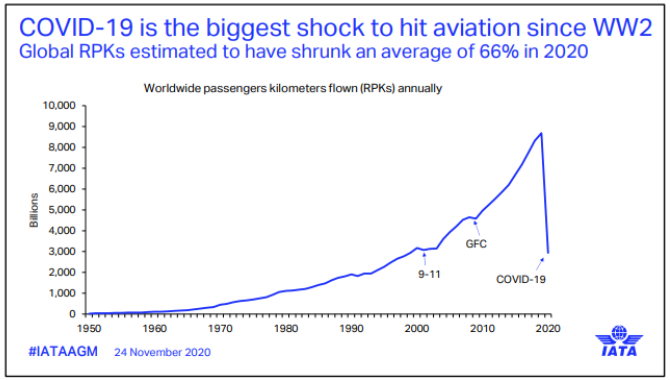


Figure 1 COVID-19 biggest shock to aviation since WW2

Covid-19 is changing the aviation landscape globally by highlighting new risks and accelerating trends. For example –

- Consumer behaviour – video generation, work from home, e-commerce 2.0
- Airline industry factors – fleet renewals, cargo, lease agreements
- Environmental, Social and Governance – net zero, compliance
- Pandemic – safe status, documentation and process, technology
- Geopolitical – rebalancing of market, immigration, sovereignty
- Capacity – airport capacity and demand.

These will be discussed in further detail in the following pages.

The Department of Infrastructure, Transport, Regional Development and Communications, Flying to Recovery, Issue paper 2020 is a 36-page report on the COVID-19 response and the future of aviation. The paper was issued in August 2020.

The Department of Infrastructure states:

> *The aviation sector, as well as the Commonwealth, state, territory and local governments, will need to make significant decisions about the future of air routes and airports, especially in regional Australia. Aviation is a key issue in the National Cabinet process.*

The Moorabbin pDMP lacks any analysis in this new aviation landscape. The theme of Flight Training remains at the core of the pDMP without any consideration of the wider implications of the new reality.

The Department of Infrastructure Issue Paper also states:

> *The latest International Air Transport Association (IATA) forecast now expects global passenger traffic to return to 2019 levels in 2024, one year later than previous estimates.*

The pDMP should consider the impact and provide strategic decisions given the COVID-19 impact is expected to be in play for at least the next 3 years.

4.2. De-globalisation of supply chains

COVID-19 has exposed the vulnerability of highly globalised supply chains, and already corporations are moving to mitigate future risk through adapting their supply chains:

- Smart supply chains through the use of technology to better manage risk
- Localised supply chains by grouping parts of a supply chain together geographically, or moving part of the supply chain closer to the customer base
- Micro supply chains by establishing multiple, smaller, more athletic, smarter supply chains in market or close to market
- Decentralisation of supply chains by moving supply chains to more regional areas, closer to primary products and away from some of the risks and costs of operating in the cities.

This theme offers an opportunity to leverage strengths in logistics and manufacturing and proximity to international shipping and aviation logistics to attract global manufacturing businesses.

4.3. The rise of videoconferencing and the digital economy

Due to COVID-19 travel restrictions, many business travellers have become accustomed to the use of digital meeting tools to replace travel for face-to-face meetings. This, coupled with growing public concern around carbon footprint, are likely to lead to reduced overall demand and slower growth for passenger aviation in the long term.

Further, many sectors of the economy have shifted to the virtual world and working from home has become much more normal and is likely to continue to be so. Education, entertainment, health, and shopping have all moved with great success to global digital marketplaces.

4.4. Increasing e-commerce

E-commerce has increased significantly during COVID-19 and this is likely to continue to be the case into the future. This will drive significant additional demand on to air freight, however the largest businesses in this space operate their own aircraft.

In Australia, many new shoppers tried e-commerce for the first time in 2020. Australia Post found that each month, one million additional households were purchasing online, representing a combination of new users and more frequent use by existing users.

Given that freight connectivity is a key driver to industrial competitiveness, Victorian airports are critical in supporting both existing industries and sectors as well as attracting new and growing opportunities in such areas as advanced manufacturing.

4.5. Industry 4.0 and advanced manufacturing

Australia is well positioned to integrate advanced manufacturing and rebuild its manufacturing sector as a strong, sustainable, environmental, and commercial performer. The increased value of Australian manufacturing changed trade relationships, and a decline in major advanced manufacturing countries such as Japan and Germany could see strong opportunities for Australian advanced manufacturing to take a leading position on the world stage.

Advanced manufacturing is not about WHAT is being manufactured, but HOW. Advanced manufacturing refers to the application of various advanced (and often technological) process to manufacturing. This can offer ways to improve product quality, reduce cost and mitigate environmental impact.

4.6. Changed geopolitical relationships

Tension between Australia and China risks damaging the bilateral trade relationship, which will shift the economics of Australian/ Asian trade routes. Emerging relationships with countries such as India hold promise, and long-term trade partners such as Japan and South Korea may feature more strongly in future trade development.

Development of trade relationships where customer countries are interested to import value added, manufactured products rather than raw primary products holds greater benefit for Australia, in terms of both positive net impact to balance of trade and economic growth, as well as creation of employment and high value land use within the local community.

The reliance on China as a supply for aviation students may diminish as China's ability to train their own industry professionals increases and as Australia falls out of favour geopolitically. This would inevitably see less demand from FTOs unless additional markets filled the gap and the appetite from the global industry to train pilots remains.

4.7. Shifting consumer sentiment

Gen Y and Gen Z consumers are increasingly driving a dialogue around environmental sustainability, positive social impact and inclusion and diversity. This will impact supply chains in the long run as enterprises shift their operations to meet the expectations of these increasingly powerful groups who represent not only consumers, but also sources of both talent and capital. Global supply chains will adapt to improve environmental and social performance of businesses, and this will impact global logistics chains in several ways.

Airports will need to consider their position and investigate how they can meet and exceed evolving consumer sentiments around ethical and environmental practices.

4.8. Regional migration

The rate of Australians moving to regional areas from capital cities is the highest it has been since largely driven by a shift in employment to a work from home basis, and by those seeking relief from high capital city house prices during COVID-19. Regional migration has driven sharp real estate value growth in many regional locations across Australia. These effects are further compounded by a slowdown in migration from regional areas to capital cities.

It remains to be seen to what degree this population shift is permanent, however it creates new opportunities for regional airports and their communities.

General economic commentary currently focusses on the availability of labour as a major constraint for the recovery from COVID-19 and subsequent growth of our economy.

4.9. Summary – economic outlook and market analysis

Given the strategic importance of Australian airports, due consideration must be given to the wider economic context in which they operate. Aviation is evolving for many reasons and includes sentiments such as:

- Consumer behaviour – video generation, work from home, e-commerce 2.0
- Airline industry factors – fleet renewals, cargo, lease agreements
- Environmental, Social and Governance – net zero, compliance
- Pandemic – safe status, documentation and process, technology
- Geopolitical – rebalancing of market, immigration, sovereignty
- Capacity – airport capacity and demand.

For an Airport Master Plan to be comprehensive, it should consider the wider industry context, now and in the future, and how it intends to respond, rather than maintaining the status quo.

5. GENERAL TRENDS IN AVIATION

Similar to general economics, significant change is also impacting the aviation sector.

COVID-19 continues to impact the global aviation industry significantly, causing massive interruption to passenger networks, and placing pressure on dedicated freighter networks. Some airlines are operating passenger aircraft as freighters to continue to support global supply chains, although this is largely a government-funded exercise to preserve access to export markets. Additionally, COVID-19 is driving a sharp upswing in the adoption of e-commerce based shopping, further complicating the air freight demand scenario, and changing dynamics, potentially forever.

Macro-economic changes occurring prior to COVID-19 can be expected to continue to impact aviation and trade over the next 20 years or more. COVID-19 may have catalysed changes which were already under way.

Some of the themes are discussed in the following pages.

5.1. Role of air cargo

Prior to COVID-19, air cargo was estimated by IATA as representing around 12% of global airline revenues. Air cargo is expected to represent 30% of global airline revenues in 2021, and the relationship between air cargo revenue and passenger revenue has potentially changed forever. This holds implications for many airports aeronautical revenue structures, which have been largely based upon passenger movements.

While this is an important trend it is not likely to directly benefit Moorabbin as the airport does not support international aviation operations. Additionally, the airport is within 1.5 hours of two other international air freight capable airports (Melbourne and Avalon). Entering into the air freight logistics space will see Moorabbin enter a highly competitive, somewhat crowded marketplace; however, given the disruption being experienced by the industry, opportunities that had not previously been considered or were thought to be unfeasible may now eventuate.

5.2. Fleet changes

The aviation industry was already moving towards the use of emerging, highly efficient, long range narrow body jets on point-to-point routes over the use of larger aircraft on a hub and spoke network arrangement. COVID-19 has catalysed this process, with the retirement from passenger service of aircraft like the 747-400 and possibly also the A380. An increased appetite for point-to-point passenger travel (rather than through global hubs), and an increased importance on environmental performance will see airlines transition to twin engine wide bodies like the A350 and B777 on major international routes.

Conversely, airlines will also likely downgauge aircraft operating second tier routes. Where a smaller wide-bodied aircraft was once used, there is high potential for the airline to transition the route to a high-performance narrow body aircraft like the A220's or even the older 737s.

Within Australia aircraft types are shifting around including Qantas which has shifted 717s back to the east coast and has engaged Alliance's new E190's to base out of Adelaide and fly routes for Qantas from there. Industry is taking the opportunity to renew passenger fleet, and many older passenger aircraft are undergoing conversion to freighters.

As route development favours smaller aircraft operating more frequently, over larger, less frequent aircraft, it is anticipated that smaller aircraft will continue to play a large role in recovery and the larger aircraft will be the last to return to full utilisation post-COVID.

For Moorabbin Airport, changes in fleet and airline operations may offer an opportunity to explore the development of a regular, scheduled passenger transport business, but would require the preparation of a suitable aviation development plan and business case and would have a significant lead-in period if the business case were proven.

5.3. Airline risk appetite

Airline businesses are seriously compromised by the economic impact of COVID. While some airlines prior to COVID had demonstrated a willingness to try a speculative new route, this is unlikely to be the case during recovery. To recover their balance sheet and

cash flow position, airlines will only operate genuine, high yielding commercial routes unless being subsidised by another party. Airlines will advocate strongly for subsidies of all sorts for a long time to come.

Successful aviation business cases are likely to demonstrate deep collaboration within a community to ensure the commercial success of a route and are also likely to have some type of risk mitigation element.

In terms of airline decision making out to the 20-year period, it is difficult to predict the long-term appetite for new routes. However, it is noted that given population decrease in some of the world's most advanced nations (Japan, Germany), discussion around peak aviation has commenced for some markets. The notion of achievable endless growth, globally, has started to be eroded.

Moorabbin Airport will find changed airline risk appetite, and the changed environment during the closure of Australia's international borders, as both an impediment, and an opportunity. Increased domestic tourism offers an opportunity to establish new passenger services to locations with suitable demand and aviation infrastructure. However, it is likely that financial support of these services, providing some comfort to airlines about the potential risk, will be required.

5.4. Airline business structure

Airline business structures are likely to change as airlines adapt to the highly volatile and uncertain environment. Traditionally most airlines have both owned (or leased) fleet, and controlled their own customer pipeline and sales platforms. This business model requires two distinct sets of intellectual property - one about operating aircraft safely and efficiently, and another about interpreting demand data to determine likely viable routes.

It is anticipated that these two structures will separate and increasingly, airlines will have short term wet lease arrangements for aircraft with some sort of wholesale type airline and will use these aircraft to offer greater business resilience and adaptability than can be afforded by operating their own fleet.

This approach also offers airlines with legacy industrial relations considerations opportunities to decommission parts of their business which are untenable given existing arrangements.

This is occurring now in Australia, and the various relationships and commercial arrangements that Alliance Airlines are entering in to are a good example of this.

Greater flexibility in airline business structure is likely to create an environment where airlines may be more flexible in trying new routes, as aircraft utilisation is not so directly tied to large capital investment.

5.5. New aviation technologies

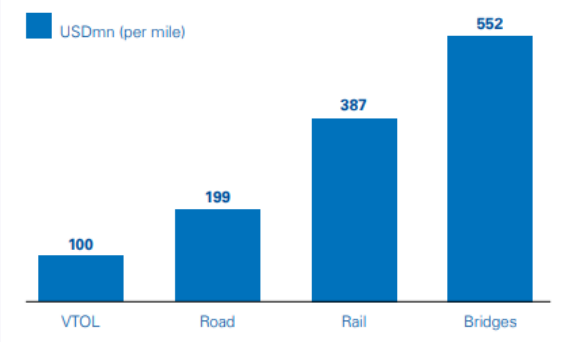
The capability of remotely piloted vehicles is growing constantly. These aircraft, and their sub class, vertical take-off capable machines and drones, will have significant impacts on global freight and logistics, and potentially will also eventually impact passenger businesses.

VTOL is already making headway in Australia. CASA has produced guidance via an Advisory Circular 101-01v3.0 and Airservices Australia has an unmanned air traffic management (UTM) project underway.

There is a need to plan for the accommodation of these vehicles in the long term, both from an infrastructure point of view, and in terms of the regulatory environment. UAVs are increasingly being used in localised delivery services. Large scale drones may be used in larger scale logistics operations such as freighter aircraft, in the more distant future.

Manufacturers have made progress on the aircraft themselves, but the infrastructure necessary to support and enable transportation of people and cargo is not yet in place. For VTOLs to become a reality, ground infrastructure needs to be in place, a robust communication and UTC system, and a seamless mobility-as-a-service (MaaS) platform.

As costs for traditional infrastructure options continue to increase, the lower cost and increased flexibility provided by these new approaches will provide compelling options for cities, local government and states around the world. (Figure 2 refers).



Estimated infrastructure cost for operating VTOL is approx. 50% of the cost incurred in constructing the cheapest ground infrastructure.
(Source: KPMG analysis based on Uber Elevate, Bloomberg and BBC)

Figure 2 Estimated infrastructure cost for operating VTOL

Other technological changes on the horizon include the use of green fuels, hypersonics and electric propulsion aircraft. Various platforms are under development around the world, and it is worth considering the various infrastructure, manufacturing, and maintenance needs of these different types of aircraft operations.

It is possible that some emerging aircraft may require some separation from other commercial aircraft and over time this may become an opportunity for secondary airports with good proximity to urban centres.

Moorabbin may find some opportunities in the evolution of new aviation technologies, particularly as they support commuting from Moorabbin to Melbourne and beyond for work or education. Long term planning should consider the infrastructure requirements to support these technologies.

Additionally, it may evolve that a degree of separation is required from the operation of remote piloted and manned aircraft operations. Potentially, this could create an opportunity for secondary airports to focus on being an airport which supports UAVs. An opportunity such as this may suit Moorabbin Airport.

5.6. Aircraft manufacturing and MRO

Currently, many older aircraft are undergoing reconfiguration to freighters, and airlines are adapting fleet to meet the needs of the emerging new normal. As the industry seeks to continue to lower operating costs, improve safety and lift environmental performance, the MRO and manufacturing sectors will also undergo significant change.

The use of Industry 4.0 technologies such as Artificial Intelligence and Digital Twins pose options for reduced AOG (aircraft on ground) time, due to better predictive maintenance. The use of drones for physical aircraft inspections is also anticipated to reduce time and improve accuracy of inspections to the external air frame. Availability of skilled labour was already a constraint for this sector prior to COVID-19, and with many having exited the industry over the last year, labour shortages are considered a risk moving forwards.

New aircraft variants are likely to evolve as the industry continues to seek a reduced carbon footprint and increased operating efficiencies.

5.7. Flight Training Organisations (FTOs)

COVID-19 has triggered the exit from industry of a large number of personnel, including pilots. As the industry returns to a normal operating model over the next few years, a large number of personnel will be required, including pilots, flight attendants, engineering staff etc. It is possible that a labour shortage will slow industry recovery and the return of aircraft to operation.

Boeing forecasts demand for a further 600,000 pilots globally by 2039, despite the impact of COVID-19 on industry. One third of these pilots are required across the Asia Pacific and while FTOs have struggled through the pandemic the long-term outlook for this industry sector is very strong.

On the other hand, however, industry has already begun on the path to reduce pilot numbers by making headway for RPT single pilot operations. The demand for less pilots in the future may be a feature as well. Lufthansa states it does not need pilots for the

foreseeable future and Cathay Pacific is specifically looking at single pilot operations to be in place by 2025.

In any case – rigour has not been demonstrated in the pDMP to support the decision that flight training should primarily be the focus of aviation development for Moorabbin Airport for the next 20 years.

5.8. Future of Australia's Aviation Sector – Issues Paper.

The Australian Government, Department of Infrastructure, Transport, Regional Development and Communications, released the *Future of Australia's Aviation Sector Issue Paper* in response to the COVID-19 aviation downturn. The paper was released to canvass industry and community views on potential policy directions to manage the opportunities and challenges facing the sector.

> *The General Aviation (GA) sector comprises activities other than scheduled passenger operations. It includes commercial operations such as aeromedical operators, agricultural aviation businesses, aviation-based firefighting services, flight training, aerial work such as aerial photography and surveying, as well as non-commercial aviation activities such as private flying. The Bureau of Infrastructure, Transport and Regional Economics (BITRE) 2017 General Aviation Study highlighted mixed fortunes in an evolving sector. Recent data from the General Aviation Activity Survey shows stagnation in certain sectors such as private flying and sport and recreational aviation. However, other sectors, including aerial work, are experiencing periods of growth. The Study outlined key challenges facing the industry such as fluctuations in the cost and availability of aviation gasoline (Avgas) fuel and maintenance of an ageing, fixed wing VH-registered fleet. It also outlined opportunities for the industry including harnessing the benefits of potential multiple commercial applications of RPAS and targeted measures for enhanced pilot training.*

General Aviation and the FBO sector has enjoyed strong growth through COVID-19 as essential business travel sought a safer, and more reliable mode of travel than commercial passenger flights.

Many operators have evolved product which allows passengers to fly on shared closed charter aircraft for around the cost of a business class ticket on the same city pair. Often this revolves around a membership model. Potentially, the changed dynamic here is permanent and worth considering for regional airports who much make available suitable passenger facilities, or a place for the establishment of a private FBO.

Flying operations support a number of industries. From agricultural flying, through to aerial surveying work, border patrol, scientific flying, fly-in fly-out transfers, remote area logistics, flying doctors and veterinarians, photographers, and tourism. There is a vast array of operators which carry out diverse business operations in general aviation and rotary wing aircraft. Looking first at existing local businesses and understanding their needs and opportunities for growth and supporting that, then considering how that local eco system might be sustainably grown is a key approach to further developing the GA opportunity at airports like Moorabbin.

6. A COMPARISON OF SIMILAR AIRPORT MASTER PLANS

The *Airports Act 1996* establishes the framework for the regulation of leased Federal airports. It specifically details the requirements for Airport Master Plans to provide for strategic direction of the public asset. Given the baseline of the *Airports Act 1996,* it is reasonable to assume Federal leased airports should all produce thorough Airport Master Plans.

A review was undertaken to find similar airports to Moorabbin Airport which also were required to produce Airport Master Plans under the *Airports Act 1996*. This review identified 4 airports for which comparisons have been made with the Moorabbin Airport pDMP.

Based on the Federal requirement for an Airport Master Plan, total aircraft movements, proximity of airport to major cities, flight training focus and leasehold status, the 4 airports chosen were:

- Jandakot Airport (WA) – Preliminary Exposure Draft 2020 Airport Master Plan
- Bankstown Airport (NSW) – 2019 Airport Master Plan
- Parafield Airport (SA) – 2017 Airport Master Plan
- Archerfield Airport (QLD) – 2017 Airport Master Plan

Themes for the comparison include overall strategic vision, aircraft types considered in the plans, analysis of aviation market for expanding focus other flight training, catering for emergency services and commitment to upholding aviation focus.

6.1. Total aircraft movements

Annual aircraft movements provide an indicator from which other comparison could be made. Figure 3 has been sourced from the Jandakot 2020 Preliminary Exposure Draft Master Plan. Jandakot's Master Plan use of this graphic also provides validation these 5 airports are comparable.

FIGURE 4.1 - GENERAL AVIATION AIRPORTS MOVEMENT COMPARISON

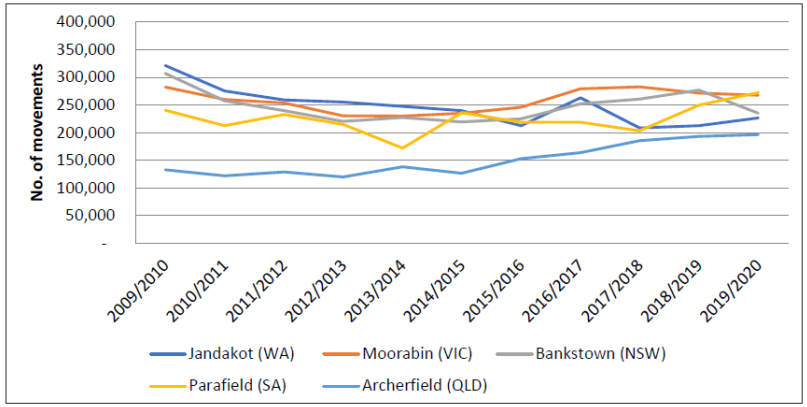


Figure 3 General Aviation Airports Movement Comparison

The following paragraphs introduce examples and excerpts from the comparable Airport Master Plans.

6.2. Strategic vision Archerfield Airport example

Protecting the future growth of aviation requires a strategic view to nurture and grow existing and new markets. Archerfield presents its vision below:

> *Archerfield Airport Corporation strives to nurture the dynamic potential of Archerfield as a superior aviation destination. Its vision is for the airport to be the focus of general and corporate aviation in Southeast Queensland and a sustainable aviation and enterprise hub, integrated with and serving the growing needs of Brisbane. Archerfield is Brisbane's metropolitan airport. It will always be the focus of general aviation in Queensland. It will continue to develop as a centre of excellence for aeronautical and related activities, catering for corporate aviation, flying training, charter, freight, aeromedical and emergency services; supported by a range of allied businesses.*
>
> *The airport infrastructure will be developed progressively to meet the changing needs of aviation and associated growth in Queensland.*
>
> *AAC will continue to work with existing aviation businesses on the airport to encourage their long-term sustainability, and will seek to attract new viable aviation businesses…*

In contrast, the Moorabbin Airport pDMP states:

> *This Master Plan is underpinned by providing for safe and viable general aviation flight training and education opportunities and the airport is planned around the centrally located airfield and aviation precincts.*

The Aviation Development Plan at Section 7.0 notes:

> *Flight training remains the primary strategic focus for user growth with flight training operations contributing to 90% of movements at the Airport. Accordingly, this Master Plan seeks to deliver facilities and infrastructure to maximise the potential growth of flight training operations, subject to other operational limitations.*

This singular focus on flight training operations, potentially at the expense of other aviation development opportunities, is questionable in the context of current and near-term prospects of the flight training industry.

6.3. General current market condition analysis

The Jandakot Airport Preliminary Exposure Draft 2020 Master Plan examines a national trend as described below:

> *Many of the cost pressures that have negatively affected general aviation activity in Australia over the past five years continue to impact the industry, most notably the price of aviation fuel and more recently Covid 19. it is uncertain whether training bases such as Jandakot Airport stand to benefit from an upsurge in flying training activities in the next eight years as previously anticipated. Although flying training numbers are steady at this time there may be a temporary future drop off of training activity due to the difficulties of international students being granted access into Australia during the Covid19 pandemic, Flying training and charters continue to make up the largest categories in the general aviation sector, whilst other categories such as private and aerial work remain relatively flat. Helicopter activity will continue to grow, as evidenced by the increasing proportion of helicopters within the overall Australian general aviation fleet mix.*

The Moorabbin pDMP does not consider these issues in any detail.

6.4. Detailed analysis of air traffic

Rather than working backwards from an ultimate capacity scenario as provided in the Moorabbin pDMP, Bankstown's Airport Master Plan provides in depth traffic movements analysis developed by an experienced third party provider that underpins conclusions in its plan. Figure 4 and Figure 5 refer.

4.2.1 AIR TRAFFIC FORECASTS FOR BANKSTOWN AIRPORT

Total aircraft movements are forecast to grow from 244,612 in 2017 to 340,057 by 2039 (based on financial year). Table 4.1 shows a higher rate of growth in the period 2017-2024. This forecast is based on a survey of aviation service providers at the Airport, which indicates an increase in planned activity.

The modelling results indicate strong aircraft movement growth for both fixed-wing and helicopter movements in the next five years at the Airport. Helicopter movements are anticipated to continue to grow more rapidly than fixed-wing general aviation movements.

Research undertaken by Tourism Futures International (TFI) in 2018 concluded that incomes and population growth are the two most significant factors determining demand for aviation and non-aviation activities at the Airport. Following is a summary of assumptions used to forecast future demand for aviation at the Airport:

- Income. The stronger the economy, the greater demand there is for aviation training, engagement in recreational and business-oriented flying, and purchasing aircraft.
- Population growth. This increases the demand for flying overall.
- Commercial aviation sector growth, both domestically and internationally. This influences the demand for pilot training.
- Aviation operating costs. These include the cost of aircraft, spare parts, fuel, airport charges, and regulatory compliance
- Exchange rates. Changes in the exchange rate influence the cost of oil, aircraft and spare parts in Australian Dollars.

TFI uses specific indicators to forecast growth in demand for aviation at the Airport. These include:

- NSW economic performance
- NSW and Sydney population growth
- Currency exchange rates
- Oil prices
- Committed and proposed aviation development projects.

The compound annual growth rate (CAGR) used to generate aviation forecasts for the Airport varies between one and three per cent per annum. The variation is primarily to forecast changes in economic conditions. The growth forecasts are summarised in Table 4.1.

Table 4.1: TFI Projections of Air Traffic Movements at Bankstown Airport - Financial Year (Source: TFI)

Years end 30 June	Movements*			CAGR Period	CAGR movements (%)		
	Fixed Wing	Helicopter	Total		Fixed Wing	Helicopter	Total
2012	203,530	36,336	239,866				
2017	201,929	42,683	244,612	FY12 to FY17	-0.2%	3.3%	0.4%
2024	247,888	46,343	294,231	FY17 to FY24	4.2%	1.7%	3.8%
2029	259,945	49,807	309,752	FY24 to FY29	1.0%	1.5%	1.0%
2034	272,300	52,883	325,183	FY29 to FY34	0.9%	1.2%	1.0%
2039	284,489	55,568	340,057	FY34 to FY39	0.9%	1.0%	0.9%
				FY17 to FY39	**1.6%**	**1.2%**	**1.5%**
				FY24 to FY39	**0.9%**	**1.2%**	**1.0%**

* Figures based on Financial year

Figure 4 Detailed analysis of traffic forecast movements – Bankstown Airport

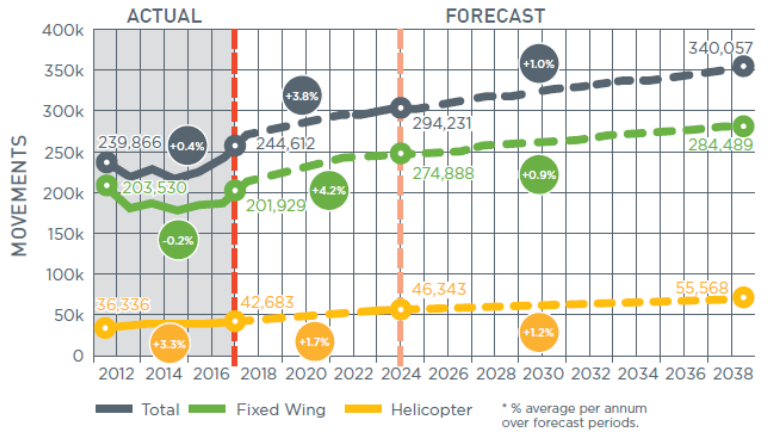


Figure 4.6: Aircraft Movements at Bankstown Airport (Actual FY12 to FY17, Projections from FY18 (Source: TFI)

General Aviation continues to be the predominant form of aviation activity at Bankstown Airport and is forecast to grow by 3.8 percent per annum to 2024. This is reflected in the commitments that current operators at Bankstown Airport have made for growth of their existing businesses.

For the remainder of the Master Plan period, general aviation growth is forecast to slow down to one per cent annual growth. However, helicopters will continue to form an important part of the aviation mix at the Airport and are forecast to grow steadily over the 20 year period to 2039.

Further growth in global pilot training and the potential expansion of such activities at Bankstown Airport may significantly impact upon annual growth estimates.

The future Western Sydney Airport is likely to impact on operations at Sydney and Bankstown Airports in the longer term. Impacts on airspace and potential competition for general aviation traffic in the Greater Sydney Region may exert pressure (both positive and negative) on general aviation. The forecast and projections in this Master Plan have not factored in the impact of Western Sydney Airport, which is scheduled to commence operating in 2026.

Figure 5 Continued analysis of traffic forecast movements – Bankstown Airport

6.5. Flight training analysis

The following extract from the Jandakot Airport Preliminary Exposure Draft 2020 Master Plan provides an example of a rigorous appreciation of flight training activity at Jandakot Airport.

> *Air traffic movements at Jandakot Airport reached a peak of 415,284 annual movements in 2005/2006, and declined significantly after the Global Financial Crisis. While the past ten years have seen very little movement growth and local training schools previously indicated that the demand for pilot training was expected to increase in 2015/2016, this did not eventuate. China Southern Flying College Western Australia (CSFCWA) was grounded by CASA for the majority of 2018 which accounted for the overall decrease in movements at the airport for the financial year 2017/2018. The training schools were confident of continued growth over the next eight years. This view is supported by the addition of three new flying schools commencing operations at Jandakot Airport in the latter half of 2018, the resumption of operations at CSFCWA and the commencement of a large flying school in 2020 (Pacific Flight Services). All of these flying schools have been impacted by Covid 19.*

6.6. Capability to accept emergency services fixed wing aircraft

The Moorabbin pDMP makes no mention of provision for fixed wing emergency services aircraft. The 4 comparable airports all make provisions and plans for a mix of turboprop and small jet emergency services aircraft such as those used by the RFDS.

Moorabbin Airport has a limit of maximum aircraft weight of 5700 kg and/or wingspan limit above 15 m across all runways. (Figure 6 Airservices Australia Aeronautical Information Package, Enroute Supplement Australia (ERSA) refers). This prevents aircraft used by emergency services such as the PC24 (Figure 8 refers, source RFDS), Kingair 350 (Figure 9 refers, source RFDS) and Airtractor (commonly used in aerial firefighting operations) from being able to plan to use Moorabbin Airport without first seeking operator approval. (Figure 7 refers – source aircraft data viewer Transoft Solutions).

A lot of smaller airports around Australia are being upgraded so they can safely accommodate the unrestricted operation of these aircraft to ensure their communities can access timely aeromedical services, and it would be appropriate for Moorabbin Airport to support these operations without restriction.

MELBOURNE/MOORABBIN **ELEV 55**
AVFAX CODE 3003

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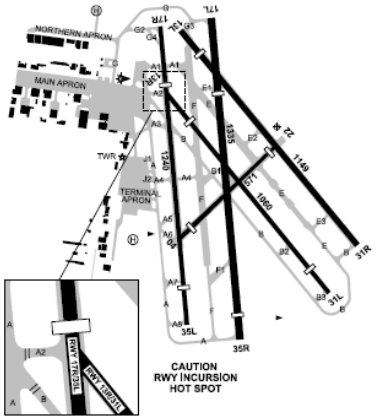
AD OPR Moorabbin Airport Corporation, Airport Management Centre, 66 Bundora Parade, Moorabbin Airport, VIC, 3194. Email: admin@moorabbinairport.com.au. PH 03 8587 8000 (JO 0900-1700 Local). ARO 0428 058 295 (H24). Fax 9587 1782.



REMARKS

1. **AVAILABILITY**
   a. AD Charges: All ACFT - contact AD OPR for details.
   b. PPR for instrument APCH or AWK WI the ML Terminal Airspace. Phone 03 9235 7337 for bookings.
   c. PPR from the AD OPR for the following:
      (i) ACFT ABV 5,700KG MTOW.
      (ii) ACFT ABV 15M wingspan.
      (iii) Recreational ACFT - Australia.
      (iv) HEL using LDG sites other than Southern HLS.
2. This AD is a Security Controlled Airport.

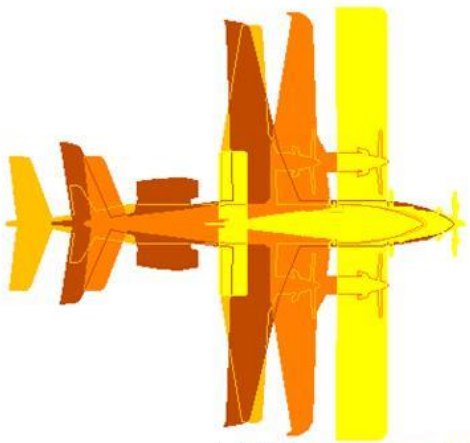
HANDLING SERVICES AND FACILITIES

AIR BP: 2000-0700 UTC JO, 2000-0600 UTC JF. Phone 03 9587 5201, VHF 130.675 callsign "AIR BP", AH AVGAS Card Bowser. AVGAS, JET A1, O117, O125, O156. BP Carnet card, V, MC.
World Fuel Services: Tysons Aerofuels: 2100-0800 UTC DLY. Phone 03 9580 2861, VHF 121.65 - callsign "AEROFUELS". 24H AVGAS Card bowser AH 1HR PN Phone 0419 336 133, 0418 125 636. AVGAS, JET A1, O117, O125, O156. Carnet, V, MC.
VIVA Energy Aviation: 2100-0800 UTC. AH call-out fee may apply. Phone 03 9587 4277. AVGAS and JET A1. H24 AVGAS card bowser. VIVA Energy Aviation Fuel2Sky card, V, MC.

General

AD OPR does not provide ACFT marshalling services. All requests for ACFT marshalling should be directed to the airlines or FBO.

Figure 6 Aircraft weight restricted to 5700 kg and/or wingspan above 15 m



		PC-24	King Air 350	B1900	AT-802F
Classification					
ICAO/EASA Code letter		B	B	B	B
ICAO/EASA OMGWS		0-4.49 m	4.5-5.99 m	4.5-5.99 m	0-4.49 m
FAA ADG		II	II	II	II
FAA TDG		1A	2	2	1A
IATA Type code		N/A	BET	BES	No data
ICAO Designator		PC24	B350	B190	AT8T
ICAO Wake Turbulence Category		L	L/M	M	No data
Main dimensions					
Overall length	(m)	16.82	14.22	17.63	10.88
Wingspan	(m)	17.00	17.65	16.61	18.06
Wheelbase	(m)	6.97	4.95	7.26	1.00
Nose to nose gear	(m)	1.62	0.36	0.50	2.10
Nose to main gear center	(m)	8.59	5.31	7.76	3.10
Cockpit to main gear center	(m)	5.70	2.55	5.17	0.01
Main gear span	(m)	3.54	5.67	5.67	3.36
Engine span, outer	(m)	3.83	7.86	7.92	2.73
Tail height, min./max.	(m)	5.30 / 5.30	4.37 / 4.37	- / -	3.41 / 3.41
Turning characteristics					
Nose gear angle, max. steering	(deg)	60.0	65.0	47.0	65.0
Nose gear angle, max. effective	(deg)	57.0	62.0	44.0	62.0
Nose gear turning radius, min.	(m)	8.31	5.61	10.45	1.13
Weights					
Maximum Taxi Weight (MTW)	(kg)	-	-	-	-
Maximum Take-Off Weight (MTOW)	(kg)	8,150	7,000	7,500	7,257
Maximum Landing Weight (MLW)	(kg)	7,520	-	-	7,257
Seating capacity, max		-	-	19	-

Figure 7 Emergency services aircraft depiction (MTOW, wingspan)

Figure 8 RFDS PC24 too heavy and wingspan too wide to use Moorabbin Airport

Figure 9 RFDS Kingair 350 too heavy and wingspan too wide for Moorabbin Airport

6.7. Consultation analysis

The Department of Infrastructure and Transport Airport Development Consultation Guidelines states:

> *While consultation should be viewed as an on-going process, at a minimum it is seen as constructive for ALCs to initiate discussions with the various categories of persons set out in sections 80 (regarding MPs) and 93 (MDPs) of the Airports Act5 well before entering into the formal public comment process on the development of these documents. When considering whether to approve or refuse to approve a draft Plan, the Airports Act provides that the Minister must have regard to those consultations undertaken in preparing that document.*

Each of the comparable Airport Master Plans provide detailed events such as forums and events for the purposes of consultation. The comparable AMPs provide specific information on consultation – appendices for example, stating the date, name/organisation, comments, and actions from the consultation meetings. Figure 10 (Parafield AMP 2017) and Figure 11 (Bankstown AMP 2019) provide examples.

The Moorabbin pDMP, like the 2015 Master Plan, lacks any specific details on consultation.

Appendix A Stakeholder Consultation

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Table 2.2 Stakeholder Consultation

Date	Name/Organisation	Consultation	Comments	Action
1/12/15	DIRD	Meeting	Advised DIRD of Preparation of Exposure Draft Master Plan due in early 2017.	Nil
18/08/16	Parafield Airport Consultative Committee	Committee Forum	2017 Master Plan update to Committee noting that studies for the 2017 Airport Master Plan have officially commenced.	Nil
23/08/16	DIRD	Meeting	Advise of Preparation of Exposure Draft Master Plan due in early 2017.	Nil
23/08/16	Airservices Australia	Meeting	Advise of Preparation of Exposure Draft Master Plan due in early 2017.	Nil
23/08/16	CASA	Meeting	Advise of Preparation of Exposure Draft Master Plan due in early 2017.	Nil
10/11/16	Airport Planning Coordination Forum	Committee Forum	Noted that PAL will continue to work on the update of the Master Plan, with the intention to provide the final Master Plan to the Minister by November 2017.	Nil
17/11/16	Parafield Airport Consultative Committee	Committee Forum	2017 Master Plan Update noting the PAL Master Plan is due in November 2017. The Draft Master Plan and the information gathering process is underway, commencing now until January 2017. A number of surveys have been conducted with tenants and currently formulating the Economic Impact Study and Aircraft Forecasts. The Consultation process will start with the State, councils and various Government departments in quarter one of 2017. The provisional Exposure Draft is scheduled for April/May 2017 with the public consultation period in quarter three of 2017 and supplied to the Minister 1 November 2017.	Nil
9/02/17	Airport Planning Coordination Forum	Committee Forum	An update was provided on the Parafield Airport Master Plan 2017, advising that the Master Plan is currently being prepared, with the Exposure Draft likely to be completed by May 2017, and consultation on the Preliminary Draft scheduled to be undertaken from July 2017.	Nil
9/02/17	Parafield Technical Working Group	Committee Forum	Discussed the Master Plan, its progress and the need for the group to meet to discuss the fleet mix and flying numbers.	Nil
16/02/17	Parafield Airport Consultative Committee	Committee Forum	Nil	Nil

Figure 10 Example Parafield AMP 2017 consultation Appendix

STAKEHOLDER CONSULTATION

INITIAL STAKEHOLDER CONSULTATION AND BRIEFINGS

As part of the initial consultation stage during the preparation of the Preliminary Draft Master Plan, BAL has actively engaged with a wide range of government, industry and community stakeholders.

These have included:

- Australian Government agencies, including the Department of Infrastructure, Regional Development and Cities, Department of Environment and Energy, Airservices Australia and CASA
- NSW Government agencies, including Transport for NSW, Roads and Maritime Services, Department of Planning, Industry and Environment and the Environment Protection Authority
- Local Government, including representatives from Canterbury Bankstown Council, Liverpool Council and Fairfield Council
- Airport business operators
- The wider community (primarily through the Bankstown Airport Community Aviation Consultative Committee)
- The feedback and comments received during this initial engagement have contributed to the Preliminary Draft Master Plan.

In accordance with section 79(1A) of the Airports Act, BAL has formally advised the following of its intentions to prepare the new Master Plan:

- NSW Minister for Planning
- NSW Department of Planning, Industry and Environment
- The three Local Governments surrounding the Airport – Canterbury-Bankstown, Liverpool and Fairfield Councils.

PUBLIC CONSULTATION SUMMARY

As required by the Act, the Bankstown Airport Preliminary Draft Master Plan 2019 was exhibited for public consultation for 63 business days from 26 October 2018 to 25 January 2019. Throughout this phase, a range of stakeholder and community engagement activities were undertaken.

- Public notification the Preliminary Draft Master Plan had been released for public comment. These include:
  - State newspapers – The Sydney Morning Herald and The Daily Telegraph
  - Local area newspaper – Canterbury-Bankstown Express
  - Multilingual newspapers – Future News (Arabic), Australian Chinese Daily (Chinese) and Viet's Herald Viet Luan (Vietnamese).
  - Newspaper notices detailed the Preliminary Draft Master Plan, the consultation period, locations where copies of the Preliminary Draft Master Plan could be viewed or purchased, and details of Bankstown Airport's website, project phone number and email address
- Public display of the Preliminary Draft Master Plan The locations included:
  - Bankstown Airport Passenger Terminal
  - Bankstown Library and Knowledge Centre
  - Fairfield Council
  - Liverpool Library
  - A dedicated Master Plan website, email and phone line
  - A notice in the Aero Flyer October edition and a special edition specfically for the Master Plan
  - A Bankstown Airport Master Plan 2019 Quick Reference Guide and five factsheets. Hardcopies of these documents were available in at locations where the Preliminary Draft Master Plan were placed and available online via the Bankstown Airport website.
- Community Information sessions at the following locations:
  - IGA Georges Hall – 22 November 2018
  - Bankstown Central – 23 November and 24 November 2018
  - Master Plan presentation to the Airport tenants on 22 November 2018.

A total of 23 submissions were received during this period, with an additional 2 made after the close of the public consultation period.

All submitters received a written acknowledgement from Bankstown Airport.

Of the submissions received, the majority of the concerns identified are with regards to change in the ANEF 2039, flooding and water management at the Airport and the Ground Transport Plan.

The NSW Government raised concerns primarily in regards to traffic movement around the Airport and the need to reach an agreement on road and intersection improvements including cost sharing.

Adjoining council submissions primarily focused on flooding and water management, environmental strategy, Ground Transport Plan, and ANEF 2039 and land use planning issues (i.e. out of centre retail development).

Residents within close proximity to the Airport raised concerns primarily around aircraft noise and impacts. Existing tenants at the Airport expressed concerns around the Land Use Plan, commercial agreements and potential loss of general aviation activity at the Airport.

BAL has given due regard to the written comments made in relation to the Preliminary Draft Bankstown Airport Master Plan 2019 from submitters and stakeholders, including those required under the Airports Act. The Draft Master Plan 2019 has been updated to respond to key issues raised.

A detailed response to all submissions raised, giving due regard to such submissions, has been provided to the Minister for Infrastructure, Transport and Regional Development.

Figure 11 Example Bankstown AMP 2019 consultation

6.8. Comparison Table

Table 1 illustrates pertinent comparisons between Moorabbin, Jandakot, Bankstown, Parafield and Archerfield Airports.

Table 1 Comparison of similar recent Airport Master Plans

Aspect of comparison	*Moorabbin 2021 pDMP*	*Jandakot (2020 AMP)*	*Bankstown (2019 AMP)*	*Parafield (2017 AMP)*	*Archerfield (2017 AMP)*
Actual total aircraft movements (FY2019)	271,706	213,990	277,242	250,170	193,696
Max Pavement Classification Number (PCN)	Up to 5700 kg	PCN 11 *(18 000 kg)*	Up to 20,000 kg	PCN 6 *(>7000 kg)*	PCN 14 *(18 600 kg)*
Comprehensive market analysis	✗	✓	✓	✓	✓
Provision for fixed wing emergency services up to B350, PC24 without prior permission	✗	✓	✓	✓	✓
Specific detailed airport development eg, increasing runway lengths, specific taxiway works	✗	✓	✓	✓	✓
COVID-19 effects on aviation - considerations	✗	✓	N/A	N/A	N/A
Stakeholder - detailed consultation disclosure (times/dates) and detailed summary	✗	✓	✓	✓	✓
Detailed aircraft annual movement forecast	✗	✗	✓	✓	✓

7. PROGRESSION FROM PREVIOUS PLAN

There has been a reduction in the scope of aviation operations from 2015 to 2021 in respect of aircraft movements, practical capacity and the aerodrome reference code (ARC) for two runways.

On the other hand, the aircraft traffic spectrum modelled in the Australian Noise Exposure Forecast introduces larger aircraft that are not compatible with the nominated movement area pavement bearing strength and require prior permission to operate.

7.1. Practical capacity

The 2015 Master Plan asserted that the existing runway complex (which hasn't substantially changed) provides adequate capacity to accommodate the long range forecasts of 500,000 movements. It goes on to note that, while the practical capacity of 650,000 movements, as determined in the 2010 Master Plan, was feasible, the reduced number of 500,000 movements was established as appropriate following consultation with State and local governments.

The 2010 Master Plan suggested the airport's capacity as being in the region of 600,000 annual movements. There is no justification of this number through reasoned analysis or reference to applicable methods or industry standards.

The pDMP now models 375,000 movements as the ultimate capacity. The reduced number of movements is justified on the basis that the previous greater number of movements is incompatible with the airport's airspace as it is currently managed including subsequent to the introduction of Class D airspace and the circuit booking system. There is no justification of this assertion through reasoned analysis.

Class D airspace was introduced at Moorabbin and the other metro airports in June 2010, and would have been in place when the 2015 Master Plan was produced. This airspace and the associated air traffic control procedures have not substantially changed in the intervening period and should not realistically cause, even coupled with the introduction of the circuit booking system, such a significant (close to 43%) reduction in the practical capacity of the airport.

The circuit booking system has almost certainly resulted in more efficient aircraft operations, but is unlikely to have significantly curtailed the actual capacity of the airspace.

The progressive reduction in the modelled practical capacity across the last three Master Plans is shown in Table 2.

Table 2 Reduction in nominal aircraft movements practical capacity

Year	2010 Master Plan	2015 Master Plan	2021 (pDMP)
Movements (practical capacity)	600,000 (ANEF modelled on 500,000)	650,000 (ANEF modelled on 500,000)	375,000 (ANEF modelled on 375,000)

7.2. Design aircraft

In the 2015 Master Plan, the aircraft types modelled in the ANEF (at Figure 11.5) had a maximum take-off weight (MTOW) of <5700 kg (which is currently the published pavement strength for all pavements on the airport). The largest aircraft modelled were the B200 King Air and EMB110 Bandeirante.

The ANEF now models a number of aircraft with MTOW >5700 kg (up to 9000 kg) including the Beech 1900 (pictured at the airport in Figure 12) and several Cessna jets (Mustang, Citation), although the runway, taxiway and apron pavement strength has not been improved and is not planned to be. The airport's entry in En Route Supplement Australia requires that any aircraft with MTOW >5700 kg must apply for approval to operate at the airport.

Airservices Australia reports (on its website – Aircraft Movements at Australian Airports https://www.airservicesaustralia.com/aviation-reporting/movements-at-australian-airports/) there were 664 movements of aircraft with MTOW >7000 kg in the 2020 calendar year.

Figure 12 Beechcraft 1900 has MTOW > 5700 kg

Clearly the airport has supported and expects to continue supporting the operation of aircraft with MTOW >5700 kg but does not intend to provide pavement suitable for these operations to be able to use the aerodrome without prior permission.

The 2015 Master Plan and this pDMP anticipate operations by aircraft with a wingspan up to 18 m or less, but a 15 m wingspan limit has been published since at least 2014. The airport's entry in En Route Supplement Australia requires that any aircraft with a wingspan of >15 m must apply for approval to operate at the aerodrome.

Such aircraft include the B350 and PC24 aircraft, which are increasingly being used to conduct aeromedical retrieval and patient transfer operations by RFDS and other contracted providers of these services.

Another example is the Cessna Caravan, pictured in Figure 13, with a wing span of 15.9 m – this aircraft requires specific approval to operate at Moorabbin.

Figure 13 Cessna Caravan requires approval to operate at Moorabbin

7.3. Runway code numbers

Australia has adopted the International Civil Aviation Organisation (ICAO) methodology of using a code system, known as the Aerodrome Reference Code, to specify the standards for individual aerodrome facilities which are suitable for use by aeroplanes within a range of performances and sizes. The Code is composed of two elements: element 1 is a number related to the aeroplane reference field length; and element 2 is a letter related to the aeroplane wingspan and outer main gear wheel span. Table 3 refers.

Table 3 Aerodrome Reference Codes (Source – Manual of Standards Part 139)

Aerodrome Reference Code				
Code element 1		Code element 2		
Code number	Aeroplane reference field length	Code letter	Wing span	Outer main gear wheel span
1	Less than 800 m	A	Up to but not including 15 m	Up to but not including 4.5 m
2	800 m up to but not including 1200 m	B	15 m up to but not including 24 m	4.5 m up to but not including 6 m
3	1200 m up to but not including 1800 m	C	24 m up to but not including 36 m	6 m up to but not including 9 m
4	1800 m and over	D	36 m up to but not including 52 m	9 m up to but not including 14 m
		E	52 m up to but not including 65 m	9 m up to but not including 14 m
		F	65 m up to but not including 80 m	14 m up to but not including 16 m

The runway code numbers for the 2 longest runways are planned to be reduced: runway 17L/35R from code 3 to code 2, and runway 17R/35L from code 2 to code 1. Both runways are longer than 1200 m and therefore technically code 3 length.

A summary of current and planned runway code numbers is provided in Table 4 (source: Airservices Australia AIP ERSA-RDS, pDMP).

In our experience, it is inadvisable to reduce runway code numbers because once the applicable spatial requirements such as runway strip and obstacle limitation surfaces are reduced, it is very difficult and usually cost prohibitive to expand them again.

Table 4 Runway codes - current and pDMP

Runway	*Length (m)*	*Width (m)*	*RWS (m)*	*2015 MP*	*Code number: 17 Jun 21 ERSA-FAC*	*Code number: pDMP*	*Comments*
17L/35R	1335	30	150	3B	3	2	Code 3 length, suits OMGWS up to 9 m
17R/35L	1240	18	90	1B	2	1	Code 3 length, Width suits code 1 and OMGWS up to 6 m
13L/31R	1149	30	90	2C	2	2	Code 2 length, suits OMGWS up to 9 m
13R/31L	1060	18	60	1B	1	1	Code 2 length, Width suits code 1 and OMGWS up to 6 m
04/22	571	18	60	1B	1	1	Code 1 length, Width suits OMGWS up to 6 m

8. WINDSHEAR

Building-induced windshear can be a problem for aviation operations in cases where structures are situated close to airport runways. When a significant obstacle is in the path of a crosswind to an operational runway, the wind flow will be diverted around and over the building and can cause downwind turbulence.

8.1. National Airports Safeguarding Framework Guideline B

Development at Moorabbin Airport requires consideration of NASF Guideline B:

> *NASF Guideline B provides guidance to Commonwealth, state/territory and local government decision makers and airport operators to manage the risk of building generated windshear (i.e. changes in wind speed and/or direction between two points) and building generated turbulence (i.e. rapid irregular changes in wind speed and/or direction at a fixed point) at airports. This Guideline is designed to assist land use planners and airport operators in their planning and development processes to reduce the risk of building generated windshear and turbulence near runways at airports.*

The Moorabbin 2015 AMP provided the following statement concerning building generated windshear (NASF Guideline B):

> *MAC has considered the impact of building-generated windshear in relation to development proposals in this 2015 Master Plan, and has concluded the compliance with NASF guidelines will be achieved.*

There is compelling evidence that this intention has not been achieved.

8.2. En Route Supplement Australia (ERSA) references

The 2014 and 2015 ERSA FAC pages make no mention of possible windshear and turbulence. Figure 14 is an extract from the ERSA FAC page for Moorabbin Airport effective 05 March 2015 (Source: Airservices Australia).

ADDITIONAL INFORMATION

1. High concentration of birds, mainly seagulls, on and in vicinity of AD.
2. PJE OPS WI 2NM RAD of Point Ormond (APRX BRG 150DEG, 9NM FM YMEN ARP) SFC-FL140.

Figure 14 ERSA FAC page extract 05 March 2015

The current ERSA FAC pages for Moorabbin (effective 17 June 2021) note possible windshear and turbulence under multiple wind conditions across various runways. Figure 15 refers (source: Airservices Australia).

ADDITIONAL INFORMATION

1. PJE OPS WI 2NM RAD of Point Ormond (APRX BRG 150DEG, 9NM FM YMEN ARP) SFC-FL140.
2. Possible wind shear and turbulence:
   a. West of RWY 04 THR when wind FM west south westerly direction at 22KT and ABV.
   b. On RWY 17R/35L and south of 35L THR when wind FM south westerly direction at 26KT and ABV.
   c. On RWY 13L/31R when cross wind exceeds 10KT FM easterly sector BTN BRG 310 - 130 MAG.
   d. North of RWY 13L/31R when wind FM west south westerly direction at 28KT and ABV.

Figure 15 ERSA FAC page extract re windshear and turbulence 17 June 21

8.3. Building development since 2015

In May 2015 several land areas had not been developed – see Figure 16 (Source: Google Earth). Since 2015, these areas have been developed, as illustrated in Figure 17 (source: Google Earth) and have consequently introduced or at the very least, contributed to the windshear and turbulence described in current ERSA FAC pages for Moorabbin (Figure 13 refers).

Figure 16 Satellite imagery - May 2015

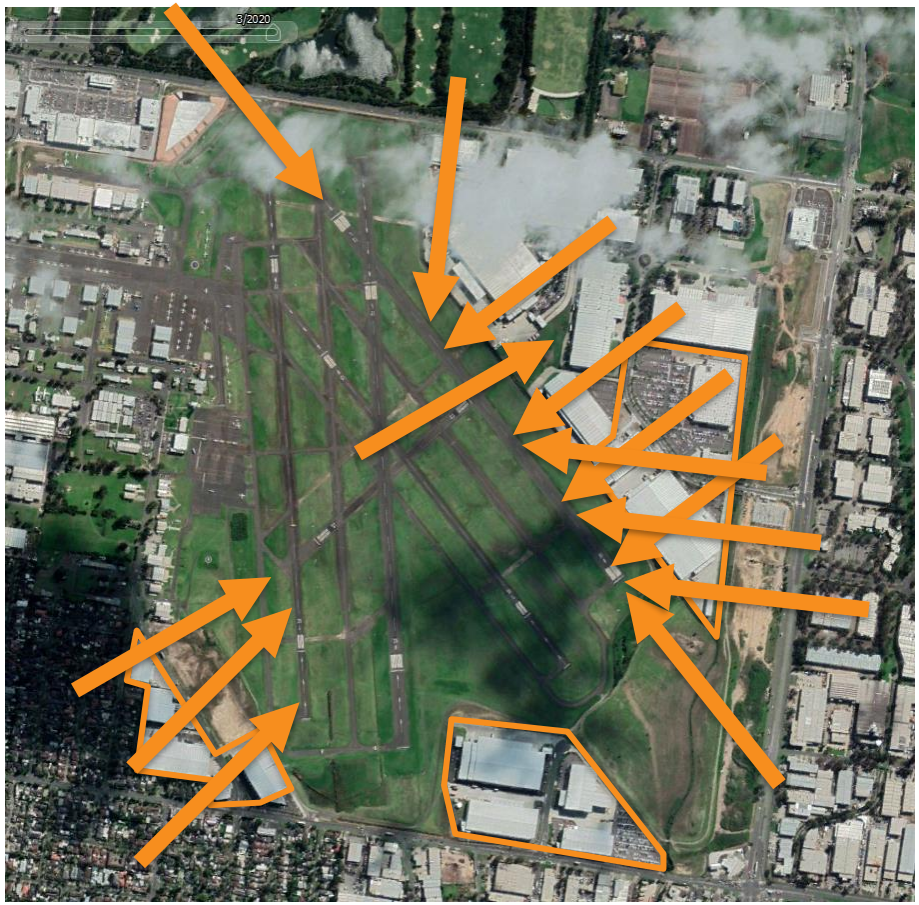

Figure 17 Satellite imagery – March 2020

9. ISSUES

Table 5 summarises issues with respect to the pDMP in page number order.

Table 5 Consolidated issues from the pDMP

Reference	*Summary*	*Concerns*
Introduction 1.0	Aviation movements will grow from 268,000 per year today to 375,000 at the end of the master planning period. Movements increased by 10% over the past five years.	No evidence or statistical analysis is provided to support this assertion with respect to claimed movement growth. However, this claim is central to all that follows in the master plan.
1.1.1 – Overview – p 10	Consistent with prior Master Plans, land use in Master Plan 2021 is framed around aviation objectives and activities. Precincts are planned in response to safety, airspace, our flight training role and aviation infrastructure.	Assertion is not supported by evidence. Lack of transparency around objectives, stake-holder reviews (if any) and feedback. Aviation areas has reduced over the past 5 years and land use is framed around non-aviation objectives. Encroachment into aviation space has significantly reduced aircraft parking area. Figure 18 refers.  Figure 18 Reduced aircraft parking
1.1.2 Key objectives of Master Plan 2021 include:	- growing flight training activity to 1,800 students per year, an increase of 450 students from 2020 levels and forecast as the safe maximum achievable within airspace capacity constraints of the airport;	Lack of evidence and supporting data of student numbers. For example, were full time equivalent (FTE) student numbers used for consistency? Was FTO CAE (Moorabbin's largest FTO) consulted?

Reference	*Summary*	*Concerns*
1.1.2 – Objectives – p 12	Sustainable planning and development - investing a further $300 million in aviation and non-aviation activities by 2029. $500 million has been invested by Moorabbin Airport and its customers from privatisation to 2020; and –	Lacking in detailed supporting evidence as to aviation related expenditure. Audited financials for example.
	–planning and delivering innovative aviation and non-aviation development programs that lead the way in design, customer amenity and sustainability. Non-aviation development continues to subsidise future investment in the Airport's aviation activities, while generating further employment for the region;	Specific operational improvements for the runways and taxiways have not been provided by the pDMP.
1.1.3 – Key Achievements since Master Plan 2015 - p 13	modernised 30% of aviation facilities on leased sites. The largest facility developed was the four-hectare CAE project.	Lack of detail about claims of 30% modernisation aside from the CAE project. Can a list of total properties versus those modernised be produced?
1.2 Aviation Support Land Use	– apron pavement increasing by 10,000 sqm and redesigned to achieve more airside sites being proximate to runways	Lack of detail showing this improvement (diagram for example).
1.3 Aviation land - p 14	- 40 hectares of land for the aviation support precinct. - is not a constraint for aviation activity at the Airport. Safety and airspace capacity restrictions remain the major constraint. - is planned for existing and new aviation operators	Lack of detail to support the assertion allocated space provides for existing operators and future aviation expansion. Lack of detail to support the claim *'is not a constraint'*.
Aviation initiatives 1.3 - p 14	50% of flight training sites could be redeveloped to add a second storey or ground floor extension.	Lack of detail as to how 50% is concluded. Lack of detail around how it would be implemented without affecting the on-going day-to-day operations of the flight training operations.
Aircraft Parking 1.3 - p 14	6 hectares (160,000 sqm) of aircraft parking is provided under Master Plan 2021. Whilst our design flight training aircraft requires 99 sqm, Moorabbin Airport standard parking provides 120 sqm; and– Master Plan 2021 plans up to 720 aircraft parking spaces. Today there are 320 aircraft based on airport and its forecast this will rise to 420 over Master Plan 2021	The pDMP does not provide detailed information needed to enable assessment as to how the claimed parking for the number of aircraft will work, what access is available, what the situation is with respect to ease of access and how these sites are located.

Reference	Summary	Concerns
		The car parking which is visible in the plan does not appear to be co-located with flying schools and commercial operators. There appears to be no provision for private aircraft parking. Figure 19 refers.  Figure 19 lack of additional aircraft parking
Hangars 1.3 - p 14	Master Plan 2021 plans for the greatest amount of hangar floorspace since privatisation,	The pDMP does not appear to detail the locations of these hangars. Vague descriptions such as 'Main apron' and 'Northern Apron' lacks specific detail.
	[hangars] - are not required on a day-to-day basis for 92% of flight training aircraft. Rather the hangars at Moorabbin Airport are predominantly used for aircraft maintenance and rotary aircraft parking.	This line suggests much less use of hangarage for non-maintenance activities and rotary use than actually takes place. Apparent lack of existing hangar space for maintenance operators. Several privately owned aircraft now do not have hangar space allocations due to the recent removal of hangars. Private hangar space has been unobtainable due to the lack of provision.
1.4 Structure of Master Plan 2021 p 16	- statistics, assumptions, forecasts and other quantitative data included in this Master Plan 2021 are based on estimates and are indicative only	Lack of relevant data, analysis and facts to convince the strategic vision of the pDMP.
	Supports over 67 aviation and 204 non-aviation businesses	Lack of detail on specific details of businesses. List of businesses for example.

Reference	*Summary*	*Concerns*
2.0 Economics & Employment - p 19	Moorabbin Airport has invested $500 million into the Airport site including $250 million in the last five years, and a further $300 million will be invested over the next eight years.	Lack of detail as to expenditure (on supporting aviation) other than routine maintenance in accordance with the lease provisions.
3.2.2 Existing initiatives p 36	- 40 solar panels currently operate on four buildings at the Airport, generating 350 kW and providing renewable electricity	Reader assumes these renewable solutions exist on operational areas of the Airport. More details required.
	- the new Circuit Booking System has reduced waiting times on ground running, meaning there are shorter waiting times (with an average reduction of 20 minutes in peak periods) and reduced fuel consumption, saving 36,000L of aviation fuel per year; and	Lack of detail and data around time and fuel savings as stated. Calculations used to project this?
	–redevelopment of the aviation precinct to improve access to the runway network has also reduced the fuel required for aircraft to taxi from hangars;	Lack of detail on what this specific redevelopment is. Lack of evidence regarding the fuel savings.
3.3.2 Current Community Contribution p 42	–supporting the food security charity FareShare by providing a 3,000 sqm kitchen garden at no cost at Moorabbin Airport. This land produces 20,000 tonnes of vegetables annually –	Lack of details in the pDMP to support this claim. Evidence required.
4.3 Community & Stakeholder consultation process - p 51	Moorabbin Airport established a consultation program with a wide range of community and other stakeholder representatives. The following key stakeholders were consulted with during this process: – Airport customers – including aviation users.	The sentiment is what consultation has taken place, has not been with the true representation of Moorabbin Airport users. It is difficult to find a tenant, operator, private aircraft owner, or aviator at Moorabbin who feels they have been consulted by the lessee. The largest FTO at Moorabbin remained disengaged from the process. Those who do acknowledge consultation appear to feel that is it has not been open, forthcoming, reliable, or adequate. MAC advised a stakeholder consultation session was set for a date that left very little time for those present to form a clear view about what was presented – namely a 328-page document, not easily read nor to comprehend and specific lack of details.

Reference	*Summary*	*Concerns*
5.3.3 National Airports Safeguarding Framework Guidelines Windshear	The National Airports Safeguarding Framework (NASF) Guidelines are a national land use planning framework (consisting of a series of principles and a number of attachments), which aim to: – improve community amenity by minimising aircraft noise-sensitive developments near airports; and – improve safety outcomes by ensuring aviation safety requirements are recognised in land use planning decisions, through guidelines being adopted by jurisdictions on various safety related issues.	The introduction of non-aviation infrastructure has already introduced wind turbulence. Further building of infrastructure could add to this safety risk. The safety risk and air navigation hazard that has been created by the lessee is acknowledged by the Airservices Australia, AIP, ERSA, Melbourne/Moorabbin. *ADDITIONAL INFORMATION:* *2. Possible wind shear and turbulence: a. West of RWY 04 THR when wind FM west south westerly direction at 22KT and ABV. b. On RWY 17R/35L and south of 35L THR when wind FM south westerly direction at 26KT and ABV. c. On RWY 13L/31R when cross wind exceeds 10KT FM easterly sector BTN BRG 310 - 130 MAG. d. North of RWY 13L/31R when wind FM west south westerly direction at 28KT and ABV* *The Civil Aviation Safety Authority's [CASA] Sector Safety Risk Profile for the Flight Training Organisations Sector, Risk Register:* Risk: Runway Excursion (operating environment conditions) *Current controls: This risk covers runway excursions due to operating environment conditions such as aerodrome infrastructure (including pavement, markings etc.) or weather/environmental conditions.* *Treatment Description: Appropriate selection of training environment.* *Limitations of development at/near aerodromes to reduce mechanical turbulence.* The risk assessment identifies the issue of building generated wind turbulence as a both a Current and Residual risk, rating 6b - medium level risk. This requires Flight Training Organisations to put in place risk management procedures to address this risk. The creation of this safety hazard appears contradictory referring to the pDMP statement (Overview p 10):

Reference	*Summary*	*Concerns*
		Moorabbin Airport is Victoria's leading metropolitan based flight training airport. Moorabbin Airports core role is to support safe general aviation flight training operations.
5.8.1 Aviation Planning Standards - p 7	At the Airport, the following aerodrome reference code groupings are those applicable to the expected operations: – single and twin piston engine flying training, typically with a wingspan of 12 metres or less (reference code 1A); and– twin turboprops for freight, RPT, charter and aeromedical operations, typically with a wingspan of 18 metres or less (reference code 2B).	Detail required as to why MAC limits future operations to 2B; including analysis of how this limit will not cause exclusion of potential or actual users in future.
5.8.3 Airport Roads p 78	Roads and access planning will follow State road planning standards which encompass the following core principles: –transport modes viewed as complementary rather than competitive: –transport plans are integrated with land planning strategies; and –roads contribute to an integrated transport system that strengthen the economy, liveability, social inclusion and environmental outcomes	No details are provided in this master plan in support the above assertions. The broad statements are insufficient evidence of both compliance and planning; detailed planning studies must be provided for open review and assessment by all party's involved with or affected by the pDMP.
6.2 Precinct Plan p 84	In summary, the Moorabbin Airport Precinct Plan provides land that supports the Airport and surrounding region by: - facilitating safe and efficient aviation functions;	Safety issue concerns – one example is with respect to potential more wind generated turbulence off buildings being introduced. There already exists a problem (as detailed in the ERSA). Further issues have arisen with the construction of a large earthen hill at the end of runway 31 – referred to in pDMP as 'Airport Infrastructure' on the Moorabbin Airport Precinct Plan.
	- retaining long-standing aviation and non-aviation businesses (and the associated employment base) at Moorabbin Airport for the benefit of the City of Kingston and south-east metropolitan Melbourne in all precincts. These businesses include: –aviation businesses that have been based at Moorabbin Airport for decades	Lack of evidence as how these claims about the support to present aviation business will be met. Several operators have been displaced from workable commercial sites into inappropriate or unsatisfactory commercial sites. Several private operators have also lost their hangarage for the same reason. Lack of evidence or details as to how these businesses and private operators will be provided for and their interests protected in the aviation space.

Reference	*Summary*	*Concerns*
	- constructing new and redeveloped spaces and facilities tailored to customer requirements - safeguarding land at the Airport for Airport infrastructure that supports aviation and non-aviation uses.	Lack of engagement and response regarding applications for construction of new facilities from aviation operators. Lack of detail and assurances in pDMP as to how aviation building requirements will be addressed, and future aviation infrastructure requirements will be met. This includes details on aviation buildings, hangars, co-located aviation buildings and hangers, associated aprons, parking areas, taxiways, practical access for both operations staff and visitors, co-located staff and visitor parking.
	The Master Plan 2021 includes a reduction in the total number of precincts in the Precinct Plan from seven to five. This adjustment of the Precinct Plan was adopted to: -provide customers and users with clarity about the intent of each precinct; and–deliver a Precinct Plan that reflects that the mature nature of the Airport site which will be fit for purpose for the duration of Master Plan 2021 and could be adopted for the subsequent Master Plan period	Lack of detail and clarity as to how this will support aviation. Requires specific details as to how aviation will be supported by removing 2 precincts.
6.3 Land Use & Development Controls	Land use plan	Lack of detail. The land use plan involves removal of sites including present parking and movement areas, up to and including Second Ave and beyond, but without details as to what will be provided in advance of this to allow continuance of present operations. If re-location is necessary, how this will be done whilst limiting disruption of business operations? Where the re-located sites will be in each case, and how growth will be provided for. No specific detail as to how the precinct objectives will be delivered. The precinct strategies do not describe how growth can occur within the planned removal of airside land. Figure 20 refers.

Reference	*Summary*	*Concerns*
		 Figure 20 removal of airside land.
6.4.2 Precinct 2 Policy and Development Controls	Precinct 2 is located to the west of Precinct 1 and dedicated for use by the aviation industry including employment and support facilities, hangars, aviation-related business, offices, pavement, and aircraft parking. The secondary purpose of Precinct 2 is to provide buildings and infrastructure to accommodate a range of aviation and non-aviation businesses.	Apparent contradiction. Primary purpose of Precinct 2 is dedicated use by aviation industry - secondary purpose to accommodate a range of aviation and non-aviation businesses.
7.2.3 – Safety initiatives	Industry collaboration is a continuing safety initiative. More than 150 safety meetings are convened annually and consider diverse topics	150 meetings equate to 3 meetings per week. Lack of evidence of this taking place, for example times and dates (meeting minutes).
7.3.3 Providing for growth p 124	In preparing this ADP, the future needs for aviation customers and airfield development have been identified and informed based on anticipated aviation activity at the Airport. These future aviation activities, including the opportunity to grow such activities, are further considered below. A plan showing planned aviation infrastructure works to support these activities is shown in Figure 7.5.	Lack of detail in the planning and assessment of future aviation activity and associated requirements. Figure 7.5 Aviation Development plan is useful, however, lacks specific detail as to how the complex requirements for both existing and future aviation operations will be met.

Reference	*Summary*	*Concerns*
7.3.4 Flight Training	- as total movements increase, FTOs seeking to expand or establish operations at the Airport will need to satisfy themselves that there is available airspace capacity suitable for the scale of their operations.	The pDMP specifically states its focus is on developing and nurturing existing flight training. The statement in the pDMP (7.3.4) about airspace capacity (buyer beware essentially) suitably casts doubt on being able to stay with a single focus on flight training.
	Whilst flight training has continued through the immediate impacts of COVID-19, Moorabbin Airport is cognisant of the potential long-term impacts on FTOs and the need to continue to support and attract FTOs to the Airport.	Lack of analysis of impacts, yet the need to attract more FTOs to the airport rather than diversify.
7.3.8 Regular Public Transport - p 130		Lack of detail around analysis and provisions of attracting and promoting RPT growth. No provision is made for attracting/nurturing operators other than the one existing RPT operator, KIA.
7.3.9 Aircraft parking, hangars and hardstand - p 130	- 100+ between runways 17L/35R and 13R/31L, noting rolling and preparation works are required. This area is planned to be an all-weather grass surface and would suit operators seeking long-term parking arrangements for infrequently used aircraft.	Lack of detail at to provision for access in the pDMP – either by aircraft, car or by foot. Lack of detail as to where additional paved parking areas will be. The area between 17L/35R and 13R/31L has no road access and not suited for FTO operations. This area has remained vacant for over 70 years due to lack accessibility and possible infringements of the obstacle limitation surface (OLS) for the nearby runways.
7.4.6 Runway planning & Utilisation	Runway codes – now 1 and 2, not 3. Long runway is a code 3 length	
7.4.13 Aviation Investment	New roads and footpaths have also been constructed during the last five years including the $3 million Duigan Drive.	Appears to support commercial developments and not aviation activity (yet listed under 'Aviation Investment in the pDMP).
9.3 Mode of Transport p 171	Existing journey to work behaviour indicates that travel to the Airport is dominated by private vehicles, with very low mode share for other forms of transport. This reflects the Airport's location, which is very well serviced by	Lack of planning detail or evidence to support opportunities for improved public transport including a train station.

Reference	Summary	Concerns
	the arterial road network and has opportunities to improve public transport (including a train station), walking and cycling accessibility.	
9.3.2 Future Mode Shares	Moorabbin Airport has commissioned a review of expected future transport mode shares on the basis of existing mode shares, and how encouraging a multi-modal transport approach could impact future transport mode shares.	Lack of details on who is performing this review and completion date.
9.4 Existing Road Network p 173	An assessment of available traffic signal data indicates that there has been a marginal increase in the traffic volumes on the road network adjacent to the Airport in the last five years. This stabilisation of traffic volumes has occurred despite significant developments being undertaken at the Airport, indicating that development has not resulted in adverse traffic impacts adjacent to the Airport.	Lack of evidence to support these claims regarding traffic volumes and management. pDMP fails to address the reasonably predicted resultant increases in traffic from the recent major commercial building construction on the airport as part of the 2015 master plan and the further increase which will may occur as a result of construction as set out in the 2021 master plan. The view of MACCI is, traffic volumes will increase considerably and without improvements to traffic management and control will result in dangerous conditions for vehicular traffic of all types and pedestrians, in Grange Road in particular, but not limited to that road.
9.7 Car Parking p 180	Moorabbin Airport provides 5,350 off-street car parking spaces. Car parks are distributed across the Airport (as illustrated in Figure 9.9) to ensure that centres for employment, retail, business and aviation activities provide sufficient car parking to meet user demand. The provision of adequate and conveniently located on-site car parking contributes to the economic objectives of the Airport and encourages visitation to the Airport site. Moorabbin Airport considers the suitability of car parking provision in relation to each new development at the Airport.	Lack of specific detail to support the claims in the pDMP with respect to parking places available. Of the total number of car parks claimed (Figure 9.9 - Existing off-street car parking), indicates of this total only 1065 car parking places exist within the Moorabbin airport aviation area. A large portion of this area has now been resumed for the construction of commercial buildings. Within this area much of the existing parking is now occupied by persons attending a large aviation training organisation. Aside from some car parking places that may be available in the DFO and Kingston Central Plaza sites, the rest of the parking sites are inaccessible to persons driving to the airport for airport operations reasons. 450 of these claimed sites are claimed to be in a ‘car yard’ that is in fact not only remote from

Reference	*Summary*	*Concerns*
		the airport operational areas but is also locked behind a high security fence. 10 parking sites appear to be in the BP service station on the somewhat remote south eastern corner of the airport land.
	Moorabbin Airport will ensure that appropriate on-site car parking is provided in the future to meet demand for parking as a result of new industrial, commercial and retail development at the Airport (see Chapter 8 - Non-Aviation Development Plan for details of proposed industrial, commercial and retail developments).	Lack of details to support these claims. A detailed study of parking requirements and their provision, including location and accessibility is required (present and future needs).
9.13.1 Effect of Proposed Development on Traffic Flows	A specialist traffic study commissioned by Moorabbin Airport for the purposes of this Master Plan 2021 found that the road network in the vicinity of the Airport is unsaturated and will remain so taking into account development contemplated in this Master Plan 2021.	Lack of evidence of this study. Specific details required.
13.5 Periodic Reviews	Moorabbin Airport also undertakes regular internal reviews of aviation and non-aviation development and infrastructure requirements and assessments against the vision outlined in this Master Plan 2021.	Lack of evidence to support claim. Specific details of the review required.

10. SUMMARY

There is a regulatory requirement for an Airport Master Plan to be strategic in nature. It should demonstrate how the airport should primarily serve as a public asset as set out in the *Airports Act 1996*. An Airport Master Plan should also maintain a strong focus on aviation development and limit non-aeronautical uses which would compromise the future growth of aviation activity as envisioned in the *Aviation White Paper 2009*.

For an Airport Master Plan to be comprehensive, it should consider the wider industry context, now and in the future, and how it intends to respond, rather than maintaining the status quo.

This submission has provided a broad market analysis, compared the Moorabbin pDMP with the Master Plans of other like airports and studied the progression from previous Moorabbin Master Plans.

Following a detailed and thorough analysis of the Moorabbin pDMP, the following conclusions have been drawn:

- Overall, the pDMP is incoherent and inconsistent with sound planning from an aviation development perspective.
- The pDMP lacks detail and evidence in relation to fundamental assumptions and conclusions, including practical capacity and future aircraft movements.
- The pDMP ANEF models aircraft with a maximum take-off weight greater than 5700 kg (up to approximately 9000 kg) but these aircraft may only operate if they have prior permission.
- The pDMP does not adequately respond to current circumstances (especially the status of flight training) and does not satisfactorily consider future trends and opportunities.
- The pDMP has a single focus on flight training as the primary aviation use. This is in the face of COVID-19 impacts (which will persist for some time) and establishes an invalid foundation upon which to base the Aviation Development Plan.
- This singular focus on flight training operations, potentially at the expense of other aviation development opportunities, is questionable in the context of current and near- term prospects of the flight training industry.
- The pDMP specifically notes that FTOs seeking to expand or establish operations at the airport will need to satisfy themselves that there is available airspace capacity suitable for the scale of their operations. This condition on future increases in aviation activity contradicts the stated objective of delivering an increase in total movements from 268,000 in 2020 to 375,000 in 2010, and increase student numbers from 1250 in 2020 to 1800 in 2040.
- The pDMP does not adequately safeguard or future proof aeronautical infrastructure. There is an intention to downgrade capability rather than enhance it through reducing runway code numbers, and non-aviation development in close proximity to some runways has almost certainly introduced a windshear hazard.
- The pDMP makes no provision for fixed wing aircraft in the emergency services fleet (B350, PC24) which are commonly operated in other states and territories.
- The pDMP specifically lacks exact details on stakeholder engagement including up to date feedback (if any).

11. RECOMMENDATIONS

The following questions should be asked of Moorabbin Airport Corporation, and the answers should be embodied in an updated Draft 2020 Airport Master Plan for Moorabbin Airport:

- Comprehensively justify flight training as single focus for Moorabbin Airport (in light of COVID and other considerations).
- Define how the fundamental assumptions such as practical capacity and future aircraft movements have been derived.
- Explain why FTOs seeking to expand or establish operations at the airport will need to satisfy themselves there is available airspace capacity suitable for the scale of their operations, when the stated objective is delivering an increase in total movements from 268,000 in 2020 to 375,000 in 2010 and increase student numbers from 1250 in 2020 to 1800 in 2040.
- Clarify why future aircraft operations are limited to code 2B; including analysis of how this limit will not exclude potential or actual users in future.
- Explain why the ANEF models aircraft with a maximum take-off weight greater than 5700 kg (up to approximately 9000 kg) while the airport restricts movements to aircraft below 5700 kg.
- Detail why the pDMP does not consider future trends and opportunities in aviation. The pDMP is inconsistent with current experience and short-term future expectations of FTOs in Australia and this needs to be justified.
- Demonstrate how it is intended to adequately safeguard or future proof aeronautical infrastructure. Explain why there is an intention to downgrade capability rather than enhance it through reducing runway code numbers. (Is MAC aware once runways are downgraded then it would be extremely difficult to resurrect a previous code as it would have to comply with MOS 139 new standards (rather than grandfather existing infrastructure)?).
- Provide windshear analysis for all developments on the airport since 2015 in accordance with NASF Guideline B and explain why it has introduced windshear phenomena with the introduction of non-aeronautical infrastructure if MAC is committed to ensuring aviation safety and compliance with NASF guidelines.
- Explain why the pDMP makes no provision for fixed wing aircraft in the emergency services fleet (B350, PC24) which are commonly operated in other states and territories.
- Disclose details of all stakeholder engagement by providing meeting minutes and dates/times to date.
- Provide a detailed study of parking requirements and their provision, including location and accessibility required (present and future needs) both aircraft and car parking.
- Demonstrate how the removal of 2 precincts will support aviation.
- Provide supporting evidence for aviation expenditure to date (audited financials for example).

AVIATION PROJECTS

Aviation. From the ground up.

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