Foreword

We have been asked as a Steering Committee to oversee the development of an effective strategy for meeting the aviation capacity needs for the Sydney region into the future.

Previous studies have examined options for a second Sydney airport and identified potential sites. The terms of reference endorsed by the Australian and New South Wales governments for this Joint Study make it clear that this is not just another site selection exercise. What is called for is a broad examination of the future demand for aviation in the Sydney region, how that relates to the growth of the population and economic activity in the region and how an integrated aviation, surface transport and land development strategy can be developed and implemented over time.

The Steering Committee has started with a clean sheet. The key questions have included whether the expected demand can be met from the existing airport sites, and in particular Sydney (Kingsford-Smith) Airport, if best use is made of those sites. Can Bankstown Airport and RAAF Base Richmond take on roles beyond their current use for general aviation and the RAAF? Is there a case for supplementary airport capacity through upgrading existing sites or opening a new site, and if so when does that become necessary?

These are difficult questions. There is no straightforward measure of the practical capacity of an airport. Demand varies dramatically across peak and non-peak periods. Operational capacity is affected not only by the physical attributes of the infrastructure, but also by factors such as weather conditions, environmental constraints, airspace configuration and the operational choices of the operators. These factors change through time. Capacity pressures build incrementally and their effects are not always obvious, but include delays and lost opportunities for new services.

Airports are not usually presented as positive neighbours. Upgrading operations at an airport or establishing a new airport would raise a range of concerns within the local communities, most obviously around the impacts of aircraft noise. However, airports are also important generators of economic activity and employment for communities. Airports generate jobs. International experience is that airports create 1,000 jobs for every million passengers, with most employment benefits being within the local area of the airport. Airports expand the industry base of local economies, bring new supporting infrastructure and impact positively on local land and property values.

More than ever before, good access to aviation is essential for social and economic development. More and more people are choosing air travel for holidays or for catching up with family and friends. More and more businesses are heavily reliant on aviation for their links with markets, suppliers and other contacts. This is nowhere more important than in Sydney, given its place as Australia's prime international centre for business and finance, our major tourist destination and international gateway and a focus for the professional services sector. This contributes to Sydney (Kingsford-Smith) Airport being one of the key pieces of economic infrastructure in the country.

In this Joint Study, the Steering Committee has been guided by a number of key principles:

- productivity, economic growth and job creation are key objectives;
- safety must not be compromised;
- protection of communities from undue impacts of aviation operations is an important consideration;
- planning for aviation development needs to be integrated with broader planning, including:
  - planning for population growth, including the location of major growth centres, and
  - planning for the operation and development of the broader transport network;
- solutions need to be practical and realistic to implement, with costs and benefits weighed carefully; and
- different approaches will be required over the short, medium and long terms to address the progressive development of demand;

This Report presents a recommended package of actions. There is no single solution and no easy answer.

The need to act is clear. The costs of not acting are substantial.

There is a need to take action without delay to identify and secure a site for a supplementary airport as part of the long term solution. The range of potential airport sites within reach of Sydney has diminished as urban development has spread. If action is not taken quickly, the chance to secure the future of aviation for the Sydney region may be lost altogether.

The Steering Committee considers that adoption of a long-term strategic aviation plan for increasing the capacity of the Sydney region's airports is now critical for Sydney, New South Wales and Australia.

Key Findings and Directions

- Aviation services are critical in a modern economy. Access to efficient air services for passenger travel and time-sensitive freight is essential to ensuring Sydney's place as an international commercial and financial centre and Australia's foremost tourist destination.
- The Sydney region's demand for aviation services will continue to grow as Sydney's population and business activity grow.
  - The population of the Sydney Metropolitan Area will alone reach 6.2 million by 2036, with another two million in the surrounding region.
  - Demand for Regular Public Transport (RPT) services in the region will double to approximately 88 million passenger trips per year by 2035, then double again by 2060.
- Sydney (Kingsford-Smith) Airport will continue to be the most important airport for the Sydney region and for Australia, both for passengers and freight.
- By 2035 the airport would need to be able to cope with more than 76 million passenger movements and 460,000 aircraft movements. Immediate action is needed to increase the airport's capacity to meet growing demand.
- Airside infrastructure, even with the investments proposed in the *Sydney Airport Master Plan 2009* and the recently announced concept for terminal re-development, will be unable to meet the projected aircraft movements for the medium and longer term, notwithstanding the use of larger aircraft and increased load factors.
  - The airport has limits to its ability to handle passenger growth not only because of the legislated cap on runway movements per hour but also because of the physical constraints on runway length, constraints on taxiway, gate and apron development and the commercial mix of services operating to the airport. The physical constraints at Sydney (Kingsford Smith) Airport and airline operational issues limit the scope for continued upgauging of aircraft.
- Under current constraints, Sydney (Kingsford-Smith) Airport will become unable to meet demand for new services.
  - By 2020, all slots on weekday mornings between 6.00am and 12noon and between 4.00pm and 7.00pm will be fully allocated, so growth of passenger capacity at these times will be dependent on aircraft upgauging.
  - By around 2027, all slots will be allocated, so no new entrants can be accommodated, unless another service is cancelled.
  - By around 2035, there will be practically no scope for further growth of RPT services at the airport.
- The growth in demand and increasing capacity pressures will result in:
  - increasing delays and costs for all operations as the airport cannot sustain a peak hour handling rate of 80 movements per hour for more than a limited number of consecutive hours owing to taxiway and apron congestion. Delays will be especially felt when the airport experiences reductions in capacity owing to weather events as the capacity of the airport to recover is limited if all slots are fully allocated;
  - reduced capacity to cater for new services at commercially viable times for airlines;

- reduced capacity to 'noise share' and provide respite for those communities affected by parallel runway operations. By around 2020, the noise sharing modes will only normally be available in early mornings and late evenings; and
- increased congestion on the surrounding roads and surface transport system.

- Investment in airfield infrastructure is required now to minimise delays and loss of potential services as operations continue to grow and the airport approaches its peak period capacity. Early additional investment in the airport's road and rail connections is also essential.
  - At the current capacity of eight trains per peak hour from the airport to the Central Business District (CBD), by 2013, services past the airport in the morning peak will be full before they reach the airport stations.
  - From 2015, the capacity of existing road junctions at the entrance to the domestic terminal precinct will be exceeded, resulting in a near constant traffic jam on key roads to the CBD and the M5 motorway.
- Sydney (Kingsford- Smith) Airport's Master Plan includes a staged upgrading of terminals and an increase in the number of gates. In December 2011, SACL announced a new concept for the use of the terminals. These proposals may offer improvements to efficiency, but do not provide long term solutions for capacity.
- The Steering Committee has considered changes to the regulatory arrangements for operations at Sydney (Kingsford-Smith) Airport to increase the capacity.
  - Advice from Airservices Australia is that the physical capacity of the runway system and airspace could support a limited increase in the movement cap from 80 to 85 movements per hour provided adequate gate and taxiway capacity is available. This could allow the airport to cope with growth for an extra few years but is not a long term solution.
  - The Committee does not support any change to the curfew.
  - The Committee is conscious of the importance of access to Sydney for regional communities and does not support the forced movement of existing regional operations to another airport.
  - There is no scope to extend the site of Sydney (Kingsford-Smith) Airport to increase the capacity of the runway system to address the underlying constraint on long term capacity.
- Not acting to implement a long-term strategy will have adverse economic costs for Sydney, New South Wales and Australia. Sydney's airports are a national infrastructure investment and productivity issue, which Australia must address.
- The other existing airports in the region should each take important roles but not as a second major airport for Sydney.
  - Newcastle Airport at RAAF Base Williamtown is too far from the Sydney market to serve as Sydney's second passenger airport. It is an important airport for the Hunter and Central Coast regions but its capacity to grow in the future needs to be settled, having principal regard to RAAF's requirements for the site as its primary fighter base.
  - Canberra Airport is also too far from the Sydney market to serve as Sydney's second major RPT airport but will grow to serve the southern NSW region and is the only airport capable of accommodating substantial overnight air freight operations for the region. It is important to protect Canberra Airport's expansion plans and curfew-free status.

- Bankstown Airport has an important role as Sydney's main general aviation airport but could be made available for a level of RPT operations by turboprop aircraft to provide an extra option for growth in that sector.
- RAAF Base Richmond could be opened to a level of civil traffic using the existing runway on a shared basis with RAAF. This would provide better access to aviation services for the northwest and additional employment opportunities, as well as underpinning RAAF's continued presence in the area.
- These airports are not expected to divert any significant level of future demand from Sydney (Kingsford-Smith) Airport, but rather will improve access to aviation services and generate related employment for a number of communities.

- From around 2030, an additional airport will be needed to supplement the capacity of Sydney (Kingsford-Smith) Airport.
  - To provide for this requirement, governments will need within the next five years to have determined the location and commenced investment into another airport site capable of handling large RPT aircraft.
  - Activity at the new airport might be expected to grow over time as an airport for Western Sydney, accommodating growth for the broader Sydney region that could not readily be provided at Sydney (Kingsford-Smith) Airport. This is likely to include some limited international services in particular by new entrant carriers such as the growing group of low cost international carriers.
- The Badgerys Creek site, which was acquired by the Commonwealth between 1986 and 1991 for a future airport, remains the best site for an additional major RPT airport.
  - It is located close to growing markets in the western regions of Sydney and close to road and rail transport links. In turn, it would provide the vitally important employment and economic opportunities for the growing western Sydney community and will be a significant catalyst to expedite the much needed supply of housing.
  - The site has been protected from encroaching development and given that the Commonwealth owns the land it would be less costly and disruptive to the community as a development site than other options.
  - The Steering Committee is conscious of commitments and statements indicating that governments no longer see the site as suitable for airport development. The decision is one for governments, but a decision is required now to confirm whether or not an airport will be built at Badgerys Creek.
- If Badgerys Creek is not ruled out, work should begin immediately to update the Environmental Impact Statement, and to plan towards the development of the first stage of the airport (single runway).
- If Badgerys Creek is ruled out, Wilton is the next best site and processes should be put in train to secure the site and undertake the full environmental assessment and airport planning processes required to protect and prepare the site for future development.
- Wilton is further than Badgerys Creek from Sydney and the current growth centres. While Sydney's growth is expected to spread to the southwest in the long term, the business case is likely to be harder to establish for an operational airport at Wilton by 2030.
  - In the interim, action should also be put in place to open RAAF Base Richmond to a level of RPT operations, noting that this will help ensure ongoing RAAF use of the Base.

- The communities around Richmond and Windsor are likely to be concerned at the potential impacts of even a relatively low level of jet RPT operations at RAAF Base Richmond and the Steering Committee notes that early and ongoing consultation, including under relevant environmental legislation would be required to identify potential environmental impacts.

- There is a need to act quickly to finalise a decision on a site for a supplementary airport and secure it, even if an airport may not need to operate at the site in the short term.
  - Further delay will rule out the remaining potential sites.
- The economic costs are substantial if Sydney's future aviation demand cannot be met.
  - By 2060, the economy-wide impacts, in 2010 dollars, across the Australian economy could total $59.5 billion in foregone expenditure and $34 billion in foregone gross domestic product.
  - The NSW economy would be especially heavily affected, with losses across all industries totalling $30.6 billion in foregone expenditure and $17.5 billion in foregone gross state product (GSP).
  - The number of total jobs that will not be created is estimated to grow over time as unmet demand increases. This is averaged to be 12,700 in NSW and 17,300 nationally over the period from 2011. In 2060 alone, the annual estimate of foregone jobs is approximately 57,000 in NSW and 77,900 nationally.
- The current consideration of a future east coast High Speed Rail (HSR) system linking Sydney to other major cities does not remove the need to provide additional aviation capacity. HSR and expanding aviation services are not mutually exclusive and HSR will not address many of the key drivers for aviation growth at Sydney (Kingsford-Smith) Airport. The extent to which HSR would reduce the demand for air travel to Sydney will depend on the relative effectiveness (in terms of price, frequency and travel times) of the HSR services offered and the timing of its construction.
  - The cost to governments of the construction and operation of the HSR system would be high relative to the cost of providing additional capacity expansion of the aviation system. HSR will not provide the services to fully address the growth of international and domestic peak business traffic and the limits on aviation capacity. Meanwhile, the associated economic costs to NSW and Australia of limited aviation capacity are rising quickly.
- The Steering Committee well understands why solving the issues raised in this review have been contentious. However, the option of doing nothing is no longer available and the costs of deferring action are unacceptable.
- The spread of urban development in the Sydney basin means it is already very difficult to find a suitable site for a second RPT airport. The Joint Study has found that there is no optimal site that satisfies everyone. However, the options have now become very limited.
- The opportunity to secure a suitable site is likely to disappear altogether if action is not put in train now.
- The Steering Committee is of the very strong view that to address the capacity issues of the Sydney region an integrated aviation and land use planning strategy is required that includes three core elements.
- Optimise the use of Sydney (Kingsford-Smith) Airport as the primary airport for Sydney and NSW for RPT international, domestic and regional passengers, by ensuring that

it operates efficiently and safely, and can grow to its maximum practical operational capacity. Key actions include:

- lift the statutory movement cap from 80 to the 85 movements per hour in peak hours each weekday to enable greater rates of handling of peak hour traffic and take action to ensure the optimum use of larger aircraft;
- increase the take-up of public transport to the airport precinct, by making fares for services to and from the airport stations comparable to normal CityRail fares;
- commence work on the detailed planning required for a program of surface transport works to improve the connections to the airport and the surrounding precinct, including key connections such as the M4 and M5 motorways, a commitment to investment in suitable rolling stock and train paths, and expansion of the Sydney bus network to the airport; and
- immediately initiate a new Master Plan process, including a firm program for upgrade works to provide for the expected shortfall of gates, manage the runway balance utilisation requirements and limit any increase in taxiway congestion in the short term.

- Protect and optimise the use of other existing airports in the Sydney region. Key actions include:
  - develop a joint strategy for accommodating growth in aviation demand for the Hunter and Central Coast regions;
  - ensure that Canberra Airport is protected from encroaching noise-sensitive urban development incompatible with expansion of the airport over time into a significant domestic and international aviation centre for both passenger and freight services for south-eastern Australia;
  - use the Master Plan process to resolve a strategy to allow Bankstown Airport to accommodate RPT operations by smaller turbo-prop RPT aircraft, including in particular regional services, as slots for additional services become unavailable at Sydney (Kingsford Smith) Airport; and
  - initiate action to progressively open RAAF Base Richmond to a level of civil traffic using the existing east-west runway alignment.
- These actions will assist in meeting some future demand, however to meet long term demand, there is a need to act now to select a site for a new supplementary airport, capable of accommodating another full service airport for the Sydney region in the long term, and commence planning for its operation while monitoring aviation growth to ensure operations commence at the appropriate time.

Overview

This Joint Study examines the aviation needs of the Sydney region and how they can be met over the short, medium and long term. It was commissioned jointly by the Australian and New South Wales governments, with broad terms of reference aimed at achieving an effective aviation strategy for the future, integrated with the broader planning for land use, development and transport in the Sydney region.

A key element of the Study has been to identify how to get the most out of Sydney (Kingsford-Smith) and other existing airports. This has been much more than just another site selection study for a second Sydney airport.

Aviation services are critical in a modern economy. They are particularly important in the case of Australia's economy which has a strong focus on export markets and global tourism and services sectors. Access to efficient air services for passenger travel and time-sensitive freight adds to the value of businesses and also to quality of life for Sydney residents. A failure to address the need for aviation infrastructure into the future would put at risk Sydney's place as an international commercial and financial centre and Australia's foremost tourist destination.

The demand for aviation services for Sydney will continue to grow as Sydney's population and business activity grow. Any shortfall in capacity to meet the demand as it increases will affect future economic growth, productivity and employment. It will also affect amenity and social outcomes, as record numbers of Australians choose to travel by air for leisure, family or social reasons.

Sydney now and in the future

The Sydney region is home to approximately six million people, with more than 4.2 million in the Sydney Metropolitan Area. Australian Bureau of Statistics forecasts indicate the population of the Sydney Metropolitan Area is expected to reach 6.2 million by 2036, with a compound annual growth rate of about 1.2 per cent per year. By 2056, the population is estimated to reach between seven and 7.5 million.

The NSW Metropolitan Plan 2036 projects the greatest population growth will occur in Sydney's South West, North West and West Central subregions, with proportional growth also expected in the Central Coast subregion as shown in Table 1.

Table 1 Population projections for Sydney subregions (population in thousands)

Sydney	2010	2036	Growth to 2036
City of Sydney	182.2	264.8	82.6
East	299.0	334.0	35.0
Inner North	318.3	378.9	60.6
Inner West	247.8	307.0	59.1
North	278.2	321.2	43.0
North East	247.6	277.0	29.4
North West	815.7	1155.6	339.9
South	688.9	747.6	58.7
South West	439.6	874.8	435.3
West Central	738.5	896.6	158.1
Central Coast	319.7	424.7	104.9
Total	4,577.5	5,982.1	1404.5

Source: NSW Metropolitan Plan for Sydney 2036

Beyond 2036, the only direction in which Sydney's growth can realistically spread is to the southwest.

The planning for this population growth will need to be aligned with plans for employment generation, infrastructure provision and access to services, including aviation services. Figure 1 highlights the key growth centres for Sydney.

Planning for the surface transport network is a key element. Sydney (Kingsford-Smith) Airport is located close to Port Botany within the Global Economic Corridor, a key precinct for business growth in Sydney. The NSW Metropolitan Plan for Sydney also set challenging targets for residential infill developments for areas close to the airport. Business and residential growth

in surrounding areas, combined with continued growth of aviation activity at the airport, will add to existing pressures on the roads and public transport systems. Unless there is effective investment, this will lead to overloading and congestion in the transport network.

Figure 1 **Map of Sydney's key growth centres**

Source: NSW Metropolitan Plan for Sydney 2036

Demand for aviation in the Sydney region

On conservative forecasts of less than three per cent growth per year, demand for aviation Regular Public Transport (RPT) services in the Sydney region will double to nearly 88 million passenger movements by 2035, growing to 165 million passenger movements by 2060. Table 2 shows the unconstrained forecast demand for passenger and aircraft movements in the Sydney region and at Sydney (Kingsford-Smith) Airport.

Table 2 **Unconstrained forecast demand, 2010 to 2060**

Type	Current (2010)	Forecast for 2020	Forecast for 2035	Forecast for 2060
Sydney region passenger movements	40.1 million	57.6 million	87.4 million	164.6 million
Sydney (Kingsford-Smith) Airport passenger movements	35.7 million	50.6 million	76.8 million	145.7 million
Sydney region RPT movements	344,500	421,200	528,600	800,800
Sydney (Kingsford-Smith) Airport RPT movements	286,600	343,300	428,900	652,700
Sydney region total aircraft movements	0.8 million	0.9 million	1.2 million	1.5 million
Sydney (Kingsford-Smith) Airport total aircraft movements	311,400	369,000	459,600	699,500

Source: Booz & Company analysis

In the absence of other RPT airports close to Sydney, this growth will focus on Sydney (Kingsford Smith) Airport. In 2035, the airport would need to be able to cope not only with close to

80 million passenger movements per year (double the current number) but with nearly 430,000 annual RPT aircraft movements (an increase of nearly 50 per cent).

The challenges of coping with growth

Sydney (Kingsford-Smith) Airport will continue to be the major focus for international and domestic airlines operating to Sydney, both for passenger and freight services. It is well connected to both the major road and urban rail networks. Its location has been central to its success. A key consideration for the Steering Committee has been how to make the most of Sydney (Kingsford-Smith) Airport and the extent to which its capacity can be expanded to cater for this demand.

Sydney (Kingsford-Smith) Airport has identified its proposals for operation and development of the site. The *Sydney Airport Master Plan 2009* (the Master Plan) sets out a series of proposed enhancements to terminals, gates and taxiways to help meet demand to 2029.

In December 2011, Sydney Airport Corporation Limited (SACL) announced a new concept for improving the efficiency of operations and improving the passenger experience. The new concept involves reconfiguring the use of the two terminal precincts so that the Qantas Group and its partners would operate from what is currently the domestic terminal precinct and the Virgin Australia Group and its partners would operate from the current international terminal precinct.

The proposal is in the early stages of development. If the new concept is found to be viable and brought to fruition, one of the benefits will be to make more space available than anticipated under the Master Plan in the terminal precincts for future development of additional gates and apron.

The Steering Committee supports SACL's goal to improve the passenger experience, the efficiency of gate utilisation and the efficient operation of the international and domestic terminals by improved aircraft utilisation. The SACL proposal seeks to address some key issues identified by the Steering Committee, namely the availability of gates and apron for new larger aircraft and enhancing safe and efficient ground movements by aircraft on the taxiway system.

The Steering Committee notes the complexity of the changes proposed under the new concept and the challenges in developing the details of the proposal and negotiating agreement with all the major stakeholders. While welcoming the objectives of the new concept, the Steering Committee notes it is important that the investment urgently required in enhancements to gates, aprons and taxiways is not delayed while the planning and negotiation processes proceed. The Steering Committee also notes that while the changes as proposed under the new concept may improve the utilisation of the airport's current capacity, they do not add significantly to that capacity. In particular, they do not remove the underlying limitations of the runway system and the small airport site. SACL has yet to demonstrate the ability of the new concept to ensure the airfield delivers a consistently efficient hourly throughput or to help address the growing landside transport systems constraints.

There is no straightforward measure to determine the practical capacity of an airport. Operational capacity is affected by the physical attributes of the site and its infrastructure, but also by factors such as weather conditions, environmental constraints, airspace configuration and the operational choices of operators. The capacity for an airport to cope in peak periods will be a key factor, as demand will always vary across peak and off-peak periods. As an airport approaches capacity, indications of capacity pressures appear progressively in the form of congestion and delays, disruption to schedules and loss of potential opportunities for new services.

At Sydney (Kingsford-Smith) Airport, the limitations of the existing infrastructure will start to have a significant effect on airport operations from around 2015.

Assessment conducted, comparing the infrastructure availability in SACL's Master Plan with the aviation activity forecast in this Joint Study, indicated that by 2015, unless work is brought forward on additional gates and apron, there could be a shortfall of 25 aircraft stands to meet projected demand. This shortfall would have greatest impact on international arrivals during the morning peak period. This shortfall would to some extent be addressed by the implementation of the SACL planned Master Plan works and the announced terminal redevelopments.

By 2020, there would be an estimated shortfall of 19 stands, assuming the development program proposed in the Master Plan has been implemented.

Taxiway capacity also becomes an issue where there is congestion arising from a shortage of gates or parking stands or when queues develop as a result of the imbalance between uses of the two parallel runways.

While the initial pressures on gates and taxiways can be addressed to some extent in the short term through investment and operational improvements at the site, in the long term, the underlying limitations of the site mean that Sydney (Kingsford-Smith) Airport will not be able to cope with the forecast growth. In particular, the clear limits to the runway system, arising from the length and spacing of the runways and the international requirements for aircraft separation cannot be overcome.

By around 2035, the capacity pressures identified in terms of aprons, gates and taxiways will lead to major impacts and costs.

Physical constraints of the airport site

The capacity for Sydney (Kingsford-Smith) Airport to continue to grow to meet demand is affected by a number of factors.

The site measures some 907 hectares, small by comparison to other major airports in Australia and overseas. The site has operated as Sydney's main airport since 1920 and, has been developed and expanded over time, including by extending runways to the south into Botany Bay. Any further extension of the site is limited by urban development and by Botany Bay to the south, the Cooks River to the west and Port Botany to the south-east.

The particular configuration of the runways, taxiways, terminals and aprons arises from the staged development of the site over time and the constraints of the site. It does not reflect the optimal layout for terminals and runways at a major airport.

There are currently three runways: the main runway 16R/34L at 3,962 metres long, the parallel north-south runway 16L/34R at 2,438 metres and the single east-west cross runway 25/07 at 2,530 metres.

If weather prevents the use of the dual parallel runway system, the capacity is limited to a maximum of around 55 movements per hour – well below the current demand during substantial periods of the day. The length of the cross runway means that it is not suitable for use by all large aircraft operations.

There is a variety of limitations on runway 16L/34R due to its shorter length. For example, the taxiway fillet design does not cater for long wheel base aircraft such as the B777-300. Standard operating procedures also generally preclude aircraft greater than B767 from using

that runway. This creates an imbalance between the two parallel runways and reduces the capacity to operate the parallel runway system efficiently.

In the long term, the runway imbalance will limit the scope for continued increases in the use of very large aircraft as a key element in the strategy to handle growing traffic within the constraints of the site.

The constraints of the small airport site also rule out any significant realignment of runways or rationalisation of the taxiway and apron systems.

At current demand levels, the existing stands and apron areas are already heavily utilised at each terminal during peak times. Growth in aircraft movements, particularly in peak times, will require additional gate capacity in the near to medium-term.

There is already a requirement to tow aircraft off to remote stands, particularly from the international terminal, to free up gate availability. This has flow-on effects to the runways and taxiways.

The capacity of the runway system is limited both by physical constraints and a legislative cap set on the maximum movement rate. Commonwealth legislation sets a cap on the rate of aircraft movements on the runways at 80 movements per hour. The legislation was introduced in conjunction with the commissioning of the parallel runway and is aimed at providing a level of protection to communities affected by increased operations at the airport, in particular from the impacts of aircraft noise. In line with the movement cap, slot allocations to operators are managed so that no more than 80 movements are scheduled in any hour.

The capacity of the runway system is also affected by the requirement to maintain the safety of operations. International standards apply to the separation of aircraft in the airspace around the airport and on the airfield itself.

Analysis by Airservices Australia indicates that in good weather conditions, the parallel runway system could physically cope with between 85 and 87 runway movements per hour, provided that taxiway and gate capacity is available. Airservices Australia advises that the airport's sustainable capacity for scheduling of services would not exceed 85 movements per hour.

In peak times, the movement rate is already at or close to the legislated cap of 80 runway movements per hour, noting that on many occasions this rate cannot be achieved in practice due to weather conditions.

The practical effects if Sydney's aviation demand cannot be met

Even on conservative forecasts, demand is expected to more than double to 76.8 million passenger movements in less than 25 years (by 2035).

Notwithstanding the expectations for higher load factors and continued upgauging to larger aircraft, demand for aircraft movements will also continue to grow. The effects of pressure on Sydney (Kingsford-Smith) Airport's capacity will progressively grow as movement numbers continue to increase. These include increased costs and delays, lack of access for new services at preferred times of operation, reduction in noise sharing and periods of respite for affected residents around the airport and increased traffic congestion.

As Sydney (Kingsford-Smith) Airport becomes increasingly unable to cater effectively for the growth, it will result in:

- **Increased delays for all operations**

Currently delays on the taxiways and aprons are estimated to be approximately six minutes for each arrival and twelve minutes for each departure during peak period movements.

Capacity pressures at the airport will contribute to increases in these delays. These will be exacerbated when the airport experiences reduction in capacity due to factors such as non visual conditions resulting from rain, storms, low cloud or fog, or when winds require use of the cross runway.

The capacity of the airport to be able to recover from periods of reduced capacity will also be more limited. Delays occurring in the morning peak will flow on to affect later services and will not be able to be recovered for much of the day, with flow on consequences across the national network.

- **Reduced capacity to grow new services**

There will also be reduced capacity to cater for new services.

By 2020, all slots on weekday mornings between 6.00am and 12.00noon and afternoons between 4.00pm and 7.00pm will be fully allocated and there will be no slots available for any new services. By around 2027, no slots will be available for new services across the full day at Sydney (Kingsford-Smith) Airport.

In practice, the capacity pressures will lead to loss of opportunities for new services well before the available slots run out. Airlines will have limited scope to shift proposed new services to a different schedule if their preferred slots are not available. They will be restricted by a range of factors relating to aircraft utilisation, operating restrictions such as slots or curfews at other airports and the commercial demands of their customers.

Airlines proposing new services require suitable slots for both arrival and departure and also normally require a series of slots for services at the same time on several days of the week if not the whole week. It is already difficult to find such a series of slots in the morning peak and it will become increasingly difficult at other times of day.

Sydney will increasingly be unable to benefit from the growth in new services that the growth in demand would otherwise support. This includes benefits from growth in the key international markets such as China and the next generation of low cost carriers and new entrant products.

- **Reduced capacity to 'noise share' by providing relief from parallel runway operations**

The growth in operations at Sydney (Kingsford-Smith) Airport will also lead to loss of the capacity to share noise and provide respite in accordance with the Long Term Operating Plan (LTOP).

By 2015, nine hours of the weekday will have demand levels exceeding 55 movements per hour, the approximate point beyond which the LTOP noise sharing modes can no longer be operated and parallel runway operations are required.

By 2020, demand in all the hours between 7.00am to 1.00pm and 3.00pm to 8.00pm will be above 55 aircraft movements per hour. For the communities most affected by aircraft noise, noise sharing modes which provide respite will only be possible in the evenings after 8.00pm and for a small number of weekend hours.

- **The surface transport systems in the airport precinct will not cope**

Continued growth of operations at the airport will also lead to overloading of the ground transport linkages to the airport.

Current roads and intersections at the entrance to the airport Domestic Terminal precinct are expected to reach a critical point as early as 2015. Unless substantial investment is made in upgrading the ground transport network, by 2023 road traffic to and from the airport will experience substantial delays and a near constant traffic jam on key roads around the airport, the links to the CBD and the M5 Motorway.

At the current level of operations, train services to the city travelling via the airport will reach capacity by 2013 in the morning peak period. Even with the increase to 12 trains per hour proposed, the morning peak period will be at capacity by 2018 for CBD-bound trains.

The cost of doing nothing is substantial

A shortfall in airport capacity, if unaddressed, would inevitably lead to substantial economic costs and loss of productivity, particularly in the NSW economy but also in the broader Australian economy.

On conservative estimates, by 2060 demand for RPT services would exceed capacity by 54 million passenger movements per year. The cumulative total of unmet demand would be approximately 665 million passenger movements between 2035 and 2060.

As weekday peak slots become full, impacts will emerge including:

- passengers experiencing higher airfares and more difficulty finding available seats;
- redistribution and suppression of services (including nearly 14,000 passenger trips in 2016); and
- direct expenditure in NSW being $200 million per year lower by 2015, $500 million per year lower in around a decade's time, and the amount foregone continuing to increase.

By 2060 the economy-wide (direct and flow-on) impacts across all sectors of the Australian economy could total $59.5 billion in foregone expenditure and $34.0 billion in foregone gross domestic product (GDP) (discounted to 2010 dollars).

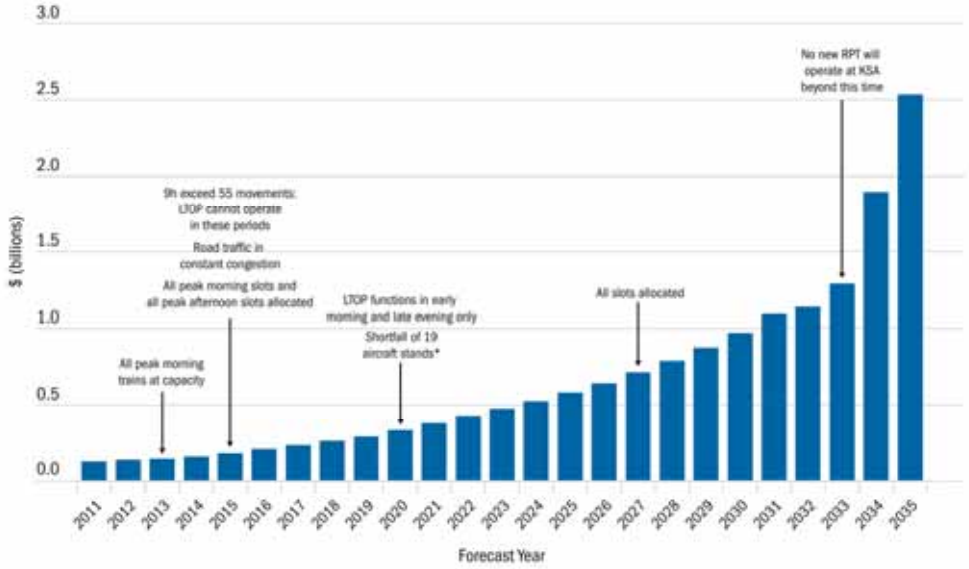
The NSW economy would be especially heavily affected, with losses across all industries totalling $30.6 billion in foregone expenditure and $17.5 billion in foregone gross state product (GSP) (discounted to 2010 dollars).

The number of total jobs that will not be created is estimated to grow over time as unmet demand increases. This is averaged to be 12,700 in NSW and 17,300 nationally over the period from 2011. In 2060 alone, the annual estimate of foregone jobs is approximately 57,000 in NSW and 77,900 nationally.

- **Direct economic impacts on aviation and related industries**

As shown in Figure 2 and Figure 3, the forecast economic costs due to capacity constraints would be significant and steadily growing in the medium term, but would then grow at an accelerated rate from around 2035 once the scope for further growth of new services at Sydney (Kingsford-Smith) Airport is effectively exhausted.

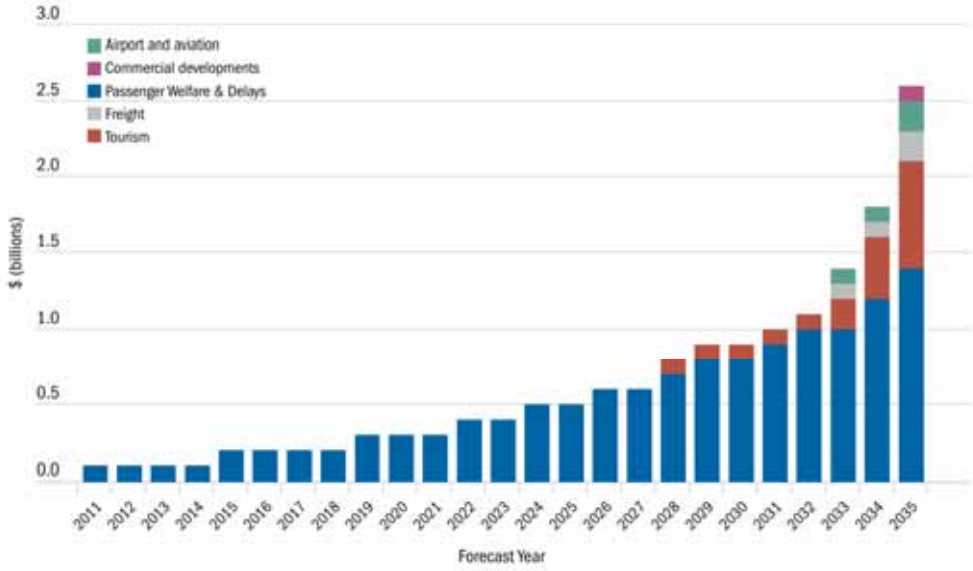
Figure 2 Key impacts and foregone NSW direct expenditure, 2011 to 2035 (medium scenario, undiscounted)



Note: Shortfall in aircraft stands assumes the development program proposed in the Master Plan has been implemented

Source: Australian Department of Infrastructure and Transport and Ernst & Young

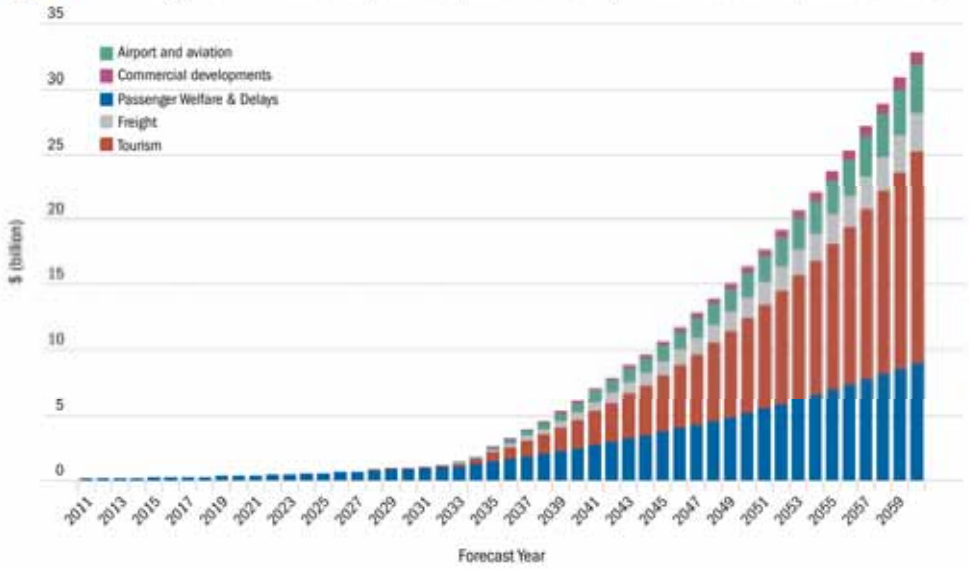
Figure 3 Foregone NSW direct expenditure, 2011 to 2035 (medium scenario, undiscounted)



Source: Ernst & Young

Figure 4 shows the forecast economic costs to NSW through to 2060.

Figure 4 **Foregone NSW direct expenditure, 2011 to 2060 (medium scenario, undiscounted)**

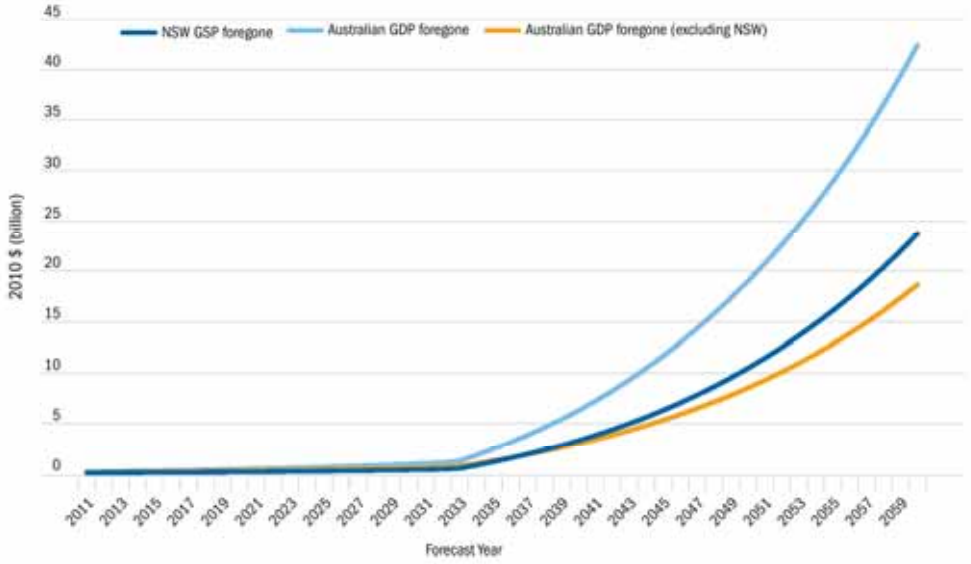


Source: Ernst & Young

- **Total (direct and flow-on) impacts on the broader economy**

The profile of total (direct and flow-on) economic activity lost to NSW and Australia in terms of GSP and GDP is presented in Figure 5.

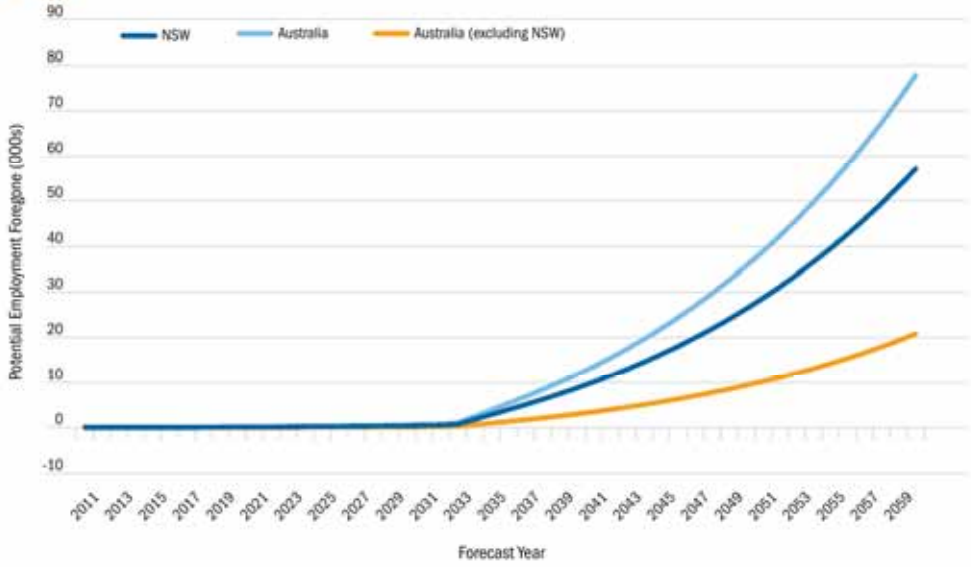
Figure 5 **NSW GSP and national GDP (medium scenario, 2010 dollars, $ billions)**



Source: Ernst & Young

The impacts on foregone direct and flow-on employment are presented in Figure 6.

Figure 6 **NSW and Australia employment outcomes (medium scenario)**



Source: Ernst & Young

Strategies for meeting the Sydney region's aviation infrastructure needs

It is not possible to provide a single simple solution to meet the Sydney region's aviation needs.

A co-ordinated suite of measures is required to address pressures across the short, medium and long-term.

Sydney (Kingsford Smith) Airport is one of the most economically significant pieces of infrastructure in Australia and will remain the primary international, domestic and regional airport for the Sydney region. Given its location next to the Sydney CBD, and its proximity to the market catchment for business, freight and leisure travel, and taking into account the existing sunk and programmed investment in infrastructure, the airport will continue to be the focus of demand particularly for peak business and high value air freight.

There is no realistic option of developing an alternate major airport to replace Sydney (Kingsford-Smith) Airport or displace its primary role. It is necessary to provide for the growth which will continue to focus on the airport. Sydney (Kingsford-Smith) Airport needs to be able to meet the forecast demand and operate safely and efficiently to its full capacity, within the limitations imposed by the legislated curfew and demand management scheme.

There are important measures that can be taken at Sydney (Kingsford-Smith) Airport and the other existing airports to get the most out of the existing sites. These would delay by a few years the worst impacts of the capacity shortfall, but they do not represent solutions for the long term.

The Steering Committee considers that:

- Increasing the capacity of Sydney (Kingsford-Smith) Airport by expanding the size of the airport or by developing additional runways in the Botany Bay region are not realistic options.
- Options for changing the legislated cap on hourly movements would provide some additional capacity, but will not meet the capacity gap in the medium and long term, particularly in the peak periods. Increasing the movement cap to 85 movements per hour (the practical capacity for the runway configuration) for all non-curfew hours would only provide a six per cent increase in the total slots available to be allocated.
- Limiting the growth of new services by smaller aircraft at Sydney (Kingsford-Smith) Airport would assist in reserving the remaining available slots for larger international and domestic aircraft and lead to more efficient use of the asset. However, it would not meet the medium to long term capacity gap and it would adversely impact regional air travellers and regional communities' access to the Airport.
- Bankstown and Richmond aerodromes can be upgraded and made available to cater for a level of civil RPT traffic. However, Bankstown and Richmond can only meet segments of the RPT market with their existing site configurations and they do not provide a solution to the capacity needs of forecast international and domestic RPT services.
- Canberra and Williamtown aerodromes cannot take the role of Sydney's second RPT airport, but need to be protected to grow to meet forecast segments of their catchment markets, including overnight air freight at Canberra.
- The consideration of a future High Speed Rail (HSR) system linking Sydney to other cities does not remove the need to act to provide additional aviation capacity. HSR and additional aviation capacity should not be considered mutually exclusively. HSR could provide an alternative for some domestic travel between cities in south eastern Australia, but is not an alternative for much of the Sydney aviation passenger demand. There is

a range of factors including frequency, travel time, cost and station location which will affect the extent of substitution. HSR cannot be expected to be the solution for aviation capacity challenges.

It is clear that by 2030, a second RPT airport will be required to be operational to supplement the capacity of Sydney (Kingsford-Smith) Airport. To provide for this requirement, governments will need within the next five years to have determined the location and commenced investment into another airport site capable of handling large RPT aircraft.

Importantly, a new airport site will provide the employment and investment drivers which will address the employment and services gap that will result from the projected population growth in Western Sydney. The growing populations in the growth centres require access to employment nodes, transport services and access to aviation facilities. Airports are important generators of economic activity and employment for communities. This is evidenced by the growth of airports as business hubs since the lease of Australia's major airports.

International experience is that airports create 1,000 direct new jobs for every million passengers, with most employment being within the local area of the airport. Airports expand the local business base and bring supporting infrastructure and impact positively on local land and property values. The Steering Committee considers that establishing a new major airport site will provide the significant employment and investment drivers which Sydney's spatial growth requires. In the absence of such development the existing employment and services disadvantage faced by Western Sydney will continue.

The Committee considers that there are three key parts of the strategy which needs to be put in place by Australian and NSW governments, the aviation industry and the community to meet the Sydney region's long term aviation infrastructure requirements and maximise community economic and environmental outcomes. These are to:

- Optimise the use of Sydney (Kingsford-Smith) Airport for RPT international, domestic and regional passengers by ensuring that it operates efficiently and safely, and can grow to its practical maximum operational capacity;
- Protect and optimise the use of the other existing airports in the Sydney region; and
- Select and confirm the site for a new supplementary airport for the Sydney region. The new site should be capable of eventually accommodating a full service airport serving all market segments.

Optimising Use of Sydney (Kingsford-Smith) Airport

Ensuring that Sydney (Kingsford-Smith) Airport operates efficiently and safely, and can continue to grow to its maximum practical statutory capacity is critical to Sydney's and Australia's economic development.

SACL's Master Plan and program of investment in airport infrastructure

Investment is required urgently in airport infrastructure to address current pressures and the additional demands of continuing growth. In the Master Plan, SACL identified a range of works to upgrade taxiways, gates and terminals. These works were to be undertaken on a staged basis,

with some identified for completion by 2019 and the balance by 2029. These works need to be brought forward.

More recently, SACL announced that it is developing a revised concept for use of the terminals. SACL's objectives for the proposal are to improve passenger experience through faster connection times and more efficient airline and airport operations. SACL is working with its stakeholders to progress the proposal. However, a number of key issues remain to be resolved, with details and funding arrangements to be negotiated, before any formal decisions can be made to proceed.

The Steering Committee welcomes the intentions to improve the passenger experience and efficiency of operations on the site but notes the need to finalise issues quickly so that essential investment is not delayed.

Recommendation 1

A plan of investment for Sydney (Kingsford-Smith) Airport needs to be settled as quickly as possible to meet the growth in larger aircraft types and the current and forecast shortfall in gates and parking at the airport. The Minister for Infrastructure and Transport (Commonwealth) should exercise the power under the *Airports Act 1996* to require that a new Master Plan process be initiated immediately by SACL. There is a need, highlighted in this review, to bring forward investments in terminals, aprons and parking for aircraft to ensure that Sydney (Kingsford-Smith) Airport is able to meet the forecast growth in aircraft movements and passenger throughput.

This Master Plan process should include the development of a definite program of works, with clear performance timeframes for each project, to support the expansion of the capacity of the terminals, gates and taxiways. The program should take account of the plans and scope for continued upgauging of aircraft, in particular the requirements to accommodate Code E and F aircraft.

Under normal arrangements, the next Master Plan is due for endorsement in 2014. While acknowledging that the Master Plan process is complex and time-consuming, the Committee is concerned that a firm program for upgrade works be resolved without unnecessary delay. The program should address the clear need to provide for the expected shortfall of gates, manage the runway balance utilisation requirements and limit any increase in taxiway congestion in the short term.

Air traffic management enhancements

Recommendation 2

SACL, Airservices Australia and airlines should accelerate plans for the implementation of advanced technologies and air traffic management practices including satellite based systems at Sydney (Kingsford-Smith) Airport. These do not significantly change the capacity of the airport, but help to maintain traffic handling rates and efficiency of operations as capacity pressures build. System performance measures such as target levels of congestion and delays should be identified which guide the implementation of efficiency measures. A 20 year investment plan should be developed to address both current proposals and long-term enhancements.

Surface transport links to Sydney (Kingsford-Smith) Airport

Sydney (Kingsford-Smith) Airport sits within the key economic precinct for Sydney and NSW, alongside Port Botany. Road congestion in the areas around the airport will increasingly impact on operations at the airport and affect the activity within the economic precinct. Increased activity at the airport will itself contribute to the problem. A key element of the strategy for

making Sydney (Kingsford-Smith) Airport work into the future will be to increase the take-up of public transport by passengers, airport workers and others travelling to the airport precinct.

The Australian and NSW Governments need to urgently undertake joint planning to develop a long-term surface transport investment and operations management strategy for the Sydney (Kingsford-Smith) Airport/Port Botany economic precinct.

Recommendation 3

The Steering Committee recommends that the NSW Government, in consultation with the Australian Government and SACL, develop and implement a strategy for increasing the patronage of the airport rail system which includes removing the existing access fee to the two airport rail stations. This would mean that fares for services to and from the airport stations would be comparable to normal CityRail fares.

- Consideration should be given to the appropriate long term funding arrangements for this measure, with costs of removing the station access fee to be met by the airport operator.
- The strategy should set annual targets for airport rail patronage growth and system performance measures which are transparent and reported.

Recommendation 4

The Steering Committee recommends that the Australian and NSW governments, in consultation with SACL, immediately commence work on the detailed planning required for a program of surface transport works to improve the connections to the airport and the surrounding precinct. This should include:

- a program to upgrade roads and intersections in the locality of the airport, including key connections such as the M4 and M5 motorways. This should include road widening and traffic flow measures to reduce congestion around the domestic terminal precinct and to provide additional bus lanes and capacity for improved bus services;
- a commitment by the governments to the investment in suitable rolling stock and train paths to enable the airport rail link to provide at least 20 peak hour trains per hour by 2020, with a long term investment plan for increase of an additional ten trains per hour by 2035;
- expansion of the Sydney bus network to the airport, in particular to link the airport directly to the CBD, Parramatta, St George/Sutherland area and the Lower North Shore. This will need to be undertaken in parallel with the strategy on the removal of the station access fee; and
- development and implementation of a plan to facilitate bus and mini-bus access to a centralised transit point or points at the airport terminal precincts.

The Committee notes that Transport for NSW has already put a submission to Infrastructure Australia for funding for a major transport study for the Sydney (Kingsford-Smith) Airport/Port Botany precinct.

Changes to regulatory measures

The Steering Committee has considered a range of proposals for change to the regulatory arrangements which apply to operations at Sydney (Kingsford-Smith) Airport. These proposals include change to the level of protection of access to the airport by intrastate NSW services from regional areas, removal or relaxation of the movement cap and the approval for extra movements in curfew shoulder periods. These changes would not provide long term solutions, but could defer the impacts of capacity pressures for a few years. They could help Sydney (Kingsford-

Smith) Airport to meet the need to lift its peak hour handling capacity and also maximise passenger throughput.

The existing regulatory arrangements have been implemented to strike a balance between the use of the airport and the protection of other community interests and amenity. The Committee is aware that governments may not support change to these arrangements, particularly if alternatives are available. However, since regulatory measures including the movement cap were put in place there has been a significant investment by the aviation industry in new, quieter aircraft types which have reduced the noise impacts of operations and air navigation procedures and technologies to better distribute aircraft operations. These need to be recognised as part of achieving the balance in managing the airport's environmental impacts.

Recommendation 5

The Steering Committee recommends that the Australian Government initiate legislative amendments to the *Sydney Airport Demand Management Act 1997* to lift the statutory movement cap from 80 to the 85 movements per hour in the peak hours of 6.00 to 10.00am and 3.00 to 8.00pm each weekday to enable greater rates of handling of peak hour traffic.

Consideration was given to whether the movement cap should be lifted to 85 movements per hour for the whole day, not just for the peak periods. The Steering Committee considers that the proposal to lift the cap only for the peak periods means that the additional capacity is targeted to the periods of greatest demand. It is unrealistic to expect the airport to operate effectively at its maximum rate for the full day. In practice, there will inevitably be some level of disruption of the schedule, due to external factors such as weather or to operational issues affecting aircraft, the airfield or terminals. The proposal as recommended allows a small but important margin to help cope with these inevitable events and allow recovery.

Recommendation 6

The arrangements for implementing and monitoring the Sydney Airport Slot Management process and movement cap should be reviewed to ensure they are effective in preventing movements beyond the levels set, but are workable and consistent with safe and efficient operation of the airport and the surrounding airspace and do not lead to perverse environmental outcomes.

Recommendation 7

The Steering Committee recognises the continued importance of access by regional communities to Sydney (Kingsford-Smith) Airport both for access to the CBD and for transfers to flights to other destinations. The Committee does not recommend any reduction to the existing level of protection of slots for intrastate services; nor does the Committee support the forced relocation of any regional services to other airports.

The Steering Committee notes that a staged reduction in the level of use of small aircraft over time would assist in maximising the passenger throughput at the airport.

The Committee recommends that the Australian Government take action including amendments to the Slot Management Scheme to further limit access to new runway slots for smaller aircraft types, to maximise passenger throughput at the airport.

- The Committee supports preventing the allocation of slots for new services operated by aircraft of less than 50 seats from 2015, increasing to 70 seats from 2020.
- Recognising that the main use of aircraft up to 70 seats is for regional air services, slots allocated for services that are already operating should be grandfathered.

Aircraft Noise and the Long Term Operating Plan

Managing the balance between the needs of the airport and the impacts of aircraft noise on the surrounding communities is a key element in the planning for growth at Sydney (Kingsford-Smith) Airport. The Steering Committee does not support changes to the legislated curfew.

The use of alternate runway operating modes under the LTOP to enable the sharing of aircraft noise in the areas around the flight paths to Sydney (Kingsford-Smith) Airport has been a key measure in providing some respite to the communities most affected.

With the level of traffic growth expected, the scope to operate the noise sharing modes will be very limited by 2020. In the absence of new initiatives, the periods of respite offered for some communities will progressively become more and more limited, particularly for communities to the north of the airport. The impacts of this increased activity will be reduced somewhat by the fact that newer aircraft types have a smaller noise footprint.

Recommendation 8

The Steering Committee recommends that the LTOP for Sydney (Kingsford-Smith) Airport be reviewed with the aim of determining new, more effective measures of aircraft noise impacts and respite than the current runway end movement numbers.

- International experience regarding alternative approaches such as determining "noise budgets" and setting operating parameters for aircraft operations based on noise intensity and frequency of operation in noise sensitive hours should be examined, with a view to setting achievable noise reduction targets for the airport based on the use of new generation quieter aircraft types.

Protecting airspace around Sydney (Kingsford-Smith) Airport

It is important that the future operations of aircraft to and from Sydney (Kingsford-Smith) Airport are not restricted as a result of developments which intrude into protected airspace, create hazards to safe aircraft and airport operations or interfere with the operation of radar and other air navigation facilities.

Recommendation 9

The Steering Committee recommends that the Australian and NSW government agencies undertake an audit of existing and potential intrusions into the protected airspace for Sydney (Kingsford-Smith) Airport (addressing both the Procedures for Air Navigation Services – Aircraft Operations (PANS-Ops) and obstacle limitation surfaces (OLS)).

An agreement should be developed on statutory provisions in Australian and NSW government legislation to protect operations to and from the airport and on the administrative arrangements to support the implementation of those provisions and ensure their effective implementation.

- The arrangements should be extended to protect the operation of radar and other air navigation systems from interference arising from inappropriate location or design of structures in the airport vicinity.
- The Committee notes the pressure for continuing urban renewal in Australian cities, including in areas around airports. The Committee advocates appropriate strategic planning to support renewal opportunities without prejudicing the operation and development of airports as a result of airspace penetrations or inappropriate exposure to aircraft noise.

Optimising Use of Other Existing Airports in the Sydney Region

Airport sites are scarce and are difficult to replace or supplement. It is important that planning for each of the other existing airports, and the areas around them, should allow aviation activities to develop to the full practical potential of the sites, having regard to the physical capacity of each site and to the impacts on nearby communities.

The Australian and NSW governments need to urgently develop and agree policy and planning approaches, including airport noise amenity criteria, to guide development around airports particularly for Greenfield sites. It is critical to prevent inappropriate development within flight corridors which restrict the opportunities for future airport development.

Canberra Airport

Canberra Airport is an important airport with infrastructure capable of handling the full range of services, but is not located close enough to the Sydney market to take the role of Sydney's second RPT airport. It will serve a growing RPT market in southern NSW and will provide an additional option for a small proportion of Sydney passengers who are prepared to travel the extra distance.

Canberra Airport is the only curfew-free airport within reach of Sydney and provides the potential for night-time services which cannot be accommodated in Sydney, in particular international LCC services and overnight freight services. It is important that Canberra's 24 hour unrestricted curfew-free status be protected.

Recommendation 10

The Steering Committee recommends that the Australian, ACT and NSW governments work together to ensure that Canberra Airport is protected from encroaching noise-sensitive urban development which would be incompatible with 24-hour jet aircraft operations and could restrict the expansion of the airport over time into a significant domestic and international aviation centre for both passenger and freight services for south-eastern Australia.

- In particular, the current undeveloped approach and departure corridors to the north and south of the airport should be protected (as appropriate) from residential or other noise-sensitive development.
- The Australian, ACT and NSW governments should undertake a joint strategic planning study of these and other areas potentially affected by aircraft noise to ensure that appropriate zoning and infrastructure planning is put in place to avoid creating problems for the future.
- Measures to protect the future growth at Canberra Airport should be put in place quickly, recognising that there is already pressure for approval of greenfield residential developments in the southern corridor.
- The Committee considers that greenfield residential development in currently undeveloped approach and departure corridors, are not appropriate, having regard to the expected growth of operations at the airport and its role as an overnight hub for jet freight, noting the particular sensitivity of night-time noise.

RAAF Base Williamtown (Newcastle Airport)

Newcastle Airport is also too far from the Sydney market to serve as Sydney's second RPT airport, but will serve an important and growing market for the Hunter and Central Coast regions.

Given the aerodrome's role as the primary operational RAAF fighter base and the focus of future Joint Strike Fighter operations, its capacity to accommodate continued growth of civil operations is unclear.

Recommendation 11

The Steering Committee recommends that the Australian and NSW governments develop a joint strategy for accommodating growth in aviation demand for the Hunter and Central Coast regions, addressing short and long-term needs. Any opportunity for expansion of civil services has to be based on the aerodrome being able to meet its primary role as a RAAF fighter base.

- As an initial step, RAAF, Newcastle Airport and the aviation safety agencies should conduct a study to examine strategies to assist in meeting demand in the short-term, such as lifting the arrival rate permitted from six to eight per hour in defined peak periods.
- For the long term, the Australian and NSW governments, in consultation with RAAF and Newcastle Airport, should initiate a study to reach a clear assessment of whether the Williamtown site can meet the future needs of civil operations for the region north of Sydney, with regard to the forecast growth in the Hunter Valley and Central Coast. If the assessment is that Williamtown is not adequate to provide the necessary capacity, a strategy should be initiated for securing an alternative site for a civilian airport to service the region.

Action is also needed to ensure that Newcastle Airport is protected from encroaching urban development which would be incompatible with the airport's expansion and its operations as the primary RAAF Base in south-eastern Australia and a significant RPT airport.

Recommendation 12

The Steering Committee recommends that the NSW and Australian governments should develop a land use strategy, in consultation with Newcastle Airport, RAAF and the local councils, for land use and statutory protections in the areas around RAAF Base Williamtown and its flight-paths.

Bankstown Airport

The capacity of Bankstown Airport to accommodate services beyond the current General Aviation (GA) operations is affected by factors such as the short length of the three runways and potential airspace conflicts arising from the airport's proximity to Sydney (Kingsford-Smith) Airport flight-paths. The airport's location in a highly developed part of Sydney and the potential community impacts are also factors.

Subject to approval through the Master Plan process, Bankstown Airport could support up to about ten Instrument Flight Rules movements per hour by turboprop RPT aircraft. The airport is not suitable to accommodate jet RPT operations.

The Steering Committee supports further development of proposals for Bankstown Airport to be made available as a site for a level of turboprop RPT operations. The Committee does not support any forced relocation of RPT operations, but considers that Bankstown could provide an option for growth of operations by smaller RPT aircraft, including in particular regional services, as slots for additional services become unavailable at Sydney (Kingsford Smith) Airport.

A new Bankstown Airport Master Plan process is due to be conducted in 2012, with full public consultation, and a revised plan to be lodged early in 2013.

Recommendation 13

The Steering Committee recommends that Bankstown Airport and the Australian Government use the Master Plan process to resolve a strategy to allow Bankstown Airport to accommodate RPT operations by turbo-prop aircraft, with the following issues to be explored:

- the extent to which RPT operations might be permitted at Bankstown and any conditions which might be imposed on the operation of RPT services;
- the extent to which the main runway and associated infrastructure might be extended or upgraded to accommodate RPT aircraft, freight aircraft and business jets;
- any implications arising from the operation of RPT aircraft, freight aircraft or business jets for airspace and air traffic management in the region;
- the adequacy of existing surface transport links to allow RPT passengers to travel between Bankstown Airport and Sydney (Kingsford-Smith) Airport or the Sydney CBD;
- any implications for congestion affecting roads and intersections around the airport from the commencement of RPT services;
- an investment plan to support the changes required to accommodate RPT operations; and
- a surface transport investment plan for the upgrade of airport road links and key intersections to improve access between Sydney (Kingsford-Smith) Airport and Bankstown Airport.

NSW Government transport and planning agencies and Australian Government aviation agencies will need to work with Bankstown Airport in preparation of relevant analysis for the Master Plan process. This process also involves extensive public consultation.

The NSW Government should also initiate a strategic planning review to address the potential implications of the use of Bankstown for a level of RPT operations. This should be linked to any surface transport investment plan.

The proposal to open Bankstown to operations by turbo-prop RPT aircraft complements the proposal to prevent growth of additional small aircraft operations at Sydney (Kingsford-Smith) Airport. If new turboprop services, which typically serve regional routes, cannot be accommodated at Sydney (Kingsford-Smith) Airport, it is important that an alternative airport is available for those services.

In the initial years at least, the level of RPT operations at Bankstown Airport is likely to be at a level compatible with Bankstown's role as the major general aviation airport for the Sydney region.

RAAF Base Richmond

RAAF Base Richmond is an important economic driver for the North West subregion of Sydney. The RAAF's operational use of the site has decreased over time, and it is questionable whether the costs of maintaining the site as a base can be sustained if limited to the current range of uses. RAAF would support shared use of the site with some civil operations as a way to defray the operational costs and meet the investment needed to maintain the facility.

Given the loss of aviation facilities for the Sydney region over the past 20 years, it is critical to meeting Sydney's aviation growth and Australia's military response capability that Richmond be retained as an aerodrome to help serve Sydney's aviation needs. The Australian Government

needs to ensure that the RAAF is able to continue to operate at the site and that other aviation users can utilise the aerodrome consistent with RAAF operational requirements.

For a relatively modest investment, civil services could be supported on the existing runway, providing RPT services up to something like five million passengers per year.

The location of Richmond in the northwest subregion of Sydney would provide an immediate market, improving access to services for residents of West and North West Sydney, rather than divert demand from Sydney (Kingsford-Smith) Airport. Initially, Richmond is likely to attract low cost carrier services to a small number of major domestic destinations. The market is likely to grow over time in line with projected population growth in the region.

The Steering Committee is conscious of the likely sensitivities in the local communities about the introduction of RPT services, particularly in relation to the additional exposure to aircraft noise. The Committee notes that an environmental assessment under Commonwealth law would be required for the change, which would include an extensive process of public consultation.

The Committee's expectation is that a curfew would be required for RPT services at Richmond.

Recommendation 14

The Committee recommends that the Australian Government initiate action to progressively open RAAF Base Richmond to a level of civil traffic using the existing east-west runway alignment. The civil traffic would be operated in parallel with continued Defence operations and under conditions agreed with the RAAF.

- As a first step, the Australian Government should undertake an environmental impact assessment process for the opening up of civil operations based on the investment and traffic scenarios set out in this Report for operations on the existing runway configuration. The assessment should include consideration of a curfew and any other appropriate conditions to protect amenity.
- Following the assessment, the Australian Government should move to formalise the arrangements for joint civil and RAAF use of the site, drawing on the example of the other federal leased airports, which accommodate both civil and military activity.
- The civil facility could be leased and operated under the Commonwealth *Airports Act 1996* with arrangements similar to the lease for Canberra Airport with RAAF's long term access to the airfield and the facilities it requires on the base and the civil airport lessee taking responsibility for the balance of the site.
- The arrangements should include development obligations to ensure provision of facilities for GA operations and RPT capacity without undue delay.
- The Australian and NSW governments, working closely with local government in the region, should initiate a strategic planning review to address the potential implications of the use of RAAF Base Richmond for a level of RPT operations.

Consideration was also given to an option of adding a new north-south runway at Richmond. This would allow a longer runway to be built, up to a length that would accommodate a full range of international and domestic services. A north-south alignment would also result in better outcomes for aircraft noise exposure, with flights avoiding the Richmond and Windsor townships.

For a north-south runway, acquisition of additional land and major relocations to existing road and rail systems would be required. As a result, this would be a high cost option for something that would not meet all of the projected long term aviation needs of the Sydney region.

Should RAAF Base Richmond be no longer required for RAAF use at some stage in the future, the aviation infrastructure must be retained and made available for civil use, including for GA.

A Greenfield Airport Site in the Sydney Region

None of the above changes would meet the projected long term demand for aviation in the Sydney region. The initiatives to make the most of Sydney (Kingsford-Smith) Airport and other existing airports will delay the impacts of a shortfall in airport capacity for some years, but by about 2030 or soon thereafter, a new airport will be required to supplement capacity.

The need for a new airport would not be overcome with the construction of a HSR network. HSR and additional aviation capacity should not be considered mutually exclusive, as shown in the number of countries constructing both HSR networks and new airports. These countries, and this Steering Committee, recognise both offer important economic and social benefits.

HSR is not a substitute for all air travel, especially international travel. A range of factors including frequency, travel time, cost, station location, and the likely competitive airline response, mean HSR will not remove the need for a supplementary airport.

Although previous studies have assessed a wide range of sites for a possible second RPT airport for the Sydney region, a fresh assessment was conducted *ab initio*. The search addressed the broader Sydney region, from the Hunter region in the north to Canberra in the south and the Blue Mountains to the west.

Localities were assessed to find a site suitable for either a:

- Type 1 airport – a full service airport with a runway length up to 4,000 metres, capable of serving all market segments and accommodating a future parallel runway layout; or
- Type 3 airport – a limited service airport with a runway length of up to 2,600 metres, capable of serving all market segments but with a single runway layout only.

Key issues in the shortlisting and site assessment included, but were not limited to:

- site suitability, in particular suitability of the terrain for airport construction;
- air navigation issues, including airspace conflicts with existing airports;
- environment and amenity impacts and protected ecosystems;
- proximity to demand;
- proximity to planned growth centres; and
- aviation development capacity.

A total of 18 locations were identified in the initial round of assessment, from which five were taken forward for further assessment. These comprised large areas of broadly suitable land identified in the Nepean and Hawkesbury localities, with smaller areas identified in the Cordeaux-Cataract, Burragorang and Central Coast.

The best sites in each locality were then assessed in more detail.

Figure 7 Five localities identified for site-specific analysis

Source: WorleyParsons/AMPC

Type 1 airport options

Site analysis was undertaken, including a technical analysis of the sites and an economic appraisal (rapid Cost Benefit Analysis) to compare suitable sites. The results showed that for a Type 1 airport, potential sites in the Nepean locality (including Badgerys Creek and Luddenham sites) were ranked the best in terms of proximity to Sydney's growth areas and had the highest Relative Benefit Cost Ratios (RBCRs). The RBCRs for the Nepean locality sites ranged from 2.7 for Luddenham to 2.4 for Greendale.

The next best site based on the quantitative economic analysis was located in Hawkesbury (Wilberforce). However, a Type 1 airport located at Wilberforce is likely to require closure of RAAF Base Richmond.

The next best sites were Somersby on the Central Coast and the Wilton site in the Cordeaux Cataract locality. However, a Type 1 airport at Somersby would be constrained due to airspace interaction with Sydney (Kingsford-Smith) Airport.

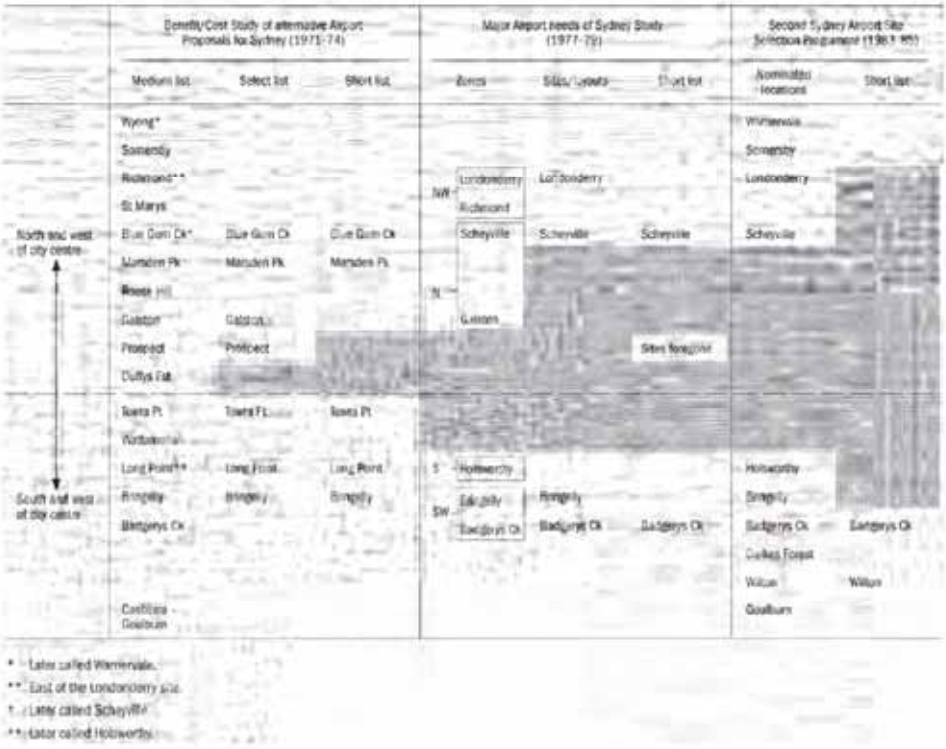
The Wilton site in the Cordeaux-Cataract locality was best placed with regards to noise impacts and is also one of the least constrained sites in terms of airspace interactions, making it a strong overall site. It currently ranks lower on proximity to market, including the Sydney area

growth centres, but would be well located if the south-west corridor becomes the key focus for long-term development beyond the life of existing planning instruments.

In light of the capacity forecasts and the economic cost if demand is not met, it is important that the process be initiated without delay, notwithstanding the cost and likely opposition from some in the areas around the preferred site.

The range of potential sites for consideration has continued to shrink as development has proceeded in the Sydney basin as shown in Figure 8.

Figure 8 **Potential new Sydney aviation sites previously identified**



Source: Department of Aviation, Sydney Second Airport Site Selection Programme Draft Environmental Impact Statement, prepared by Kinhill Stearns, 1985

Recommendation 15

The Steering Committee recommends that the Australian and NSW governments commit to establishing a supplementary airport for the Sydney region.

- The site selected for a supplementary airport should be one which is capable of accommodating a full service airport serving all market segments and with a parallel runway layout (a "Type 1" airport in the terms of the assessment conducted for this Study). This would allow staged development as aviation activity develops, with a single runway operation initially and parallel runways in the long term.
- The Badgerys Creek site (in the Nepean region), which was acquired for a future airport clearly remains the best location to provide significant additional capacity. It is located close to growing markets in the western regions of Sydney and close to road and rail transport links. In turn, it would provide much needed employment and economic opportunities for the growing residential population of Western Sydney. The site has been

protected from encroaching development and given that the Commonwealth owns the land it would be less costly and disruptive to the community as a development site than other options. In particular an airport at this site and its associated employment opportunities will provide a significant catalyst to increase much needed housing supply in the region.

- The Committee is conscious of policy statements indicating that both Australian and NSW governments no longer see the site as suitable for airport development. The decision is one for governments, but a definitive decision is required now to confirm whether or not an airport can be built at Badgerys Creek.
- If the Badgerys Creek site is not ruled out by governments, the Environmental Impact Statement should be updated immediately. Subject to the outcomes of that process, planning and other work should commence to development infrastructure so RPT operations can commence as soon as possible, thereby maximising the opportunities for increased access to aviation services and employment in Western Sydney.

Recommendation 16

If Badgerys Creek is ruled out, Wilton is the next best site. The airspace interactions with Sydney (Kingsford-Smith) Airport are less constrained than other sites, and a smaller number of people impacted by both land acquisition and aircraft noise. Sydney's growth is expected to spread further to the southwest in the long term.

If Badgerys Creek is ruled out, the Steering Committee recommends that the Australian and NSW governments proceed without delay to secure and protect the Wilton site for the development of a supplementary airport in the future.

The following initial steps should be taken in the next 12 months with regards to Wilton:

- An Environmental Impact Statement assessment, and preliminary land acquisition planning, should be initiated in order to identify potential environmental issues and strategies for managing them.
  - Processes should be put in place for identifying the properties that would need to be acquired and to make preparations for the acquisition program.
  - A review of strategic planning instruments should occur to take account of the preferred airport site, looking beyond the life of existing instruments and recognising the potential for an economic driver like an airport to contribute to planning outcomes. Planning should commence for controls on land use and development in the areas surrounding the preferred site.
  - An early comprehensive community consultation and engagement program including local government should immediately commence.
- As a minimum a supporting infrastructure plan should be developed between the Australian and NSW governments. This should include planning on surface transport links and connections to utilities, including identification of the service corridors to be protected.

Wilton is further than Badgerys Creek from Sydney and the current planned growth centres. While Sydney's growth is expected to spread to the southwest in the long term, the level of business for a new airport at Wilton is likely to be lower than for an airport at Badgerys Creek in the initial years and the commencement of operations might not be viable by 2030 for Wilton. Opening RAAF Base Richmond to RPT services would provide improved access to aviation services for the growing population of western Sydney in the interim.

Recommendation 17

The Steering Committee recommends that, if Wilton is selected as the site for a supplementary airport, it is important that action proceed in the interim to open RAAF Base Richmond to a level of RPT operations.

The development of an additional airport will require a strong ongoing commitment from both the Australian and NSW governments.

Recommendation 18

The Steering Committee recommends that when a firm decision is reached to proceed with development of a supplementary airport and the preferred site, the decision should be locked in as an ongoing commitment of both governments through legislative actions in both the Australian and NSW Parliaments. This will provide planning certainty to support the development of Sydney, both by allowing the effective development of housing, employment and transport in the areas around the selected site, and by removing conjecture over the future of other possible sites that have been suggested for an airport.

Recommendation 19

The Steering Committee recommends that, if governments confirm that the Badgerys Creek site is not to be used as an airport, an agreed approach be developed for future use of the site, recognising its potential contribution to the supply of employment lands, affordable housing and community amenity facilities.

- The Australian and NSW governments should immediately agree to a detailed planning and zoning strategy for the site which effectively preserves the site for future employment lands for the South West Growth Centre and Western Sydney.
- The Australian Government should, in consultation with the NSW Government, undertake a scoping study of the future land disposal and sale options, to determine the optimal timetable for the land to be brought to the market.
- The Australian and NSW governments should consider a suitable public-private partnership land development joint venture for the site to provide an optimal strategy for infrastructure provision, land release and financing for urban development of the site.
- The Australian and NSW governments should jointly plan infrastructure investment and programming for the site, including possible extension of the South West Rail Line from Leppington to the site.
- The current state and local government restrictions on land surrounding the site, which were put in place to protect the site for a future airport development, could be removed.

Governance, Monitoring and Reporting

It is important that the Australian and NSW governments continue to work together in taking forward the strategy for ensuring adequate aviation capacity for Sydney. A wide range of actions by both governments, airport operators and others will need to be monitored and coordinated over a long period.

Recommendation 20

The Steering Committee recommends that the Australian and NSW governments establish a joint body and an agreed process for managing and monitoring implementation of the strategy, with access to a broad-based reference group.

- Regular reports should be provided to both governments, advising on trends in aviation activity and their impact on timeframes identified in this Report; identifying progress on all elements of the strategy; and highlighting significant issues encountered.
- What is expected of airport operators should be made clear and, where practicable, formalised in instruments such as airport master plans or lease agreements.
- The monitoring should include coverage of the adequacy of airport capacity for general aviation operations as well as RPT and freight services.

Conclusions

The Steering Committee has undertaken a comprehensive integrated planning review of one of the most critical planning and investment decisions facing Sydney, New South Wales and Australia – the future aviation infrastructure needs of the Sydney region.

The work of this Joint Study seeks to ensure that sufficient future aviation capacity is in place so that Sydney and Australia can and will benefit from the growth in population, air travel and business and personal mobility. Importantly, this Study has set out to integrate for the first time aviation planning with planning for Sydney's spatial growth and its surface transport investment.

Aviation is an economic driver and a social enabler for Australia. It creates jobs and underpins the future industries and communities which Australia needs. For Sydney, NSW and Australia to be positioned as global centres of finance, trade, high value technology and manufacturing, and to support the communities we want in the region, Sydney's aviation needs must be met now and into the future.

The Steering Committee well understands why solving the issues raised in this review have been contentious. However, the option of doing nothing is no longer available and the costs of deferring action are unacceptable.

The need for both short and long-term actions is clear.

The economic costs of inaction outweigh the costs and controversy of expanding airport capacity.

The spread of urban development in the Sydney basin means it is already very difficult to find a suitable site for a second RPT airport. The Joint Study has found that there is no optimal site that satisfies everyone. However, the options have now become very limited.

The opportunity to secure a suitable site is likely to disappear altogether if action is not put in train now.

The following presents the impact of the capacity constraints identified over the short, medium and long term and the subsequent actions recommended to address them. The Committee considers that these measures recommended can be implemented in parallel.

Timeframe	Issue	Impact	Action Recommended
Short Term (0–10 years)	Shortfall in Sydney (Kingsford-Smith) Airport aircraft stands	Increasing congestion and delays with some activity constrained by lack of stands	1. Initiate a new Master Plan process to develop a definite program of works at Sydney (Kingsford-Smith) Airport, bringing forward investments in terminals, aprons and parking for aircraft, providing for management of runway balance utilisation requirements and limiting taxiway congestion
	Weekday peak slots to access Sydney (Kingsford-Smith) Airport fully allocated	New entrants excluded from peak, only some will accept other times	2. Accelerate implementation of technologies and air traffic management practices to maintain traffic handling rates / efficiency 5. Lift Sydney (Kingsford-Smith) Airport statutory movement cap from 80 to 85 in peak hours to enable greater rates of handling of peak hour traffic 6. Review the slot management process and movement cap to ensure they are effective in preventing movements beyond set levels, ensuring efficient airport operations
	Roads and intersections at entrance to Sydney (Kingsford-Smith) Airport domestic terminal near constant traffic jam in peak periods	Increasing travel time and cost between Sydney (Kingsford-Smith) Airport and the CBD / other key locations	4. Develop agreed program of surface transport works, including: · Upgrade of roads and intersections in airport locality · Investment in suitable rolling stock/train paths to provide at least 20 peak airport trains per hour by 2020 and a further 10 per hour by 2035 · Expansion of public bus network to the airport · Facilitation of centralised bus/mini-bus transit point at the airport
	CBD-bound train services from Sydney (Kingsford-Smith) Airport at capacity in the morning peak	Train travel undesirable due to crowded carriages, greater road use increasing congestion	3. Develop strategy to increase rail patronage to access Sydney (Kingsford-Smith) Airport. This should include removal of the station access fee.
	Activity at Sydney (Kingsford-Smith) Airport consistently above level required for LTOP	Capacity to share noise and provide respite only available for few hours of the day	8. Review LTOP to determine more effective measures of aircraft noise impacts and noise respite, such as noise budgets and aircraft operating parameters
	Development occurring around few remaining options for future airport sites	Options for development of current and future sites compromised	14. Undertake environmental and other assessments for opening of RAAF Base Richmond east-west runway for civil traffic 15. and 16. Undertake environmental and other assessments; and land acquisition planning to secure site for future additional airport
	Development near Sydney (Kingsford-Smith) Airport, Canberra Airport and RAAF Williamtown / Newcastle Airport	Constraints on operations at existing airports due to inappropriate development	18. Decision to proceed with supplementary airport and preferred site locked in as an ongoing commitment of the Australian and NSW governments 9. Develop and implement Australian and NSW statutory provisions to protect operations to and from Sydney (Kingsford-Smith) Airport 10. Protect current undeveloped approach and departure corridors to Canberra Airport, to enable 24-hour aircraft operations and future expansion 12. Develop strategy for land use and statutory protections in areas around RAAF Base Williamtown
	Protected regional slots full at Sydney (Kingsford-Smith) Airport	Constraints on new regional services accessing Sydney region	13. Use Master Plan process to resolve a strategy to allow Bankstown Airport to accommodate RPT operations by turbo-prop aircraft
	Fragmented planning	Uncertainty for the community and businesses	20. Australian and NSW governments establish a joint body and agreed process

Timeframe	Issue	Impact	Action Recommended
Medium Term (10–25 years)	Civilian operations at RAAF Williamtown/ Newcastle Airport reach capacity in the peak	No new civilian services possible in peak times at Newcastle Airport	11. Develop strategy to meet aviation demand in the Hunter and Central Coast regions, on the basis of the current aerodrome's primary role as a RAAF base: • Examine short term strategies such as lifting arrival rate to 8 per hour in defined peak periods • Assess the site's ability to meet future civil demand, and if capacity deemed inadequate, initiate strategy to secure alternative site for a civilian airport
	Around 2027, all slots to access Sydney (Kingsford-Smith) Airport fully allocated Around 2033 aircraft movements at Sydney (Kingsford-Smith) Airport estimated to reach legislated cap of 80 movements per hour	New entrants excluded from flying to Sydney, with no opportunities for new carriers No new flights able to operate, growth only possible through fuller or larger aircraft $2.3 billion in foregone GDP for Australia ($6.0 billion foregone in NSW GSP)	7. Further limit access to new Sydney (Kingsford-Smith) Airport runway slots for smaller aircraft: • Prevent allocation of slots for new services operated by aircraft less than 50 seats (from 2015), increasing to 70 seats (from 2020) • Grandfather slots already allocated to regional air services operating aircraft up to 70 seats 15. Commence operations at supplementary airport at Badgerys Creek **or** 14. and 17. Progressively open RAAF Base Richmond to a level of civil traffic using the existing east-west runway alignment and 16. Progress development of Wilton as supplementary airport and 19. Agree approach for future use of Badgerys Creek site
Long Term (25–50+ years)	Demand cannot be met at Sydney (Kingsford-Smith) Airport if additional capacity is not operational by 2035	Unmet demand of approximately 665 million passenger movements and 9 million tonnes of air freight $34.0 billion foregone GDP for Australia ($17.5 billion foregone NSW GSP) 17,300 foregone jobs per annum in Australia (12,700 pa in NSW)	