

PART TWELVE

APPENDICES



P12

A. Glossary of terms

Aircraft movement	One landing or one take off by an aircraft
Airport Master Plan	The principle planning document required under the <i>Airports Act 1996</i> setting out a 20-year plan for each leased federal airport.
Airservices Australia	The Australian Government agency providing air traffic control and related air traffic services, and airport rescue and fire fighting services.
Aprons	Defined areas for the safe parking of aircraft, where the passengers and freight are transferred between aircraft and terminal facilities, and where maintenance of aircraft takes place in between flights.
Australian Noise Exposure Concept (ANEC)	Similar to the ANEF except the word concept refers to the levels of noise exposure which would occur if particular future scenarios eventuated.
Australian Noise Exposure Forecast (ANEF)	A system developed as a land use planning tool aimed at controlling encroachment on airports by noise sensitive buildings. The system underpins Australian Standard AS2021 'Acoustics – Aircraft noise intrusion – Building siting and construction'. The Standard contains advice on the acceptability of building sites based on ANEF zones. ANEFs are the official forecasts of future noise exposure patterns around an airport and they constitute the contours on which land use planning authorities base their controls. It takes into account the frequency, intensity, time and duration of aircraft activities and calculates the total sound energy generated at any location.
Benefit cost ratio (BCR)	The ratio of benefits and costs of a project or proposal, expressed in monetary terms and discounted to bring the value to current day dollars. Commonly used to aid comparison of initiatives.
Bureau of Infrastructure, Transport and Regional Economics (BITRE)	Part of the Policy and Research Division of the Department of Infrastructure and Transport, BITRE provides economic analysis, research and statistics on infrastructure, transport, regional development and local government issues to inform both Australian Government policy development and wider community understanding.
Civil Aviation Safety Authority (CASA)	An independent statutory authority responsible for regulating aviation safety in Australia and the safety of Australian aircraft overseas.
Constrained forecast demand	Projections which take into account the impact of limited infrastructure availability. In the case of the Joint Study, this applies mainly to the long-term annual aviation forecasts, and the hourly aircraft movement and slot allocation forecasts.
Controlled airspace	Airspace of defined dimensions within which air traffic control services are provided in accordance with airspace classifications.
Cost benefit analysis (CBA)	Analysis, in monetary terms, of the benefits and costs to society of a proposed initiative.
Curfew	A restriction on certain flights taking off or landing from specified airports at designated times.
Dedicated freighter	Aircraft providing only air freight services
Direct economic impact	Economic impacts resulting from the initial, immediate economic activities (jobs and income) generated by a project or development. Direct impacts associated with the development coincide with the first round of spending in the economy. For example, a direct economic impact of tourists is the impact from expenditures at hotels, cafes, galleries and museums etc. Direct economic impact can be measured in terms of expenditure or value-added (See <i>indirect economic impact, expenditure, value add</i>)
Domestic passenger movements	For the purposes of the Joint Study, RPT passenger movements to and from capital cities and interstate (outside of NSW).

Environmental Impact Statement (EIS)	A detailed written statement prepared in accordance with relevant legislation which analyses the environmental impacts of a proposed action, including adverse effects of the initiative that cannot be avoided, alternative courses of action, short-term uses of the environment versus the maintenance and enhancement of long-term productivity and any irreversible and irretrievable commitment of resources. A period of public comment is required for an EIS to be finalised; consequently, it may be considered complete whilst the publication is draft.
Expenditure	Expenditure is the broadest measure of economic activity. It includes the full (gross) level of business revenues, which pays for costs of materials and costs of labour, as well as generating net business income (profits). Because of this, it is difficult to avoid double and triple counting. For example, the expenditure of tourists is the full dollar amount spent at hotels, cafes, galleries and museums etc.
Full service carrier airline	An airline service model which typically provides a price and seating structure based on varying levels of service, food and other facilities. (See <i>low-cost carrier</i>)
Gates	The physical location where passengers depart or arrive at a terminal to access aircraft either directly via aerobridges for contact stands or via bus or walking for remote stands.
General Aviation (GA)	A coverall term used to refer to the range of aviation operations not included in the definition of RPT passenger or air freight. This may include activities such as private leisure or sightseeing operations, emergency (aero-medical, search and rescue, fire-fighting) services, pilot training, surveying and aerial photography, and aero-agriculture services. They may also refer to niche charter or freight services operated on an ad-hoc basis.
Generalised trip cost	The sum of money price and user cost, with any additional costs to complete the door-to-door journey valued at money prices.
Global Economic Corridor (GEC)	A key employment zone, identified by the NSW Government as including commercial centres at Macquarie Park, Chatswood, St Leonards, North Sydney, Central CBD and Green Square / Mascot (including Sydney (Kingsford-Smith) Airport and Port Botany)
Global Financial Crisis	The global credit, banking, currency, and trade crisis which emerged in September 2008.
Indirect economic impact	Economic impacts resulting from the production, employment and income changes occurring in other businesses/industries in the community that supply inputs to the project industry. For example, an indirect impact of tourist expenditure at cafes is the impact on producers of food and coffee. (See <i>direct economic impact</i>).
Instrument flight rules (IFR)	A set of regulations under which the navigation of an aircraft is based on flight instruments, for example, ground based radio or satellite based navigational capability.
International passenger movements	RPT passenger movements to and from destinations outside Australia.
Leased federal airports	The 21 airports privatised under the <i>Airports Act 1996</i> where the airport operators lease the airport land from the Australian Government. Within the Sydney region, Sydney (Kingsford-Smith), Bankstown, Camden and Canberra airports are leased federal airports.
Load factors	Proportion of seats on an aircraft that are occupied by passengers.
Local Environment Plan	An environmental planning instrument prepared and administered by local governments.
Long Term Operating Plan (LTOP)	Introduced in 1997 to address concerns raised regarding aircraft noise at Sydney (Kingsford-Smith) Airport. It is a runway usage protocol designed to distribute aircraft noise as equitably as possible.
Low cost carrier (LCC)	An airline service model which traditionally has sought to pare back the benefits of all-inclusive fares in exchange for lower ticket prices. (See <i>full service carrier airline</i>)
Metropolitan Plan for Sydney 2036	The <i>Metropolitan Plan for Sydney 2036</i> was released in December 2010 and set out an integrated planning framework to provide the land use, services and infrastructure required to support future growth throughout Sydney to 2036.

Movement Cap	The Commonwealth <i>Sydney Demand Management Act 1997</i> provides a framework for the regulation of aircraft movements (take-offs and landings) at Sydney (Kingsford-Smith) Airport. The Act prescribes a maximum of 80 movements for every operating hour. This is measured in fifteen minute intervals, such that no more than 80 movements may operate at 7.00am to 8.00am, 7.15am to 8.15am, and 7.30am to 8.30am and so on.
Maximum Take-off Weight (MTOW)	The maximum gross weight, due to design or operational limitations, at which an aircraft is permitted to take off.
<i>National Aviation Policy White Paper</i>	The Australian Government released the <i>White Paper – Flight Path to the Future</i> on 16 December 2009 which brought together all strands of aviation policy into a single, forward-looking document providing planning, regulatory and investment certainty for the aviation industry out to 2020 and beyond.
Net present value (NPV)	The difference between a future stream of benefits and a future stream of costs, discounted to bring the value to current day dollars.
North West Growth Centre	A growth area defined by the NSW Government to be located within the boundaries of three local government areas The Hills, Blacktown and Hawkesbury. It comprises 16 precincts, is approximately 10,000 hectares in size and will contain about 70,000 new dwellings for 200,000 people.
N70	The number of times on an average day that an area may experience noise levels of 70 dB (A) or more from overflying aircraft, and generally expressed as a set of contours on a map. 70 dB (A) is the external noise level threshold for an average residence with doors and windows closed.
Obstacle Limitation Surfaces (OLS)	A series of surfaces that define the volume of airspace at and around an aerodrome to be kept free of obstacles in order to permit the intended aircraft operations to be conducted safely and to prevent the aerodrome from becoming unusable by the growth of obstacles around the aerodrome.
Passenger airlines / aircraft	Airlines or aircraft providing services for RPT passengers; typically, there is scope to transport freight in the cargo hold of such aircraft.
Performance Based Navigation (PBN)	A framework for defining performance requirements in 'navigation specifications'. PBN framework can be applied to an air traffic route, instrument procedure, or defined airspace. PBN provides a basis for the design and implementation of automated flight paths as well as for airspace design and obstacle clearance.
Planning day	Identified as the typical 'busy day' for airport planning purposes. There are a number of metrics used by airports to select a typical busy day for planning. For the purposes of the Joint Study, this was identified as the 30 th busiest day, to ensure considerations would accommodate the majority of services required, without overcatering for peaks such as seasonal holidays.
Precision Runway Monitor (PRM)	A radar system that enables ATC to monitor simultaneous close parallel instrument approaches to airports. Under PRM procedures, ATC uses high resolution radar (with accuracy of about one milliradian) to ensure that aircraft on final approach to different runways do not come into conflict. The reduced separation standards enable the best possible movement rates.
Procedures for Air Navigation Services – Aircraft Operations (PANS-OPS)	A set of rules set out by the International Civil Aviation Organization for designing instrument approach and departure procedures at aerodromes.
Regional passenger movements	Intrastate-NSW RPT passenger movements, that is to and from destinations within NSW. For the purpose of the Joint Study, flights between Canberra and the rest of NSW are defined as regional. Flights between Canberra and Sydney (Kingsford-Smith) Airport are defined as domestic.
Regional 'ring fence'	Provisions within the Slot Management Scheme to protect slots for intrastate NSW air services.
Regular Public Transport (RPT)	The movement of passengers or freight on a scheduled basis for a fee. For the purpose of this Report, RPT is limited to the discussion of passenger movements, with passengers on such services referred to as RPT passengers. Freight movements are considered separately.
Relative benefit cost ratio (RBCR)	In the context of the Joint Study, benefit cost analysis, providing a comparison between localities (rather than individually).

Runway mode of operation	The direction and flow of aircraft arriving and departing on the available runways, determined subject to weather conditions and/or level of traffic demand at any point in time.
Seat capacity	Number of seats available on an aircraft for sale
Separation standards	Minimum distances between aircraft to ensure safe operations, including avoiding the effects of wake turbulence from the preceding aircraft on the same route.
Slot Management Scheme	Under the <i>Sydney Airport Demand Management Act 1997</i> , allocates a specific time for flights to operate so as to minimise any bunching of demand and to ensure the airport operates with an efficient use of finite facilities thus avoiding unnecessary delay, while complying with the cap of 80 runway movements.
South West Growth Centre	A growth area defined by the NSW Government to be located within the boundaries of three local government areas: Liverpool, Camden and Campbelltown. It comprises 18 precincts, is approximately 17,000 hectares and has capacity for around 110,000 new dwellings for 300,000 people.
Stands	The physical location of an aircraft parking position for either passenger or cargo aircraft.
Station access fee	Surcharge paid by rail users when accessing airport stations. It was part of the terms and conditions agreed to by the then NSW Government when it commissioned the construction of the line.
<i>Sydney Airport Curfew Act 1995 (C'wlth)</i>	The Act and the associated regulations regulate movements at Sydney (Kingsford-Smith) Airport between 11:00pm and 6:00am each day. The Act essentially prohibits the operation of large jet aircraft at Sydney (Kingsford-Smith) Airport during this period. There are very limited exceptions.
<i>Sydney Airport Demand Management Act 1997 (C'wlth)</i>	Sets a cap of 80 movements per hour on the runway and requires that the slot management scheme is consistent with the runway movement cap. In effect, this means that 80 is the maximum for both the runway movements and slot allocation.
Sydney Control Zone	The zone is controlled airspace approximately 10 nautical miles radius around Sydney (Kingsford-Smith) Airport.
Sydney region	For the purposes of this Report, the Sydney region is defined as far north as Williamtown in the Hunter and as far south as Canberra.
Taxiways	The links between the apron areas and the runways that facilitate the movement of aircraft around the surface of the aerodrome.
Upgauging	Replacing smaller aircraft with larger aircraft within the fleet of aircraft operated by an airline. In the context of passenger aircraft, this is usually associated with increasing seats available on an aircraft.
Unconstrained forecast demand	Projections which assume no capacity limitations (that is, presuming that adequate infrastructure will be available to meet demand) (see <i>constrained demand</i>)
Value add	Value-added is the wages and profit of expenditure, removing costs to avoid double counting. It nets out cost of goods sold and other expenses e.g. rent and utilities to avoid double-counting.
Visual Flight Rules (VFR)	A set of regulations under which a pilot operates an aircraft in weather conditions generally clear enough to allow the pilot to see where the aircraft is going. The pilot must be able to operate the aircraft with visual reference to the ground, and by visually avoiding obstructions and other aircraft.
Western Sydney Employment Area	An employment area defined by the NSW Government located near the intersection of the M4 and M7 motorways and is expected to eventually accommodate some 40,000 workers.

B. Characteristics by aerodrome reference code

Aerodrome code	Aircraft wingspan	Most common routes	Aircraft examples	Approx seat capacity
Code A	Up to 15 metres	General Aviation	Cessna Citation CJ1 Cessna 340/404 Beechcraft 390/55/Beechjet	5-10
Code B	15-24 metres	Regional	Saab 340 BAe Jetstream 32 Beechcraft SKA 200	13-37
Code C	24-36 metres	Domestic	Airbus A320 Boeing 737 Bombardier Dash 8	50-213
Code D	36-52 metres	Domestic	Boeing 767	214-249
Code E	52-65 metres	International	Airbus A330 Boeing 747 Boeing 777	253-400
Code F	65-80 metres	International	Airbus A380	489
Helicopter	N/A	General Aviation	Eurocopter EC-120 Robinson 44	N/A

Source: Airservices Australia, Booz & Company analysis

C. Abbreviations and acronyms

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
ANEC	Australian Noise Exposure Concept
ANEF	Australian Noise Exposure Forecast
A-SMGCS	Advanced Surface Movement Guidance and Control System
ATC	Air Traffic Control
BCR	Benefit Cost Ratio
BITRE	Bureau of Infrastructure, Transport and Regional Economics
CASA	Civil Aviation Safety Authority
CBA	Cost Benefit Analysis
CGE	Computable General Equilibrium
COAG	Council of Australian Governments
EIS	Environmental Impact Statement
FTE	Full Time Equivalent
GA	General Aviation
GDP	Gross Domestic Product
GEC	Global Economic Corridor
GSP	Gross State Product
HSR	High Speed Rail
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
IVS	International Visitor Survey
LCC	Low Cost Carrier
LGA	Local Government Area
LTOP	Long Term Operating Plan
MTOW	Maximum Take-off Weight
NPV	Net Present Value
NSW	New South Wales
NSW BTS	NSW Bureau of Transport Statistics
NVS	National Visitor Survey
OLS	Obstacle Limitation Surfaces
PEI	Persons-Event Index
PRM	Precision Runway Monitor
RAAF	Royal Australian Air Force
RBCR	Relative Benefit Cost Ratio
RPT	Regular Public Transport
SACL	Sydney Airport Corporation Limited
SLA	Statistical Local Area
SODPROPS	Simultaneous Opposite Direction Parallel Runway Operations
VFR	Visual Flight Rules
WSEA	Western Sydney Employment Area

D. Technical papers

Paper group	Paper number	Paper title	Paper author
Volume 1			
A	1	Airport infrastructure in the Sydney region	WorleyParsons / AMPC
A	2	Aviation users: profile of aviation users in the Sydney region	BITRE
A	3	Forecast growth estimates for aviation activity in the Sydney region	Booz & Company
A	4	Variation in the realisation of identified capacity constraints	Booz & Company
Volume 2			
B	1	Sydney (Kingsford-Smith) Airport airfield capacity review	Landrum & Brown
B	2	Sydney (Kingsford-Smith) Airport additional demand and runway capacity analysis	Airservices Australia
B	3	Planning day peak spreading at Sydney (Kingsford-Smith) Airport	Booz & Company
B	4	Effect of forecast demand on the Long Term Operating Plan for Sydney (Kingsford-Smith) Airport	Airservices Australia
B	5	Effect of weather on aircraft delays at Sydney, Canberra and Newcastle Airports	Airservices Australia
B	6	Newcastle Airport planning day peak spreading	Booz & Company
B	7	Economic impact of not proceeding with additional aviation capacity in the Sydney region	Ernst & Young
B	8	Flow-on impact of delay based on passenger, aircraft and associated services at Sydney (Kingsford-Smith) Airport	Booz & Company
Volume 3			
C	1	Assessment of options for meeting aviation needs in the Sydney region	PwC
C	2	Sydney (Kingsford-Smith) Airport land transport capacity 2006–2036	Transport for NSW
C	3	Airspace requirements to support regular passenger transport operations at Bankstown Airport	Airservices Australia
C	4	Bankstown Airport and RAAF Base Richmond regular passenger transport scenarios	Airservices Australia
C	5	RPT Aviation Operations RAAF Base Richmond East West Runway Scenario	WorleyParsons/AMPC
C	6	Sydney (Kingsford-Smith) Airport current capacity and potential capacity enhancement Air traffic management implications of the civil use of RAAF Base Richmond	Airservices Australia
C	7	Effect of civil operations at RAAF Base Richmond on Sydney (Kingsford-Smith) Airport operations	Airservices Australia
C	8	Nature and extent of unmet demand that could be accommodated at an additional regular passenger transport facility	Booz & Company
C	9	RPT Aviation Operations RAAF Base Richmond North South Runway Scenarios	WorleyParsons/AMPC
Volume 4			
C	10	Airline-related cost and revenue issues at primary and non-primary airports	CAPA Consulting
C	11	Analysis of airport suitable sites: specified localities	WorleyParsons/AMPC
C	12	Report on initial location analysis: airspace considerations	Airservices Australia
Volume 5			
C	13	Aviation capacity cost benefit economic assessment	Ernst & Young
D	1	Preliminary evaluation of potential future uses of Commonwealth Land at Badgerys Creek	NSW Department of Planning and Infrastructure

E. Reference documents

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F Greenfield site analysis matrices

379

F – GREENFIELD SITE ANALYSIS MATRICES

The matrices presented in this Appendix are based on analysis undertaken by WorleyParsons/Airport Master Planning Pty Ltd (AMPC), with the purpose of providing comparative information to assess potential greenfield airport sites in the Sydney region. The matrices represent analysis that was undertaken over a number of phases and over a period of time. They are based on a limited set of data, and relate to indicative developments and site locations likely to be refined with environmental, commercial and other further assessments.

Matrix 1 Comparative assessment of localities identified in Phase 1 of the greenfield assessment process

Matrix 1 Comparative assessment of greenfield localities identified in Phase 1

		Northern Localities					Western and North-Western Localities				Sydney Basin Localities			South-Western Localities					Southern Localities
	Refer to Part 8 for maps of localities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
General Locality Attributes	Geographic locality descriptor	Ellalong	Watagan Mountains	Yengo National Park and Macpherson State Forrest	Central Mangrove - Kulnura	Central Coast	Putty Road	Newnes State Forest and Plateau	Great Western Highway	Bell's Line of Road, Bilpin	Northern Hawkesbury River valley and slopes	Ku-ring-gai National Park and surrounds	Nepean River valley and slopes	The Oaks and surrounds	Wilton - Appin and surrounds	Mittagong, Moss Vale, Berrima and surrounds	North and south of the F5 between Goulburn and Marulan	North and south of the F5 between Marulan and Illawarra Highway Junction	West of Kiama Bypass
	Principal local government area	Cessnock	Cessnock Lake Macquarie Wyong	Cessnock Gosford Hawkesbury	Gosford Wyong	Lake Macquarie Wyong Gosford	Hawkesbury Lithgow Singleton	Blue Mountains Lithgow	Blue Mountains Lithgow	Blue Mountains Hawkesbury	Baulkham Hills Blacktown Hawkesbury Hornsby Penrith	Hornsby Gosford Pittwater Warringah	Blue Mountains Liverpool Penrith Wollondilly	Camden Wollondilly	Campbelltown Wingecarribee Wollondilly Wollongong	Wingecarribee	Goulburn – Mulwaree Upper Lachlan Wingecarribee	Goulburn – Mulwaree Upper Lachlan	Shellharbour
	Representative significant population centres within locality	Cessnock, Ellalong	Nil	Nil	Somersby/Central Mangrove, Kulnura	Gosford Wyong, Morisset, Toronto	Nil	Lithgow, Mt Victoria	Blackheath, Katoomba and townships of the city of the Blue Mountains	Nil	Penrith, Richmond, Windsor, Hills District	Hornsby, Berowra, Terrey Hills	Glenmore Park, Luddenham, Bringelly	Oakdale and The Oaks	Wilton and Appin	Mittagong, Bowral, Berrima, Moss Vale, Bundanoon, Hilltop and Colo Vale	Marulan	Marulan	Kiama
	Key transport system/s existing within locality	Local roads	Remote from existing systems; only fire trails	Wollombi Road; Great North Road SR33; fire trails	Peats Ridge Road (SH36); George Downes drive (33)	F3 Sydney-Newcastle Freeway; Pacific Highway; Main North Railway	Putty Road	Bells Line of Road; fire trails	Great Western Highway; Main Western Railway	Bells Line of Road	M7 Western Sydney Orbital; Bells Line of Road; Windsor Road; Blacktown Road; Putty Road; Old Northern Road; Richmond Railway Line	F3 Sydney-Newcastle Freeway (SH1); Pacific Highway (SH83); Mona Vale Road; Main North Railway	M4 Western Motorway; M7 Sydney Western Orbital; The Northern Road ; Elizabeth Drive; Bringelly Road	Burragarang Road; Montpellier Road; Silverdale Road	F5 Hume (South Western) Freeway; Main Southern Railway	F5 Hume (South Western) Freeway; Illawarra Highway; Main Southern Railway	F5 Hume (South Western) Freeway; Main Southern Railway	F5 Hume (South Western) Freeway; Main Southern Railway	Princes Highway (SH1) Illawarra Railway
	Approximate size of locality (ha)	4,413	6,062	24,288	17,892	28,618	30,113	28,513	14,768	4,683	56,704	7,755	22,083	17,712	23,524	102,521	52,165	45,763	4,633
	General terrain description	Open rural land in undulating valley	Heavily dissected montane plateau with some long linear ridge lines	Heavily dissected montane plateau with some long linear ridge lines	Dissected montane plateau with some open, undulating rural land along long linear ridge lines	Undulating coastal plain with some areas of higher ground, with some areas of dissected montane plateau	Heavily dissected montane plateau with some long linear ridge lines	Heavily dissected montane plateau with some long linear ridge lines	Ridge line between major mountain valleys; dissected montane plateau with some open, undulating terrain along long linear ridge lines	Ridge line between major mountain valleys; dissected montane plateau with some open, undulating terrain along long linear ridge lines	Broad river valley with open rural land and gently undulating terrain in the west rising to higher ground in the east	Heavily dissected montane plateau with some long linear ridge lines	Broad river valley and gently undulating terrain to the east of the Nepean River with higher ground rising west from the river	Undulating plateau with open rural land - dissected rural land to the east and rising rugged forested terrain to the west	Heavily dissected montane plateau with open rural land and some long linear ridge lines adjoining the deep gorges of the major rivers	Cleared and open rural land on undulating hill slopes, with some river gorges and some forested higher ground	Cleared and open rural land on undulating hill slopes with some river gorges and some forested higher ground	Cleared and open rural land on undulating hill slopes with some river gorges and some forested higher ground	Cleared and open rural land on undulating hill slopes
	Typical elevation: above mean sea level (MSL)	~130 – 160m	~350 – 450m	~200 – 300m	~150 – 340m	~10 – 50m on coasta plain	~250 – 450m	~1,000 – 1,100m	~190 (Glenbrook) – 1,070 (Mt Victoria) m	~650 – 750m	~5 – 50m and up to 200 m on ridge lines	~100 – 200m on ridge lines	~40 – 100m on the eastern side with terrain rising to ~200m on the western side	~180 – 300m	~ 200m rising to 300m in the southeast	~600 – 750m	~600 – 750m	~600 – 700m	~10m to the north rising to 200m in the south
	Major river systems present	Sandy Creek	Many creeks	Many creeks	Many tributary creeks of the Macdonald River and Mangrove Creek	Narara, Ourimbah, Wyong, Dora, Wallarah, Wyee Creeks and tributaries flowing to the Central Coast lake system	Large number of tributary creeks to the MacDonald and Colo River Systems	Large number of tributary creeks to the MacDonald and Cox's River systems	Large number of tributary creeks to the Grose and Cox's River systems	Large number of tributary creeks to the Grose and Colo River systems	Hawkesbury River, Eastern and South Creeks and tributaries	Hawkesbury River Estuary and tributary creeks	Nepean River, Oaky, Badgerys and South Creeks	Monkey and local Creeks	Nepean, Avon, Cordeaux, Cataract Rivers; Allen Creek and tributaries; Cascade Creek	Wingecarribee River, Medway Rivulet; Nattai river tributaries; Wollondilly river tributaries	Wollondilly River tributaries; Paddy's River	Wollondilly River tributaries	Jerrara and local Creeks; Minnamurra River
	Existing or nearest airport in locality	Cessnock	Nil	Nil	Warnervale (private airfield) Cooranbong (now closed)	Warnervale (private airfield) Cooranbong (now closed)	Nil	Katoomba Airfield	Katoomba Airfield	RAAF Base Richmond	RAAF Base Richmond	Nil	Camden Airport; Wallacia and St Mary's (private airfields)	The Oaks (private airfield)	Wilton Parachuting Centre; Wedderburn (private airfield)	Mittagong Airport (private airfield)	Goulburn	Goulburn	Illawarra Regional Airport (north) HMAS Albatross (south)
	Previous airport proposals (SSA = Department of Aviation 1985 Second Sydney Airport Site Selection Program: Draft Environmental Impact Statement)	Nil	Nil	Nil	Somersby (SSA)	Warnervale (SSA)	Nil	Newnes Plateau	Nil	Nil	Londonderry; Richmond; St Mary's; Marsden Park; Scheyville; Galston; Rouse Hill/Nelson (SSA)	Duffy's Forest	Badgerys Creek airport sites (SSA)	Nil	Wilton; Darkes Forest (further to east and not in locality) (SSA)	Wells Creek (SSA)	Goulburn (SSA)	Goulburn (SSA)	Nil
Representative Airports Possible in Locality (OK means that, given a higher standard airport can be accommodated, it is assumed airport smaller Type may also be accommodated)	Airport Type 1 Runway/s; Site name (site number for reference purposes); Runway alignment	1 x 4000m Ellalong (1) 10/28	No airport sites identified	No airport sites identified	2 x 4000m Kulnura (4) 12/30 1 x 4000m Priests Ridge (5) 14/32 2 x 4000m Mangrove Mountain (7) 11/29 1 x 4000m Peats Ridge (8) 17/35	2 x 4,000m Somersby (9) 18/36	No airport sites identified	1 x 4,000m Wollongambe (31) 12/30	No airport sites identified	No airport sites identified	1 x 4,000m Wilberforce (10) 09/27	No airport sites identified	1 x 4,000m and 1 x 2,500m Luddenham (12) 01/19 2 x 4,000m Bringelly (13) 03/21 1 x 4,000m and 1 x 2,500m Badgerys Creek (21) 05/23	1 x 4,000m The Oaks (14) 17/35 1 x 4,000m Silverdale (16) 17/35	1 x 4,000m and 1 x 3,500m Wilton (15) 06/24 1 x 3,500m Appin (17) 14/32	2 x 4,000m Belanglo (19) 03/21 2 x 4,000m Sutton Forest (20) 17/35	3 x 4,000m Marulan (18) 17/35	1 x 4,000m Towrang (28) 04/22	No airport sites identified
	Airport Type 2 Runway/s; Site name (site number for reference purposes); Runway alignment	OK	No airport sites identified	No airport sites identified	OK	1 x 3000m Cooranbong (2) 01/19	No airport sites identified	OK	No airport sites identified	No airport sites identified	OK	No airport sites identified	OK	OK	OK	OK	OK	OK	1 x 3,000m Kiama (29) 16/34
	Airport Type 3 Runway/s; Site name (site number for reference purposes); Runway alignment	OK	1 x 2,500m Watagan Forest Road (33) 15/33	1 x 2,200m Bucketty (30) 11/29 1 x 2,500m Mt Manning (27) 17/35	OK	1 x 2,500m Wyee (3) 03/21	1 x 2,600m Mile Ridge (23) 08/26 1 x 2,500m Mellong (25) 18/36	1 x 2,500m Sunnyside Ridge (32) 01/19	1 x 2,500m Mount Victoria (34) 17/35 1 x 2,500m Blackheath (24) 04/22	1 x 2,500m Warawalong (26) 16/34	1 x 2,500m West Portland (22) 06/24	No airport sites identified	OK	OK	OK	OK	OK	OK	OK
	Airport Type 4 Runway/s	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	No airport sites identified	OK	OK	OK	OK	OK	OK	OK
	Other sites possible? (No, Probably not, Possibly yes, Yes)	No	Possibly yes	Possibly yes	Possibly yes	Yes	Yes	Yes	Yes	Yes	Yes	Probably not	Yes	Yes	Yes	Yes	Yes	Yes	Probably not

		Northern Localities					Western and North-Western Localities				Sydney Basin Localities			South-Western Localities					Southern Localities	
	Refer to Part 8 for maps of localities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Primary Criterion 1 – Capacity Created	Aircraft movements	Ellalong (1) up to 50 per hour or 240,000 pa	Watagan Forest Road (33) A up to 50 per hour or 240,000 pa	Bucketty (30) up to 50 per hour or 240,000 pa Mt Manning (27) up to 50 per hour or 240,000 pa	Kulnura (4) – up to 100 per hour or 370,000 pa Priests Ridge (5) – up to 50 per hour or 240,000 pa Mangrove Mountain (7) – up to 100 per hour or 370,000 pa Peats Ridge (8)– up to 50 per hour or 240,000 pa	Somersby (9)– up to 100 per hour or 370,000 pa Cooranbong (2) – up to 50 per hour or 240,000 pa Wyee (3) – up to 50 per hour or 240,000 pa	Mile Ridge (23) – up to 50 per hour or 240,000 pa Mellong (25) – up to 50 per hour or 240,000 pa	Wollongambe (31) – up to 50 per hour or 240,000 pa Sunnyside Ridge (32) – up to 50 per hour or 240,000 pa	Mount Victoria (34) – up to 50 per hour or 240,000 pa Blackheath (24) – up to 50 per hour or 240,000 pa	Warawalong (26) – up to 50 per hour or 240,000 pa	Wilberforce (10)– up to 50 per hour or 240,000 pa West Portland (22) – up to 50 per hour or 240,000 pa	No airport sites identified	Luddenham (12)– up to 100 per hour or 370,000 pa; Bringelly (13) – up to 100 per hour or 370,000 pa Badgerys Creek (21)– up to 100 per hour or 370,000 pa	The Oaks (16)– up to 50 per hour or 240,000 pa Silverdale (14) – up to 50 per hour or 240,000 pa	Wilton (15) – up to 100 per hour or 370,000 pa Appin (17) – up to 50 per hour or 240,000 pa	Belanglo (19) – up to 100 per hour or 370,000 pa Sutton Forest (20) – up to 100 per hour or 370,000 pa	Marulan (18) – up to 130 per hour or 500,000 pa	Towrang (28) – up to 50 per hour or 240,000 pa	Kiama (29) – up to 50 per hour or 240,000 pa	
	Passengers (Based on Sydney Airport Master Plan 2029 passenger forecasts and different fleet mix assumptions)	Ellalong (1) – up to 46.8 million pa (based on passengers per aircraft mix of 195.) 31 million (based on 130 passengers per aircraft)	Watagan Forest Road (33) – up to 33 million pa (based on 140 passengers per aircraft mix). 19 million (based on 80 passengers per aircraft)	Bucketty (30) – up to 33 million pa (based on 140 passengers per aircraft mix.) 19 million (based on 80 passengers per aircraft) Mt Manning (27) – up to 33 million pa (based on 140 passengers per aircraft mix.) 19 million (based on 80 passengers per aircraft)	Kulnura (4) – up to 72 million pa (based on passengers per aircraft mix of 195.) 48 million pa (based on 130 passengers per aircraft). Priests Ridge (5) – up to 46.8 million pa (based on passengers per aircraft mix of 195.) 31 million pa (based on 130 passengers per aircraft) Mangrove Mountain (7) – up to 72 million pa (based on passengers per aircraft mix of 195). 48 million pa (based on 130 passengers per aircraft) Peats Ridge (8) – up to 46.8 million pa (based on passengers per aircraft mix of 195.) 31 million pa (based on 130 passengers per aircraft)	Somersby (9) – up to 72 million pa (based on passengers per aircraft mix of 195.) 48 million pa (based on 130 passengers per aircraft) Cooranbong (2) – up to 46.8M pa (based on passengers per aircraft mix of 195.) 31 million pa (based on 130 passengers per aircraft) Wyee (3) – up to 33 million pa (based on 140 passengers per aircraft mix). 19 million pa (based on 80 passengers per aircraft)	Mile Ridge (23) – up to 33 million pa (based on 140 passengers per aircraft mix.) 19 million pa (based on 80 passengers per aircraft) Mellong (25) Passengers – up to 33 million pa (based on 140 passengers per aircraft mix.) 19 million (based on 80 passengers per aircraft) (See note)	Wollongambe (31) – up to 46.8 million pa (based on passengers per aircraft mix of 195). 31 million pa (based on 130 passengers per aircraft) Sunnyside Ridge (32) – up to 33 million pa (based on 140 passengers per aircraft mix.) 19 million pa (based on 80 passengers per aircraft) (See note)	Mount Victoria (34) – up to 33 million pa (based on 140 passengers per aircraft mix.) 19 million (based on 80 passengers per aircraft) Blackheath (24) – up to 33 million pa (based on 140 passengers per aircraft mix.) 19 million pa (based on 80 passengers per aircraft) (See note)	Warawaralong (26) – up to 33 million pa (based on 140 passengers per aircraft mix.) 19 million pa (based on 80 passengers per aircraft) (See note)	Wilberforce (10) – up to 46.8 million pa (based on passengers per aircraft mix of 195.) 31 million pa (based on 130 passengers per aircraft) West Portland (22) – up to 33 million pa (based on 140 passengers per aircraft mix.) 19 million pa (based on 80 passengers per aircraft)	No airport sites identified	Luddenham (12) – up to 72 million pa (based on passengers per aircraft mix of 195.) 48 million pa (based on 130 passengers per aircraft) Bringelly (13) – up to 72 million pa (based on passengers per aircraft mix of 195.) 48 million pa based on (130 passengers per aircraft) Badgerys Creek (21)– up to 65 million pa (based on passengers per aircraft mix of 195 on long runway and 140 passengers per aircraft mix on short runway (i.e. Type 1 plus Type 3).) 42 million pa (based on 130 passengers per aircraft on long runway and 80 passengers per aircraft on short runway)	The Oaks (16) – up to 46.8 million pa (based on passengers per aircraft mix of 195.) 31 million based on 130 passengers per aircraft Silverdale (14) – up to 46.8 million pa (based on passengers per aircraft mix of 195.) 31 million pa (based on 130 passengers per aircraft)	Wilton (15) – up to 72 million pa (based on passengers per aircraft mix of 195.) 48 million at 130 passengers per aircraft Appin (17) – up to 46.8 million pa (based on passengers per aircraft mix of 195.) 31 million pa (based on 130 passengers per aircraft)	Belanglo (19) – up to 72 million pa (based on passengers per aircraft mix of 195.) 48 million based on 130 passengers per aircraft Sutton Forest (20) – up to 72 million pa (based on passengers per aircraft mix of 195.) 48 million pa (based on 130 passengers per aircraft)	Marulan (18) – up to 97.5 million (based on passengers per aircraft mix of 195.) 65 million pa (based on 130 passengers per aircraft)	Towrang (28) – up to 46.8 million pa (based on passengers per aircraft mix of 195.) 31 million pa (based on 130 passengers per aircraft)	Kiama (29) – up to 46.8 million pa (based passengers per aircraft mix of 195.) 31 million pa (based on 130 passengers per aircraft)	
	Note: The higher elevation associated with the location may require a greater runway length for a given payload, compared to a location at a lower elevation. From a safety and efficiency perspective, locations in less mountainous terrain would be preferred.																			
	Ability to expand capacity in the future	Ellalong (1) Nil	Watagan Forest Road (33) Nil	Bucketty (30) Nil Mt Manning (27) Nil	Kulnura (4) Nil Priests Ridge (5) Nil Mangrove Mountain (7) Nil Peats Ridge (8) Nil	Somersby (9) Nil Cooranbong (2) Nil Wyee (3) Nil	Mile Ridge (23) Nil Mellong (25) Nil	Wollongambe (31) Nil Sunnyside Ridge (32) Nil	Mount Victoria (34) Nil Blackheath (24) Nil	Warawaralong (26) Nil	Wilberforce (10) Nil West Portland (22) - Nil	No airport sites identified	Luddenham (12) Possibly yes - 3 rd runway Bringelly (13) Possibly yes - 3 rd runway Badgerys Creek (21) Possibly yes - 3 rd runway	The Oaks (16) Nil Silverdale (14) Nil	Wilton (15) Nil Appin (17) Nil	Belanglo (19) Nil Sutton Forest (20) Probably	Marulan (18)Already 3 runways	Towrang (28) Nil	Kiama (29) Nil	
	Note: Nil capacity to expand relates to the representative airport in the ultimate configuration as nominated above on the nominated site only. It may or may not be possible to find a new and larger site elsewhere in the locality. It may be possible to commence with an airport at that site of a lower standard than that nominated and stage development.																			

		Northern Localities					Western and North-Western Localities				Sydney Basin Localities			South-Western Localities					Southern Localities
	Refer to Part 8 for maps of localities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Primary Criterion 2 - Accessibility	Kilometres to connect locality reference point to existing rail links	27 km from Maitland Station and 32 km from Awaba station both on Main North Line	22 km from Morisset Station on Main North Line	63 km to Wyong Station on Main North Line and 75 km from Windsor Station on Richmond Line	17 km from Narara Station on Main North Line	2 km from Morisset Station on Main North Line	62 km from Windsor Station on Richmond Line	2 km from Newnes Junction Station on Main Western Railway	0 km from Wentworth Falls Station on Main Western Railway	28 km from Richmond Station on Main Western Railway	8 km from Windsor Station on Richmond Line	22 km from Pymble Station on North Shore Line	19 km from planned Leppington Station on South West Rail Link	20 km from Menangle Park Station and 25 km from Macarthur station on Main South Railway	12 km from Douglas Park Station on Main South Railway	Station on Main South Railway	Station on Main South Railway	Station on Main South Railway	<1 km from Kiama Station on Illawarra Line
	Rail connection difficulty: - Very remote >20 kms - Remote >10 kms - Proximate < 10kms - Very proximate < 5 kms Terrain difficulty: - Very difficult - Difficult - Relatively easy - Easy	Very remote Terrain very difficult Significant capacity constraint on Main North Line at Cowan Bank	Very remote Terrain very difficult Significant capacity constraint on Main North Line at Cowan Bank	Very remote Terrain very difficult Crossing of Hawkesbury River may be needed and duplication of Richmond Line	Remote Terrain very difficult Significant capacity constraint on Main North Line at Cowan Bank	Proximate Terrain difficult for Somersby – relatively easy for Cooranbong and Wyee Significant capacity constraint on Main North Line at Cowan Bank	Very remote Terrain very difficult Crossing of Hawkesbury River needed and duplication of Richmond Line	Proximate Terrain difficult Can be connected to Main West Railway which has capacity for additional four trains per hour	Proximate/very proximate Terrain difficult Can be connected to Main West Railway which has capacity for additional four trains per hour	Very remote Terrain very difficult Crossing of Hawkesbury River needed and duplication of Richmond Line	Remote/proximate 50 % of locality = very difficult 50% of locality = relatively easy Crossing of Hawkesbury River and full duplication of Richmond Line	Proximate Very difficult Urban areas and difficult terrain en route, with connection to existing at Pymble on 2.5% grade	Remote/proximate Relatively easy if connected to Extension of South West Rail Link Difficult if connected to Main West - Urban areas en route	Remote Difficult Areas of concern to connect to Menangle Park: Crossing Navigation Creek and Foot Onslow Creek, as well as Nepean River Areas of concern to connect to Macarthur station: Crossing Nepean River, Mount Annan Botanic Garden and Hume Highway	Proximate Relatively easy if incomplete existing alignment for Maldon - Dombarton line adopted	Proximate Relatively easy Main Southern Railway does not have sufficient capacity to serve a new airport	Proximate Relatively easy Main Southern Railway does not have sufficient capacity to serve a new airport	Proximate Relatively easy Main Southern Railway does not have sufficient capacity to serve a new airport	Very Proximate Relatively easy Single track railway between Kiama and Coniston needs duplication
	Capacity of the rail links and requirements for additional capacity	Requirements for providing additional capacity for 4 trains per hour A tunnel between Hawkesbury River and Berowra, due to the limit of capacity in Cowan Bank on Main Northern Railway	Requirements for providing additional capacity for 4 trains per hour A tunnel between Hawkesbury River and Berowra, due to the limit of capacity in Cowan Bank on Main Northern Railway	Requirements for providing additional capacity for 4 trains per hour On Main North Line: a tunnel between Hawkesbury River and Berowra, due to the limit of capacity in Cowan Bank on Main Northern Railway Or if connected to Richmond Line: duplication of Richmond Line If Western Express project goes ahead, there will not be capacity issues on the Western Line	Requirements for providing additional capacity for 4 trains per hour A tunnel between Hawkesbury River and Berowra due to the limit of capacity in Cowan Bank on Main Northern Railway	Requirements for providing additional capacity for 4 trains per hour A tunnel between Hawkesbury River and Berowra due to the limit of capacity in Cowan Bank on Main Northern Railway	Requirements for providing additional capacity for 4 trains per hour Duplication of Richmond Line If Western Express project goes ahead, there will not be capacity issues on the Western Line	Enough capacity for additional 4 trains per hour on the line Re-signalling and electrification If Western Express project goes ahead, there will not be capacity issues on the Western Line	Enough capacity for additional 4 trains per hour on the line Re-signalling and electrification If Western Express project goes ahead, there will not be capacity issues on the Western Line	Requirements for providing additional capacity for 4 trains per hour Duplication of Richmond Line If Western Express project goes ahead, there will not be capacity issues on the Western Line	Requirements for providing additional capacity for 4 trains per hour Duplication of Richmond Line With Western Express project going ahead there will not be capacity issues on the Western Line	Requirements for providing additional capacity for 4 trains per hour Quadruplication on North Shore Line Second harbour crossing	Requirements for providing additional capacity for 4 trains per hour Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification	Requirements for providing additional capacity for 4 trains per hour on the Main South Line Southern Sydney Freight Line needs to be in place as part of quadruplication to Glenfield Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification	Requirements for providing additional capacity for 4 trains per hour on the Main South Line Southern Sydney Freight Line needs to be in place as part of quadruplication to Glenfield Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification New refuges south of Macarthur	Requirements for providing additional capacity for 4 trains per hour on the Main South Line Southern Sydney Freight Line needs to be in place as part of quadruplication to Glenfield Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification New refuges south of Macarthur	Requirements for providing additional capacity for 4 trains per hour on the Main South Line Southern Sydney Freight Line needs to be in place as part of quadruplication to Glenfield Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification New refuges south of Macarthur	Requirements for providing additional capacity for 4 trains per hour on the Main South Line Southern Sydney Freight Line needs to be in place as part of quadruplication to Glenfield Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification New refuges south of Macarthur	Requirements for providing additional capacity for 4 trains per hour on the Illawarra Line Duplication of single track railway between Kiama Re-signalling and electrification
	Kilometres to connect locality reference point to existing designated state roads/highways	28 km to Sydney Newcastle Freeway (F3)	18 km to Sydney Newcastle Freeway (F3)	60 km to Sydney Newcastle Freeway (F3) and 93 km to M7 Motorway	12 km to Sydney Newcastle Freeway (F3)	<5 km to Sydney Newcastle Freeway (F3)	80 km to M7 Motorway	18 km to Great Western Highway	0 km to Great Western Highway	47 km to M7 Motorway	24 kms to M7 Motorway	17 kms to M2 Motorway 16kms to F3 Freeway	15 kms to M7 Motorway	26 kms to Hume Highway	9 kms to Hume Highway	<5 kms to Hume Highway	<5 kms to Hume Highway	<5 kms to Hume Highway	3 kms to Princes Highway
	Road connection difficulty to freeway system: - Very remote >20 km - Remote >10 km - Proximate < 10km - Very proximate < 5km Terrain difficulty: - Very difficult - Difficult - Relatively easy - Easy	Very remote Terrain difficult Areas of concern: Sugarloaf range and Watagan National Park (the average speed on the existing connection is 55 km/h)	Remote Terrain very difficult (ascending Watagan Mountains) Areas of concern: Dora Pinnacle, Martinsville Hill and Watagan National Park (average speed of 25 km/h on Watagan Forest Road)	Very remote Terrain very difficult Areas of concern for northern connection: Mongo Creek, Hunter Range Areas of concern for M7 connection: Yengo National Park, Hawkesbury River (average speed of 50 km/h on Wollombi Road)	Remote Terrain relatively easy Representative sites are close to main roads which would require upgrading	Very proximate Terrain relatively easy Areas of concern: Hunter Range, Ourimbah State Forest and Somersby residential area	Remote Difficult Areas of concern: Putty Road on a poor alignment; Hawkesbury River, Comleroy State Forest, Wolllemi National Park	Remote Very difficult Areas of concern: Blue Mountains National Park and heights With Great Western Highway being upgraded there will be enough capacity for the generated traffic	Very proximate N/A With Great Western Highway being upgraded there will be enough capacity for the generated traffic	Very proximate Relatively easy Areas of concern: winding alignments on Bells Line of Road; Hawkesbury River, Kurrajong Heights, Hills and North Richmond residential areas	Proximate (Richmond Windsor) Very Remote (beyond Richmond/Windsor) Relatively Easy Areas of concern: Road system beyond Richmond Windsor; upgrading roads to Richmond/Windsor; Hawkesbury River, Windsor and Riverstone residential	Proximate (Mona Vale Road) Very remote (to Freeway) Terrain Relatively Easy Areas of concern: upgrade Mona Vale Road and connections to freeway system; Ku-Ring-Gai National Park, St Ives, Gordon and Pymble residential areas	Remote (freeway system) Very proximate (major roads e.g. The Northern Road) Easy Areas of concern: average speed on the connecting road is 60 km/h	Very remote (freeway system) Very proximate (major roads e.g. Burragorang Road) Easy The average speed on the connecting road is 60 km/h Areas of concern: Splitters Gully, Flaggy Creek, Nepean River, Camden South residential area and Mount Annan residential area	Very proximate Easy Areas of concern: The average speed on the connecting road is 50 km/h Areas of concern: capacity of exit and entrance ramps from and to Douglas Park Road	Very proximate (though this is a large locality and remote sites could be found) Easy to relatively easy	Very proximate (though this is a large locality and remote sites could be found) Easy to relatively easy	Very proximate (though this is a large locality and remote sites could be found) Easy to relatively easy	Very proximate Easy to relatively easy

		Northern Localities					Western and North-Western Localities				Sydney Basin Localities			South-Western Localities					Southern Localities
	Refer to Part 8 for maps of localities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Primary Criterion 3 - Commercial opportunities	Existing employment land	Zone 3 – 0ha Zone 4 – 0ha	Zone 3 – 0ha Zone 4 – 0ha	Zone 3 – 0ha Zone 4 – 0ha	Zone 3 – 0ha Zone 4 – 0ha	Zone 3 – 0ha Zone 4 – 287ha	Zone 3 – 0ha Zone 4 – 1,700ha	Zone 3 – 0ha Zone 4 – 0ha	Zone 3 – 0ha Zone 4 – 0ha	Zone 3 – 0ha Zone 4 – 0ha	Zone 3 – 50 ha Zone 4 – 662 ha	Zone 3 – 12 ha Zone 4 – 6 ha	Zone 3 – 12 ha Zone 4 – 137 ha	Zone 3 – 0 ha Zone 4 – 0 ha	Zone 3 – 6 ha Zone 4 – 0 ha	Zone 3 – 81 ha Zone 4 – 425 ha	Zone 3 – 0 ha Zone 4 – 0 ha	Zone 3 – 0 ha Zone 4 – 0 ha	Zone 3 – 50 ha Zone 4 – 87 ha
	Potential employment land	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 62ha	Potential Employment Land – 0ha	Potential Employment Land – 1,062ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha	Potential Employment Land – 0ha
	Land capable of being converted to employment lands zoned (1) Rural (6) Public Open Space (7) Environment Protection (8) National Park	Rural – 3,950ha Open Space – 81ha Environment Protection – 0ha National Park – 0ha	Rural – 4,725ha Open Space – 0ha Environment Protection – 0ha National Park – 456ha	Rural – 4,487ha Open Space – 0ha Environment Protection – 0ha National Park – 18,281ha	Rural – 6,987ha Open Space – 2,537ha Environment Protection – 325ha National Park – 7,387ha	Rural –13,531ha Open Space – 4,437ha Environment Protection – 4,944ha National Park – 25ha	Rural –3,587ha Open Space – 1,319ha Environment Protection – 10,150ha National Park – 419ha	Rural –394ha Open Space – 187ha Environment Protection – 0ha National Park – 675ha	Rural –0ha Open Space – 6ha Environment Protection – 0ha National Park – 3,537ha	Rural –0ha Open Space – 0ha Environment Protection – 1,419ha National Park – 3,094ha	Rural – 36,206ha Open Space – 1,794ha Environment Protection – 6,287ha National Park – 2,831ha	Rural – 656ha Open Space – 3,581ha Environment Protection – 56ha National Park – 31ha	Rural – 12,556ha Open Space – 256ha Environment Protection – 19ha National Park – 419ha	Rural – 4,137ha Open Space – 19ha Environment Protection – 1,200ha National Park – 11,862ha	Rural – 5,694ha Open Space – 200ha Environment Protection – 969ha National Park – 15,694ha	Rural – 39,887ha Open Space – 975ha Environment Protection – 32,944ha National Park – 18,894ha	Rural – 48,212ha Open Space – 87ha Environment Protection – 675ha National Park – 0ha	Rural – 43,044ha Open Space – 0ha Environment Protection – 0ha National Park – 281ha	Rural – 831ha Open Space – 394ha Environment Protection – 1,175ha National Park –0ha
		Total 4,031	Total 5,181	Total 22,769	Total 17,237	Total 22,937	Total 15,475	Total 1,256	Total 3,544	Total 4,592	Total 47,119	Total 4,325	Total 13,250	Total 17,219	Total 22,556	Total 92,700	Total 48,975	Total 43,325	Total 2,400
	Note: Existing employment land is land currently zoned (3) Commercial; and (4) Industrial. Whist Zone (1) Rural (5) Special Use may contain employment opportunities, for the purpose of this project it has not been included in the employment land calculations. Note: Potential employment land includes investigation areas as identified in the Sydney Metropolitan Strategy 2036 (NB draft subregional strategies will be included when finalised).																		
Primary Criterion 4 - Proximity of Users	Average raw road travel time (2010) – Ermington (ABS 2010 Sydney Statistical Division centre of population) to locality reference point	116	113	111	64	76	100	99	68	64	48	49	39	68	62	81	102	115	102
	Average raw rail travel time (2010) from Parramatta to nearest station to locality (See note)	195	95	35	105	100	35	145	85	45	35	60	45	65	70	115	150	160	160
	Proportion and number of residents with a faster travel time to the locality than to Sydney (Kingsford-Smith) Airport (Of total of 4,470,155 people)	15% 682,402	15% 682,127	15% 665,105	17% 752,276	15% 684,231	4% 186,580	3% 136,968	6% 250,044	7% 297,894	32% 1,430,219	23% 1,034,043	28% 1,241,975	8% 351,603	9% 413,279	4% 164,980	4% 156,880	2% 73,187	6% 269,208
	Rank of localities in terms of size of population being closer than Sydney (Kingsford-Smith) Airport (See note)	6	7	8	4	5	14	17	13	11	1	3	2	10	9	15	16	18	12
	Attractiveness Index: i) actual average road travel speed ii) adjusted for different average speeds (Note: Sydney (Kingsford-Smith) Airport = 95)	i) 44 ii) 46	i) 53 ii) 54	i) 59 ii) 57	i) 66 ii) 70	i) 54 ii) 62	i) 50 ii) 52	i) 44 ii) 49	i) 54 ii) 65	i) 58 ii) 71	i) 80 ii) 81	i) 85 ii) 83	i) 79 ii) 81	i) 63 ii) 75	i) 65 ii) 75	i) 46 ii) 59	i) 29 ii) 42	i) 18 ii) 30	i) 47 ii) 52
	Ranking by locality attractiveness, assuming actual average road travel speed (Note: Sydney (Kingsford-Smith) Airport = 1)	16	12	8	5	10	13	17	11	9	3	2	4	7	6	15	18	19	14
	Ranking by locality attractiveness, adjusted for different average road speeds (Note: Sydney (Kingsford-Smith) Airport = 1)	17	13	12	8	10	14	16	9	7	4	2	3	5	6	11	18	19	15
	Note 1: As the attractiveness measure was based on distance-based data rather than time, and there are marked differences in the average speeds of travel along the major radial arterial roads leading away from Sydney, an adjustment was made. This was in the form of a reduction of distance along the travel path from Ermington to each locality, equivalent to the additional distance that could be travelled towards that locality as compared to travel to Sydney (Kingsford-Smith) Airport — in effect making those localities relatively closer to Ermington – this is an approximate way of compensating for the differences in average travel and generally has the effect of improving that locality's Attractiveness Index, particularly for those localities which are astride the major road system. Note 2: Ranking of localities is against one to another, not in comparison to Sydney (Kingsford-Smith) Airport which has by far the largest population for whom it is the closest locality. Note 3: For raw rail times, many localities are remote from a railway station hence additional time for non-rail component must be considered.																		

		Northern Localities					Western and North-Western Localities				Sydney Basin Localities			South-Western Localities					Southern Localities
	Refer to Part 8 for maps of localities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Primary Criterion 5 – Restrictions Due Nature of Sites	Key restrictions on airport development Note: Takeoff and approach surfaces only assessed against terrain using 1:25,000 topographic maps (various survey dates)	Ellalong (1) – Major Terrain Obstacle limitation surface infringement at eastern approach near Sugarloaf Range – further assessment required. Minor terrain infringement at outermost western approach near Millfield.	Watagan Forest Road (33) - Minor Overhead high voltage power lines in south east approach and horizontal section. Preliminary assessment indicates no OLS terrain infringements.	Bucketty (30) – Minor Overhead high voltage power lines in south east approach horizontal section. Preliminary assessment indicates no OLS terrain infringements. Mt Manning (27) – Major Overhead high voltage power lines in south approach. Terrain OLS infringements on both north and south approaches will require further assessment.	Kulnura (4) - Minor Power lines in south east and north west approach. Removed from Sydney Newcastle oil and gas pipelines. Preliminary assessment indicates no OLS terrain infringements. Priests Ridge (5) - Moderate Overhead power line at southern end of airport needs relocation or undergrounding. Minor OLS terrain infringement at northern runway end requires earthworks. Mangrove Mountain (7) -Moderate Two power lines need to be undergrounded or relocated. Very minor OLS terrain infringement in the north west approach of the southern runway. Peats Ridge (8) - Moderate Overhead 330kV power lines on the north east and south west approach some 7 kms from the runway ends. Minor terrain OLS infringements on the north east approach. This may require some earthworks	Cooranbong (2) – No Restriction Proximity to Eraring Power Station to the east. Close to Sydney Newcastle oil and gas pipelines. Trunk cables across site. Wyee (3) - Moderate Proximity to Eraring Power Station to the east and possible danger area needs to be assessed. Close to Sydney Newcastle oil and gas pipelines. Close to the Main Northern Railway. Anticipated minor OLS terrain infringements for south west approach. Somersby (9) - Moderate Two power lines need to be relocated and undergrounded. The Sydney Newcastle oil and gas pipelines run immediately to the east of the airport. Preliminary assessment indicates a very minor OLS terrain infringement on the north west approach of the western runway.	Mile Ridge (23) - Minor Overhead high voltage power lines in west approach. Major terrain infringement in horizontal section of west approach. Further assessment is required. Mellong (25) - Major Overhead power lines in south approach and to the east of the runway. Preliminary assessment indicates no OLS terrain infringements. Caution: Notwithstanding it may be physically possible to site a runway/airport in these locations which meets the prescribed geometric requirements, there could be significant and as yet unassessed meteorological issues associated with conducting aircraft operations. These would include matters such as mechanical turbulence, wind shear potential and the propensity for fog events.	Wollangambe (31) – Major Preliminary assessment indicates no OLS terrain infringements Sunnyside Ridge (32) – Major Major overhead high voltage power lines to Wallerawang Power Station in horizontal section of south west approach require further investigation. This approach is also over the Marrangaroo Restricted Area R520 (Army Explosives Demolition Facility) which is assumed will be relocated. Preliminary assessment indicates no OLS terrain infringements. Height of Wallerawang Power Station stacks needs to be further investigated in regard to the OLS horizontal surface and also in regard to the impact of the stack's exhaust plumes in accordance with Civil Aviation Safely Authority guidelines. Caution: Notwithstanding it may be physically possible to site a runway/airport in these locations which meets the prescribed geometric requirements, there could be significant and as yet unassessed meteorological issues associated with conducting aircraft operations. These would include matters such as mechanical turbulence, wind shear potential and the propensity for fog events.	Mt Victoria (34) – Major Overhead high voltage power line in north approach. Terrain OLS infringements in south approach. Further assessment is required. Blackheath (24) – Major Overhead high voltage power line traverses the site. Requires relocation or undergrounding. Preliminary assessment indicates no OLS terrain infringements. Caution: Notwithstanding it may be physically possible to site a runway/airport in this location which meets the prescribed geometric requirements, there could be significant and as yet unassessed meteorological issues associated with conducting aircraft operations. These would include matters such as mechanical turbulence, wind shear potential and the propensity for fog events.	Warawaralong (26) – Minor Overhead power lines traverse the airport site and require undergrounding or relocation; Preliminary assessment indicates no OLS terrain infringements Caution: Notwithstanding it may be physically possible to site a runway/airport in this location which meets the prescribed geometric requirements, there could be significant and as yet unassessed meteorological issues associated with conducting aircraft operations. These would include matters such as mechanical turbulence, wind shear potential and the propensity for fog events.	Wilberforce (10) - Major Three overhead HV powerlines in east approach and one in west approach require further investigation. Terrain OLS infringement in horizontal sections of east approach and west approaches, subject to further assessment. West Portland (22) - Minor Overhead HV powerlines in east approach and west approach require further investigation. Preliminary assessment indicates no OLS terrain infringements.	No airport sites identified	Luddenham (12) – Major Assumes Defence establishment for explosives at Orchard Hills is relocated and associated danger area extinguished. Overhead power lines in eastern and western approaches. Terrain OLS infringement in horizontal section of western approach of northern runway. Further assessment is required. Bringelly (13)- Major Overhead high voltage power lines on airport site and in west and east approaches of northern runway will need to be relocated or undergrounded. In designing PANS-OPS it is possible that Orchard Hills establishment will need to be relocated. Further risk/operational assessment is required. Terrain OLS infringement in horizontal section of west approach of northern runway. Further assessment is required. Badgerys Creek (21) – Major Overhead high voltage power lines lie in the west approaches of both runways and on the northern runway alignment and will need to be relocated or undergrounded. Overhead high voltage power lines lie in the horizontal section of both east approaches and will require further investigation. Terrain OLS infringements occur in horizontal sections of the west approaches of both runways. Further assessment is required.	Silverdale (14) – Minor Power lines on north east approach. Power lines immediately east of the south west approach. Preliminary assessment indicates no OLS terrain infringements. The Oaks (16) – Minor power lines on north east approach. Power lines immediately east of the south west approach. Preliminary assessment indicates no OLS terrain infringements.	Wilton (15) - Moderate Possible OLS terrain infringement at south west approach. Appin (17) - Moderate Terrain OLS infringements on south east approach - further assessment required. High voltage power lines and radio tower infringe OLS on south east approach.	Belanglo (19) – Moderate Terrain/OLS infringement in southern approach of eastern runway, subject to further assessment. Sutton Forest (20) – Major Power line and railway line on the eastern approach, immediately north of airport is Gingenbullen mountain and to east between runways is Mt Broughton. Subject to further terrain OLS assessment.	Marulan (18) – Moderate Two overhead high voltage powerlines in north approach of all runways. Four overhead high voltage power lines in south approaches to all runways. Requires further investigation.	Towrang (28) – Moderate Overhead high voltage power lines in south east approach and horizontal section. Three terrain OLS infringements in horizontal section of south east approach require further assessment.	Kiama (29) – Major Tallawarra Power Station is in the north approach. The possible stack plume issue needs further assessment using CASA guidelines.
	• Major – Difficult terrain environment close to cliffs and mountains and with potential significant meteorological issues. Major civil works may be required. • Moderate – Local terrain OLS infringement which may need some major civil works. • Minor – Local Infrastructure (overhead power line) OLS infringement which may need relocation and civil works. • No Restriction – No terrain / OLS infringement.																		
	Comparison of representative airports based on interaction with existing air traffic management arrangements (preliminary comparison)	Ellalong (1) – Major	Watagan Forest Road (33) – Major	Bucketty (30) – Major Mount Manning (27) - Major	Kulnura (4) - Major Priests Ridge (5) – Major Mangrove Mountain (7) – Major Peats Ridge (8) – Major	Cooranbong (2) – Major Wyee (3) - Major Somersby (9) – Major	Mile Ridge (23) – Major Mellong (25) – Major	Wollangambe (31) - Major Sunnyside Ridge (32) - Major	Mount Victoria (34) - Major Blackheath (24) - Major	Warawaralong (26) - Major	Wilberforce (10) - Major West Portland (22) – Major	No airport sites identified	Luddenham (12) – Major Bringelly (13) – Major Badgerys Creek (21) – Major	Silverdale (14) – Major The Oaks (16) - Major	Wilton (15) – Major Appin (17) – Major	Belanglo (19) – Minor Sutton Forest (20) – Minor	Marulan (18) – Minor	Towrang (28) - Minor	Kiama (29) - Major
• Major - Airspace where there are significant levels of civil air transport traffic and military activity, such as around Sydney, Williamtown, Nowra and Richmond, together with their respective CTR/CTA, and operational procedures and requirements; or Restricted Areas particularly those with provisional classifications of RA3 and RA2; or Danger Areas associated with military flying training. • Minor - Airspace where there are lower levels of civil traffic and non-towered aerodromes; or Danger Areas.																			

		Northern Localities					Western and North-Western Localities				Sydney Basin Localities			South-Western Localities					Southern Localities
	Refer to Part 8 for maps of localities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Primary Criterion 6 – Noise Impact on Residents – Type 1 and 3 Airports only	Ability to avoid or mitigate noise (Not Applicable = noise sharing not considered an issue)	Runway alignment optimised to minimise noise impacts at Ellalong, Paxton and Millfield. Limited ability to minimise / avoid noise impact.	Not Applicable	Not Applicable	Kulnura Runway alignment optimised to minimise noise impact in Central Mangrove and Mangrove Mountain. Limited ability to minimise/avoid noise impact.	Cooranbong Runway alignment optimised to minimise noise impact on the Lake Macquarie areas. Limited ability to further minimise/avoid noise impact.	Not Applicable	Not Applicable	Mount Victoria Runway alignment optimised to minimise noise impact in Blackheath and Mount Victoria, limited ability to further minimise /avoid noise impact.	Not Applicable	Wilberforce Runway alignment optimised to avoid noise impact on Wilberforce, Kurrajong, Windsor and Richmond. Limited ability to minimise /avoid noise impact.	No airport sites identified.	Luddenham Runway alignment optimised to minimise the impact on Penrith and Luddenham. Limited ability to minimise /avoid noise impact.	Silverdale Runway alignment optimised to minimise impact on Silverdale and The Oaks for a Type 1 airport. Limited ability to minimize /avoid noise impact.	Wilton Runway alignment optimised to minimise noise impact on Bargo. Limited ability to further minimise/avoid noise impact.	Belanglo Runway alignment optimised to minimise noise impact on Berrima. Limited ability to further minimise/avoid noise impact.	Runway alignment optimised to minimise noise impact on residents in Marulan and Goulburn area. Limited ability to further minimise /avoid noise impact.	Runway alignment optimised to minimise impact on the Shell Harbour. Limited ability to further minimise/avoid noise impact.	
	Type 1 airports Total population within 20 (25) Australian Noise Exposure Forecast (ANEF) contour/s. (Note: all airports assumed to be single runways). (Not Applicable = noise sharing not considered an issue).	Ellalong 444 (155)	Not Applicable	Not Applicable	Kulnura – 738 (266) Priests Ridge – 616 (164) Mangrove Mountain – 592 (213) Peats Ridge – 947 (372)	Cooranbong – 4,071 (1,930) Somersby – 10,390 (5,727)	Not Applicable	Wollangambe – 61 (23)	Not Applicable	Not Applicable	Wilberforce – 5251 (1,892)	No airport sites identified.	Luddenham – 11564 (592) Bringelly – 7,024 (624) Badgerys Creek – 4,444 (1,493)	Silverdale – 2,427 (346) The Oaks – 3370 (1,342)	Wilton – 2,351 (438) Appin – 3,087 (281)	Belanglo – Not available Sutton Forest – 712 (170)	Marulan – 166 (71)	Towrang – 355 (58)	Kiama – 9,683 (585)
	Comments (ANEF contours are based on an Australian Noise Exposure Concept (ANEC)).	May affect residents in Ellalong, Paxton and Millfield in the west, Kitchener and Abernethy in the north and Mulbring in the east.	No major urban areas close to the possible airport	No major urban areas close to the possible airports	Kulnura Southwest of the airport, may affect residents in Central Mangrove, and Mangrove Mountain.	Cooranbong North of airport may affect residents in Barnsley, West Wallsend, Killingworth. South of the airport may affect residents in Morisset, Dora Creek and Cooranbong.	No major urban areas close to the possible airports.	No major urban areas close to the possible airports.	Close to Blackheath in the south and Mount Victoria in the west.	No major urban areas close to the possible airport.	Wilberforce Close to Wilberforce, Windsor and Richmond areas in the south and Kurrajong and Glossodia in the west, likely to affect residents at Glossodia.	No airport sites identified.	Luddenham Residents in South Penrith, Werrington and Claremont Meadows northeast of the airport will be within the 20-25 ANEC contours. Close to Mulgoa, Wallacia and Luddenham.	Silverdale Residents in Silverdale will be within the 25 ANEC contour. South of the airport, residents at the Oaks will be within the 20 ANEC contour.	Wilton Residents at Bargo would be within the 20 ANEC contour west of the airport.	Belanglo Close to Berrima north of the airport.	Close to Marulan and Tallong south of the airport.	Close to Marulan and Kenmore in the east.	Residents in Kiama, Kiama Heights, Kiama Downs, and Werri Beach will within the 25 ANEC contour, and residents at Oaks Flats in the north will be within the 20 ANEC contour for a type 1 airport
	Ability to share noise (Not Applicable = noise sharing not considered an issue)	Not Applicable	Not Applicable	Not Applicable	Kulnura Limited ability for noise sharing	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Wilberforce Not Applicable	No airport sites identified.	Luddenham Limited ability to noise share.	Silverdale Not Applicable	Wilton Limited ability to noise share	Belanglo Some ability to noise share	Some ability to noise share	Not Applicable	Not Applicable
	Type 3 airports Total population within 20 (25) ANEF contour/s. (Note: all airports assumed to be single runways)	Ellalong 91 (42)	Watagan Forest Rd 243 (9)	Bucketty 15 (7) Mt Manning 4 (2)	Kulnura 175 (77) Priests Ridge 95 (42) Mangrove Mountain 126 (61) Peats Ridge 212 (86)	Cooranbong 935 (193) Wyee 2,816 (1073) Somersby 1,624 (166)	Mile Ridge 5 (2) Mellong 5 (2)	Sunnyside Ridge 5 (2) Wollangambe 16 (8)	Mount Victoria 243 (9) Blackheath 26 (3)	Warawaralong 69 (34)	West Portland 292 (104) Wilberforce 884 (299)	No airport sites identified.	Luddenham 389 (179) Bringelly 415 (221) Badgerys Creek 821 (372)	Silverdale 198 (76) The Oaks 1036 (530)	Wilton 194 (53) Appin 148 (66)	Belanglo 52 (26) Sutton Forest 70 (32)	Marulan 43 (20)	Towrang 32 (14)	Kiama 420 (143)
	Comments: (ANEF contours are based on a noise exposure concept (ANEC)).	Close to Ellalong, Paxton and Millfield in the west.	No major urban areas close to the airport	No major urban areas close to the airports	Kulnura Southwest of the airport, close to Central Mangrove, and Mangrove mountain.	Cooranbong South of the airport may affect residents in Dora Creek	No major urban areas close to the airports	No major urban areas close to the airports	Close to Blackheath in the north and Mount Victoria in the west	No major urban areas close to the airport	Wilberforce Close to Wilberforce, Windsor and Richmond areas in the south and Kurrajong and Glossodia in the west.	No airport sites identified.	Luddenham Residents in Claremont Meadows northeast of the airport will be affected. Close to South Penrith area, Mulgoa, Wallacia and Luddenham.	Silverdale Close to Silverdale, the Oaks.	Wilton Close to Bargo west of the airport.	Belanglo Close to Berrima north of the airport.	Close to Marulan and Tallong south of the airport.	Close to Marulan and Kenmore in the east.	Close to Kiama, Kiama Heights, Kiama Downs, and Werri Beach in the south.
	Ability to share noise (Not Applicable = noise sharing not considered an issue).	Not Applicable	Not Applicable	Not Applicable	Kulnura Limited ability for noise sharing.	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Wilberforce Not Applicable	No airport sites identified.	Luddenham Limited ability to noise share.	Silverdale Not Applicable	Wilton Limited ability to noise share.	Belanglo Some ability to noise share	Some ability to noise share	Not Applicable	Not Applicable
Primary Criterion 7 – National/State Parks	World Heritage Areas	No sites	No sites	Greater Blue Mountains (listed 2000)	No sites	No sites	No sites	Greater Blue Mountains (listed 2000)	Greater Blue Mountains (listed 2000)	Greater Blue Mountains (listed 2000)	On edges of Greater Blue Mountains (listed 2000)	No sites	On edges of Greater Blue Mountains (listed 2000)	On edges of Greater Blue Mountains (listed 2000)	No sites	No sites	No sites	No sites	No sites
	National Park	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
	Area of land within the locality (ha)	1,337 ha	2,294 ha	19,731 ha	15,969 ha	4,406 ha	1,494 ha	4,481 ha	4,425 ha	3,087 ha	2,937 ha	5,575 ha	269 ha	3,212 ha	7,069 ha	12,669 ha	531 ha	1,600 ha	0 ha
	Note: the National Park criterion includes National Parks, Conservation Areas, State Conservation Areas and Nature Reserves (as provided by the NSW Government Office of Environment and Heritage –January 2011).																		
	State Forests – area affected	No	3,562 ha	594 ha	775 ha	2,100 ha	237 ha	No	No	No	No	No	No	No	No	5,231 ha	5,606 ha	No	No
	State Parks – area affected	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
RAMSAR wetland	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

		Northern Localities					Western and North-Western Localities				Sydney Basin Localities			South-Western Localities					Southern Localities
	Refer to Part 8 for maps of localities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Primary Criterion 8 – Flora/Fauna	Land zoned (7) Environment Protection	0 ha	0 ha	0 ha	325 ha	4,944 ha	10,150 ha	0 ha	0 ha	1,419 ha	6,287 ha	56 ha	19 ha	1,200 ha	969 ha	32,944 ha	675 ha	0 ha	1,175 ha
	'Protected' flora and fauna (as defined under National Parks and Wildlife Act 1974 (NPW Act 1974) and Threatened Species Conservation Act 1995 (TSC Act 1995))	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha
	'Vulnerable' flora and fauna (as defined under NPW 1974 and the TSC Act 1995)	Flora – 79ha Fauna – 64ha	Flora – 1ha Fauna – 162ha	Flora – 7ha Fauna – 146ha	Flora – 42ha Fauna – 118ha	Flora – 189ha Fauna – 437ha	Flora – 891ha Fauna – 3,002ha	Flora – 80ha Fauna – 392ha	Flora – 284ha Fauna – 255ha	Flora – 26ha Fauna – 18ha	Flora – 1,512ha Fauna – 863ha	Flora – 133ha Fauna – 178ha	Flora – 25ha Fauna – 91ha	Flora – 33ha Fauna – 21ha	Flora – 90ha Fauna – 305ha	Flora – 95ha Fauna – 246ha	Flora – 93ha Fauna – 105ha	Flora – 3ha Fauna – 95ha	Flora – 1ha Fauna – 22ha
	'Endangered' flora and fauna (as defined under NPW 1974 and the TSC Act 1995)	Flora – 0ha Fauna – 5ha	Flora – 0ha Fauna – 1ha	Flora – 24ha Fauna – 10ha	Flora – 25ha Fauna – 1ha	Flora – 816ha Fauna – 4ha	Flora – 167ha Fauna – 57ha	Flora – 74ha Fauna – 50ha	Flora – 255ha Fauna – 89ha	Flora – 22ha Fauna – 0ha	Flora – 1,234ha Fauna – 164ha	Flora – 75ha Fauna – 109ha	Flora – 91ha Fauna – 75ha	Flora – 0ha Fauna – 8ha	Flora – 106ha Fauna – 24ha	Flora – 193ha Fauna – 18ha	Flora – 29ha Fauna – 3ha	Flora – 0ha Fauna – 2ha	Flora – 88ha Fauna – 33ha
	'Critically Endangered' flora and fauna (as defined under NPW 1974 and the TSC Act 1995)	Flora – 0ha Fauna – 9ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 4ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 0ha	Flora – 17ha Fauna – 22ha	Flora – 1ha Fauna – 0ha	Flora – 4ha Fauna – 1ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 38ha	Flora – 0ha Fauna – 2ha	Flora – 0ha Fauna – 1ha	Flora – 0ha Fauna – 0ha	Flora – 0ha Fauna – 1ha	Flora – 71ha Fauna – 1ha	Flora – 16ha Fauna – 1ha	Flora – 1ha Fauna – 1ha	Flora – 0ha Fauna – 0ha
Primary Criterion 9 – State Significant Sites	State Significant Site (SSS, gazetted or potential)	No	No	No	No	Potential SSS Mount Penang Parklands, The Avenue, Somersby.	Potential SSS Mount Penang Parklands, The Avenue, Somersby	No	No	No	No	No	No	No	No	Gazetted SSS Southern Highlands Regional Shooting Complex Wattle Ridge Road, Hill Top	No	No	No
	Specified site	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Comment on impact on new capacity created/unlocked.	None	None	None	None	Not relevant to and no effect on new capacity created/unlocked in this locality.	Not relevant to and no effect on new capacity created/unlocked in this locality	None	None	None	None	None	None	None	None	Not relevant to and no effect on new capacity created/unlocked in this locality.	None	None	None
Primary Criterion 10 – Unexploded Ordnance Risks	Risk of incomplete site remediation for unexploded ordnance (UXO).	No UXO risk sites identified in the locality.	No UXO risk sites identified in the locality.	No UXO risk sites identified in the locality.	No UXO risk sites identified in the locality.	No UXO risk sites identified in the locality.	No UXO risk sites identified in the locality.	Substantial UXO potential on Thales Group site in south of Methven Street, Lithgow; Other UXO potential within Newnes State Forest and west of Bilpin	No UXO risk sites identified in the locality.	No UXO risk sites identified in the locality.	Slight and other UXO potential at Agnes Banks Nature Reserve, west of Londonderry.	Slight UXO potential off the coast North of Palm Beach.	Slight and other UXO potential in Narellan and Campbelltown area (maybe outside this locality).	No UXO risk sites identified in the locality.	No UXO risk sites identified in the locality.	Other UXO potential in Bowral area along the railway line.	No UXO risk sites identified in the locality.	No UXO risk sites identified in the locality.	Other UXO potential in area offshore and north of the Blowhole.
	Comment on impact on new capacity created/unlocked.	None	None	None	None	None	None	Neither identified representative airport sites (31 or 32) close to above sites with UXO risks.	None	None	None – no representative airports located close to Agnes Banks Nature Reserve.	None – no representative airports identified in this locality.	None – no representative airports identified close to this area.	None	None	None – no representative airports identified close to this area.	None	None	None – no representative airports identified close to this area.

Source: WorleyParsons/AMPC analysis

Matrix 2 Comparative assessment of localities shortlisted in Phase 2 of the greenfield assessment process

Matrix 2 Comparative assessment of greenfield localities shortlisted in Phase 2
Part A: Site evaluation

Locality number Geographic locality descriptor		Northern Localities	Sydney Basin Localities		South-Western Localities	
		5 Central Coast	10 Hawkesbury	12 Nepean	13 Burratorang	14 Cordeaux-Cataract
General Locality Attributes	Geographic place name of representative airport site.	Somersby	Wilberforce	Luddenham	The Oaks	Wilton
	Local government areas (LGAs) within locality (principal LGA/s shown bold).	Gosford Lake Macquarie Wyong	Baulkham Hills Blacktown Hawkesbury Hornsby Penrith	Blue Mountains Liverpool Penrith Wollondilly	Camden Wollondilly	Campbelltown Wingecarribee Wollondilly Wollongong
	Representative significant population centres within locality.	Somersby / Gosford Wyong, Morisset and Toronto.	Penrith, Richmond, Windsor, The Hills District, and NW Metro Sydney.	Glenmore Park, Luddenham and Bringelly.	Oakdale and The Oaks.	Wilton and Appin.
	Population within 30km radius of site reference point (Census 2006) (rounded to nearest '00).	315,600	553,300	1,083,900	144,600	277,000
	Population within 15km radius of site reference point (Census 2006) (rounded to nearest '00).	141,000	62,200	141,800	29,300	10,400
	Key transport system/s existing within locality.	F3 Sydney-Newcastle Freeway; Pacific Highway; Main North Line.	M7 Western Sydney Orbital; Bells Line of Road; Windsor Road; Blacktown Road; Putty Road; Old Northern Road; Richmond Railway Line.	M4 Western Motorway; M7 Sydney Western Orbital; The Northern Road ; Elizabeth Drive; Bringelly Road.	Burratorang Road; Montpellier Road; Silverdale Road.	F5 Hume (South Western) Freeway; Main Southern Railway.
	Approximate size of locality (rounded to nearest '00 ha).	28,600	56,700	22,000	17,700	23,500
	General terrain description.	Dissected montane plateau with some open undulating rural land along linear ridge lines and undulating coastal plain with some areas of higher ground.	Broad river valley with open rural land and gently undulating terrain in the west rising to higher ground in the east.	Broad river valley and gently undulating terrain to the east of the Nepean River with higher ground rising west from the river	Undulating plateau with open rural land - dissected rural land to the east and rising rugged forested terrain to the west	Heavily dissected montane plateau with open rural and some long linear ridge lines adjoining the deep gorges of the major rivers.
	Major river systems.	Narara, Ourimbah, Wyong, Dora, Wallarah, Wyee Creeks and tributaries flowing to the Central Coast lake system.	Hawkesbury River, Eastern and South Creeks and tributaries.	Nepean River, Oakey, Badgerys and South Creeks.	Monkey and local creeks.	Nepean, Avon, Cordeaux, Cataract Rivers; Allen Creek and tributaries; Cascade Creek.
	Existing or nearest airport in locality.	Warnervale (private airfield) Cooranbong (now closed).	RAAF Base Richmond	Camden Airport; Wallacia and St Mary's (private airfields).	The Oaks (private airfield)	Wilton Parachuting Centre; Wedderburn (private airfield).
	Previous airport proposals. (SSA = Department of Aviation 1985 Second Sydney Airport Site Selection Program: Draft Environmental Impact Statement).	Warnervale (SSA)	Londonderry; Richmond; St Mary's; Marsden Park; Scheyville; Galston; Rouse Hill/Nelson (SSA).	Badgerys Creek Airport Sites; Bringelly (SSA).	Nil	Wilton; Darkes Forest (further to east and not in locality) (SSA).
Preferred Representative Airport Site in Locality (OK means that, given a higher standard airport can be accommodated, it is assumed airport smaller Type may also be accommodated)	Typical elevation of representative site (metres above sea level).	230-260	50	70-110	285-300	300-320
	Maximum Type 1 airport (parallel runways) (Runway/s; name, alignment).	2 x 4,000m Somersby 18/36	1 x 4,000m Wilberforce 09/27	1 x 4,000m and 1 x 2,500m Luddenham 01/19	1 x 4,000m The Oaks 17/35	1 x 4,000m and 1 x 3,500m Wilton 06/24
	Airport Type 1 (one runway) (Runway/s; name, alignment).	1 x 4,000m Somersby 18/36	1 x 4,000m Wilberforce 09/27	1 x 4,000m Luddenham 01/19	1 x 4,000m The Oaks 17/35	1 x 4,000m Wilton 06/24
	Airport Type 2 (Runway/s; name; alignment).	OK plus 1 x 3000m Cooranbong 01/19	OK	OK	OK	OK
	Airport Type 3 (Runway/s; name; alignment).	OK plus 1 x2,500m Wyee 03/21	OK	OK	OK	OK
	Airport Type 4 (Runway/s; name; alignment).	OK	OK	OK	OK	OK
	Other sites possible within the locality? (No, Probably not, Possibly yes, Yes).	Yes	Yes	Yes	Yes	Yes
	Note: Unless specifically noted, for the purposes of this study, it is assumed that the representative site would remain as is and would, where possible, permit the development of an airport from Type 4 up to Type 3, up to Type 2, up to Type 1 and finally to a "maximum" configuration.					

Locality number Geographic locality descriptor		Northern Localities	Sydney Basin Localities		South-Western Localities	
		5 Central Coast	10 Hawkesbury	12 Nepean	13 Burraborang	14 Cordeaux-Cataract
Criterion 1 Capacity Created (preliminary analysis) PRIMARY CRITERION	Type 1 - Aircraft movements per hour and per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 100 per movements hour or 370,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.
	Type 1 - Passengers per year (based on <i>Sydney Airport Master Plan</i> forecast for 2029 and a passenger per aircraft mix of 195); and Passengers per year (130 passengers per aircraft based on airport type possible).	Up to 72 million per year (based on passengers per aircraft mix of 195). Up to 48 million per year (based on 130 passengers per aircraft).	Up to 46.8 million per year (based on passengers per aircraft mix of 195). Up to 31 million per year (based on 130 passengers per aircraft).	Up to 72 million per year (based on passengers per aircraft mix of 195). Up to 48 million per year (based on 130 passengers per aircraft).	Up to 46.8 million per year (based on passengers per aircraft mix of 195). Up to 31 million per year (based on 130 passengers per aircraft).	Up to 46.8 million per year (based on passengers per aircraft mix of 195). Up to 31 million per year (based on 130 passengers per aircraft).
	Type 1 - Ability to expand capacity in the future.	Nil beyond a parallel runway airport.	Nil beyond a single runway.	Nil beyond a parallel runway airport.	Nil beyond a single runway.	Nil beyond a parallel runway airport.
	Type 2 - Aircraft movements per hour and per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.
	Type 2 - Passengers per year (based on <i>Sydney Airport Master Plan</i> forecast for 2029 and a passengers per aircraft mix of 195). Passengers per year (based on 130 passengers per aircraft mix).	Up to 46.8 million per year (based on passengers per aircraft mix of 195). Up to 31 million per year (based on 130 passengers per aircraft).	Up to 46.8 million per year (based on passengers per aircraft mix of 195). Up to 31 million per year (based on 130 passengers per aircraft).	Up to 46.8 million per year (based on passengers per aircraft mix of 195). Up to 31 million per year (based on 130 passengers per aircraft).	Up to 46.8 million per year (based on passengers per aircraft mix of 195). Up to 31 million per year (based on 130 passengers per aircraft).	Up to 46.8 million per year (based on passengers per aircraft mix of 195). Up to 31 million per year (based on 130 passengers per aircraft).
	Type 2 - Ability to expand capacity in the future.	Yes to Type 1.	Yes to Type 1.	Yes to Type 1.	Yes to Type 1.	Yes to Type 1.
	Type 3 - Aircraft movements per hour and per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.
	Type 3 - Passengers per year (based on <i>Sydney Airport Master Plan</i> forecast for 2029 passengers per aircraft mix of 140). Passengers per year (based on 80 passengers per aircraft mix).	Up to 33 million per year based on 140 passengers per aircraft mix. Up to 19 million per year based on 80 passengers per aircraft.	Up to 33 million per year based on 140 passengers per aircraft mix. Up to 19 million per year based on 80 passengers per aircraft.	Up to 33 million per year based on 140 passengers per aircraft mix. Up to 19 million per year based on 80 passengers per aircraft.	Up to 33 million per year based on 140 passengers per aircraft mix. Up to 19 million per year based on 80 passengers per aircraft.	Up to 33 million per year based on 140 passengers per aircraft mix. Up to 19 million per year based on 80 passengers per aircraft.
	Type 3 – Ability to expand capacity in the future.	Yes to Types 2 and 1.	Yes to Types 2 and 1	Yes to Types 2 and 1.	Yes to Types 2 and 1.	Yes to Types 2 and 1.
	Type 4 – Aircraft movements per hour and per year (Note 2).	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.
	Type 4 – Passengers per year (based on 35 passengers per aircraft mix).	1 million per year as primarily used for flying training and due runway length and Class D airspace limitations.	1 million per year as primarily used for flying training and due runway length and Class D airspace limitations.	1 million per year as primarily used for flying training and due runway length and Class D airspace limitations.	1 million per year as primarily used for flying training and due runway length and Class D airspace limitations.	1 million per year as primarily used for flying training and due runway length and Class D airspace limitations.
	Type 4 – Ability to expand capacity in the future.	Yes to Types 3, 2 and 1.	Yes to Types 3, 2 and 1	Yes to Types 3, 2 and 1	Yes to Types 3, 2 and 1.	Yes to Types 3, 2 and 1.
	Note 1: Joint Study forecasts were undertaken separately. As such, assumptions have had to be made as to the type and levels of activity which may occur at the greenfield localities/sites. Note 2: <i>ICAO Airport Planning Manual Part 1 Master Planning</i> is used for higher order planning only primarily for Regular Public Transport (RPT) aircraft and will require consideration of the airport's role, aircraft fleet mix, flight paths and noise impacts, environmental impacts, airspace management and policy settings when a detailed site evaluation is undertaken. Note 3: For comparison with an existing airport with parallel runways – <i>2009 Sydney Airport Master Plan</i> indicates 402,000 RPT movements in 2029–30. Higher annual volumes are possible with intensive airspace management and appropriate technology. Note 4: Bankstown Airport with three runways, but with two operating primarily with training circuits, historically, had 484,000 General Aviation (GA) movements in 1989–90. The <i>Preliminary Draft Master Plan 2010</i> indicates 457,000 movements in 2029/30 with the impacts of recent Class D airspace policies introduced by Civil Aviation Safety Authority (CASA) to be considered in the next Master Plan. Airservices Australia indicates the capacity is 480,000–500,000 movements per year prior to the introduction of Class D airspace. Higher annual volumes are possible with intensive airspace management and appropriate technology.					

Locality number Geographic locality descriptor		Northern Localities	Sydney Basin Localities		South-Western Localities	
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Criterion 2 Applicability to potential demand segments of new capacity	Airport Type 1	ILH – Yes ISH – Yes Dom– Yes Regional– Yes LCC – Yes Freight – Yes GA – No	ILH – Yes ISH – Yes Dom – Yes Regional – Yes LCC – Yes Freight – Yes GA – No	ILH – Yes ISH – Yes Dom– Yes Regional– Yes LCC – Yes Freight – Yes GA – No	ILH – Yes ISH – Yes Dom– Yes Regional– Yes LCC – Yes Freight – Yes GA – No	ILH – Yes ISH – Yes Dom – Yes Regional – Yes LCC – Yes Freight – Yes GA – No
	Airport Type 2	ISH – Yes Dom – Yes Regional– Yes LCC – Yes Freight – Yes GA – No	ISH – Yes Dom – Yes Regional– Yes LCC – Yes Freight – Yes GA – No	ISH – Yes Dom – Yes Regional– Yes LCC – Yes Freight – Yes GA – No	ISH – Yes Dom – Yes Regional – Yes LCC – Yes Freight – Yes GA – No	ISH – Yes Dom – Yes Regional– Yes LCC – Yes Freight – Yes GA – No
	Airport Type 3	Dom – Yes Regional – Yes LCC – Yes Freight – Yes GA – Limited	Dom – Yes Regional– Yes LCC – Yes Freight – Yes GA – Limited	Dom – Yes Regional– Yes LCC – Yes Freight – Yes GA – Limited	Dom – Yes Regional– Yes LCC – Yes Freight – Yes GA – Limited	Dom – Yes Regional– Yes LCC – Yes Freight – Yes GA – Limited
	Airport Type 4	Regional – Yes LCC – Yes Freight – Yes GA – Yes	Regional – Yes LCC – Yes Freight – Yes GA – Yes	Regional – Yes LCC – Yes Freight – Yes GA – Yes	Regional – Yes LCC – Yes Freight – Yes GA – Yes	Regional – Yes LCC – Yes Freight – Yes GA – Yes
	Note: ILH = International Long Haul; ISH = International Short haul; Dom = Domestic Interstate; Regional = Intrastate; LCC = Low Cost Carrier; Fr = Freight (non RPT Belly freight) NB Most freight transiting Sydney (Kingsford-Smith) Airport is RPT belly freight. There are relatively few dedicated freighters. International Freight operators may not favour splitting operations to two airports (need to duplicate freight sheds, equipment, add personnel etc). For Domestic, there may be some small overnight freight (e.g. bank couriers).					
Criterion 3 Ease of connectivity between Sydney (Kingsford-Smith) Airport and the airport site	Average road travel time (2011, mins)	90	70	40	60	50
	Note: Refer also to Criteria 6 and 10.					
	Average rail travel time (if possible) (2011, mins)	120	90	75*	70*	75*
	Note: Refer also to Criteria 6 and 10 – most sites do not have any, let alone a direct or even reasonably proximate, connectivity to the rail system – values quoted are from the nearest railway station; sites having or having a prospect of being connected with a direct service to Sydney (Kingsford-Smith) Airport are marked * Note: availability or not of a rail link is not likely to be an issue for Type 4 airports.					

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Criterion 4 Development costs	Type 1 (one runway) Comparative cost of earthworks to create airport platform, \$ millions (2010–11 prices)*	~\$534	~\$939	~\$203	~\$430	~\$293
	Type 3 Comparative cost of earthworks to create airport platform, \$ millions (2010–11 prices)*	~\$413	~\$680	~\$135	~\$298	~\$212
	Type 1 (one runway) Estimated airport airside works cost, \$ millions (2010–11 prices)*	~\$4,346	~\$4,352	~\$4,358	~\$4,353	~\$4,345
	Type 3 Estimated airport airside works cost, \$ millions (2010–11 prices)*	~\$1,396	~\$1,401	~\$1,399	~\$1,400	~\$1,397
	Type 1 (one runway) Estimated land acquisition cost (related to air services and facilities), \$ millions (2010–11 prices) *	~\$394	~\$292	~\$848	~\$1,012	~\$938
	Type 3 Estimated land acquisition cost (related to air services and facilities), \$ millions (2010–11 prices) *	~\$305	~\$212	~\$562	~\$702	~\$678
	Type 1 (one runway) Road and rail – access infrastructure and rollingstock costs, \$ millions (2010–11 prices)*	~\$1,400	~\$1,129	~\$1,380	~\$1,524	~\$858
	Type 3 Road and rail – access infrastructure and rollingstock costs, \$ millions (2010–11 prices)*	~\$1,094	~\$784	~\$1,056	~\$918	~\$526
	Fuel pipeline infrastructure costs, \$ millions (2010–11 prices) *	~\$4	~\$135	~\$151	~\$267	~\$267
	Potential cost to remove or relocate specified obstacles, \$ millions (2010–11 prices) *	~\$18	~\$0	~\$44	~\$28	~\$13
*Note: <u>Excludes</u> allowances for risk, contingency, preliminaries, fees etc. *Note: These estimates are based on prefeasibility level assessments for comparative purposes only and necessarily may not include all procedural, internal and externality costs required for delivery of an operational airport. Given the preliminary stage, there are a number of exclusions and limitations and assumptions. For example, the total cost estimates exclude a number of costs such as maintenance and operational works, contaminated land remediation/demolition costs, relocations of existing services or costs that may be required for upgrading of the existing rail, power, etc. networks.						

Locality number Geographic locality descriptor		Northern Localities	Sydney Basin Localities		South-Western Localities	
		5 Central Coast	10 Hawkesbury	12 Nepean	13 Burratorang	14 Cordeaux-Cataract
Criterion 5 Accessibility of the Sydney land transport network (all airport types) PRIMARY CRITERION	Kilometres to connect site reference point to existing rail link	10 km from Gosford Station on Main North Line.	9 km from Windsor Station on Richmond Line.	18 km from planned Leppington Station on South West Rail Link.	20 km from Menangle Park Station and 25 km from Macarthur station on Main South Railway.	12 km from Douglas Park Station on Main South Railway.
	Likelihood of a rail link being constructed to or near to the site	Depends on the outcome of high speed rail assessment underway.	Would have to be an airport-specific line.	Links to the Badgerys Creek site have been proposed and investigated. This link could be extended to Luddenham.	Would need an extension of South West Rail Link or an airport-specific line connected to Main South Railway.	Site is traversed by alignment for incomplete Maldon–Dombarton Railway, which is connected to Main South Railway.
	Rail connection difficulty: - Very remote >20 km - Remote >10, <20 km - Proximate >5, <10km - Very proximate <5km	Proximate	Proximate	Proximate	Remote	Very proximate
	Terrain difficulty: - Very difficult - Difficult - Relatively easy - Easy	Difficult Existing railway is about 240 metres different in elevation, requiring construction in mountainous terrain.	Difficult Existing railway is about 45 metres different in elevation. Major extension of the Richmond line required, including crossing of Hawkesbury River and construction in hilly terrain.	Relatively easy if connected as extension of South West Rail Link. More difficult if connected to Main West with urban areas en route. Existing railway is about 45 metres different in elevation.	Difficult Areas of concern to connect to Menangle Park: Crossing Navigation and Foot Onslow Creeks and Nepean River. Areas of concern to connect to Macarthur station: Crossing Nepean River, Mount Annan Botanic Garden and Hume Highway. Existing railway is about 150 metres different in elevation.	Relatively easy if incomplete existing alignment for Maldon–Dombarton line adopted, as this alignment runs through the site.
	Capacity of the existing rail links and requirements for additional capacity	Requirements for providing additional capacity for 4 trains per hour: A tunnel between Hawkesbury River and Berowra due to the limit of capacity in Cowan Bank on Main Northern Railway.	Requirements for providing additional capacity for 4 trains per hour: Duplication of Richmond Line. With Western Express Project going ahead, there will not be any capacity issue on the Western Line.	Requirements for providing additional capacity for 4 trains per hour on the Main South Line: Quadruplication between Revesby and Glenfield. Sextuplication between Erskineville and Tempe. Re-signalling and electrification.	Main Southern Railway does not have sufficient capacity to serve a new airport. Requirements for providing additional capacity for 4 trains per hour on the Main South Line: Southern Sydney Freight Line needs to be in place as part of quadruplication to Glenfield. Quadruplication between Revesby and Glenfield. Sextuplication between Erskineville and Tempe. Re-signalling and electrification.	Main Southern Railway does not have sufficient capacity to serve a new airport. Requirements for providing additional capacity for 4 trains per hour on the Main South Line: Southern Sydney Freight Line needs to be in place as part of quadruplication to Glenfield. Quadruplication between Revesby and Glenfield. Sextuplication between Erskineville and Tempe. Re-signalling and electrification. New refuges south of Macarthur.
	Note: Applies for all airport types except for a Type 4 airport, where availability of a rail link is not likely to be an issue.					
	Kilometres to connect site reference point to existing designated state roads/highways	Less than 5 km to Sydney Newcastle Freeway (F3).	25 km to M7 motorway.	15 km to M7 motorway.	25 km to Hume Highway.	9 km to Hume Highway.
	Note: Assumes that high capacity link would need to be constructed from existing major road network either over existing road alignments or requiring new alignments.					
	Road connection difficulty: - Very remote >20 km 10<Remote <20 km 5<Proximate <10km - Very proximate <5km	Very proximate Easy Site is very close to Newcastle Freeway (F3).	Very remote (from freeway system) Very proximate (Putty Road) Relatively easy <i>Areas of Concern:</i> Road system beyond Richmond/Windsor. Upgrading roads to Richmond/Windsor. Hawkesbury River, Windsor and Riverstone residential.	Remote (from freeway system) Very proximate (major roads such as The Northern Road and Elizabeth Drive) Easy Existing road to be upgraded.	Very remote (freeway system) Very proximate (major roads e.g. Burratorang Road) Easy The average speed on the connecting road is 60 km/h. <i>Areas of Concern:</i> Spitters Gully, Flaggy Creek, Nepean River, Camden South residential area and Mount Annan residential area.	Very proximate Easy <i>Areas of Concern:</i> Upgrading roads to Wilton and thence to F5 freeway. Capacity of F5 exit and entrance ramps from and to Douglas Park Road.

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Criterion 6 Proximity of aviation capacity to NSW commercial growth centres	Volume of employment at growth centres within 30 minutes of the site divided by access time from site, rounded to nearest '0'		480	1,440	3,050	170	170
	Nearest growth centre within 30 minutes Number of jobs		Gosford 6,000	Penrith 31,000	Penrith 31,000 Leppington (planned) 5,000#	Leppington (planned) 5,000#	Leppington (planned) 5,000#
	Distance (kms) and time to growth centre (mins)		15, 20	35, 45	15, 15 25, 25	30, 30	40, 30
	Note 1: This index measures the 2036 long-term employment capacity target for each of 31 Strategic Centres identified in the <i>Metropolitan Plan for Sydney 2036</i> within a maximum of 30 minutes of the site, divided by the road travel time to the new unlocked/created capacity, aggregated for all areas. The higher the aggregated value, the more accessible the site to areas of employment. Note 2: # indicates no data provided so the number of jobs is assumed to be comparable to other similar centres.						
Criterion 7 Commercial opportunities near or on-site PRIMARY CRITERION	Existing employment land within 15 km of the site boundary (ha) (rounded to nearest 10)	Zone 3 (or B1-B8)	200	40	80	90	40
		Zone 4 (or IN1-IN4)	910	260	1,590	90	140
		Total	1,110	290	1,660	180	190
	Existing employment land within 5 km of the site boundary (ha) (rounded to nearest 10)	Zone 3 (or B1-B8)	30	10	0	10	20
		Zone 4 (or IN1-IN4)	480	10	0	0	10
		Total	510	20	0	10	30
	Note: Land zoned (3) or B1-B8 is Business and Commercial; and land zoned (4) or IN1-IN4 is Industrial. While land zoned (1) Rural and (5) Special Use may contain employment opportunities, for the purpose of this project, it has not been included in the employment land calculations.						
	Potential Employment Land including investigation areas within 15 km of the site (ha) (rounded to nearest 10)		0	0	2,460	0	0
	Note: As identified in the Metropolitan Plan for Sydney 2036, Lower Hunter Regional Strategy 2006–2031, Central Coast Regional Strategy 2006–2031 and Illawarra Regional Strategy 2006–2031).						
	Potential Employment Land including investigation areas within 5 km of the site (rounded to nearest 10)		0	0	1,000	0	0
	Note: As identified in the Metropolitan Plan for Sydney 2036, Lower Hunter Regional Strategy 2006-2031, Central Coast Regional Strategy 2006-2031 and Illawarra Regional Strategy 2006-2031						
	Land within 15 km of the site capable of being converted to employment lands (rounded to nearest 10)	Zone 1 or RU1-RU6	18,300	43,680	29,090	35,180	16,380
		Zone 6 or RE1-RE2	14,660	670	1,240	410	330
		Total	32,960	44,350	30,330	35,590	16,710

Locality number Geographic locality descriptor		Northern Localities	Sydney Basin Localities		South-Western Localities	
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Criterion 8 Proximity of users to capacity	Regular Public Transport (RPT) airports Per cent and rounded off number of residents with a faster travel time to the locality in which the site is than to Sydney (Kingsford-Smith) Airport (total of 4.47 million people)	15 per cent 684,500	32 per cent 1,430,500	28 per cent 1,242,000	8 per cent 352,000	9 per cent 413,500
	a) Average raw road travel time (2011) – Ermington to site reference point in minutes	60	50	40	65	60
	a) Average raw rail travel time (2011) from Parramatta to nearest station to locality in minutes	75	40	45	65	70
	a) Attractiveness Index i): actual average travel (Sydney (Kingsford-Smith) Airport = 95)	70	76	81	64	65
	a) Attractiveness Index ii): adjusted for different average speeds (Sydney (Kingsford-Smith) Airport = 95)	73	77	86	80	74
	b) Road travel time (mins) from airport site to CBD (Note: Sydney (Kingsford-Smith) Airport = 20 mins)	70	70	55	70	70
	b) Rail travel time (mins) from Airport site to Central Station (including station access time by road) (Note: Sydney (Kingsford-Smith) Airport = 10 to 12 mins)	10 km from Gosford Station on Main North Line.	9 km from Windsor Station on Richmond Line.	18 km from planned Leppington Station on South West Rail Link.	20 km from Menangle Park Station and 25 km from Macarthur station on Main South Railway.	12 km from Douglas Park Station on Main South Railway.
		85 (94)	70 (78)	55 (71)	65 (83)	70 (81)
	Note: Applies to all RPT airports Types Maximum, 1, 2, 3, and 4.					
Criterion 9 Airspace interactions	Airport Types 1 to 3 Interaction with existing air traffic management arrangements. (Some of the major issues which require further review are included under Primary Criterion 9 below.)	Major	Major	Major	Major	Major
	Airport Type 4 Interaction with existing air traffic management arrangements. (Some of the major issues which require further review are included under Qualifications Primary Criterion 9 below.)	Moderate	Major	Major The location of R536A and 536B within the nominal CTR boundary would not be compatible with the proposed 01/19 runway alignment. The Department of Defence Orchard Hills facility would have to be relocated for Luddenham to be operable.	Moderate	Major
	Note: in all cases the preliminary observations listed need to be tested with relevant authorities Airservices Australia; Department of Defence; Office of Airspace Regulation; existing airport operators and users at the feasibility stage. Potential conflicts or dependencies with Richmond and Sydney (Kingsford-Smith) Airport's operations and Sydney Basin traffic would require more detailed analysis by Department of Defence, Airservices Australia and/or the Office of Airspace Regulation. The general complexity of existing airspace within and adjacent to the Sydney Basin makes this review necessary. Some of these major issues are included under Qualifications Primary Criterion 9 below. Major - Airspace where there are significant levels of civil air transport traffic and military activity, such as around Sydney, Williamtown, Nowra and Richmond, together with their respective CTR/CTA, and operational procedures and requirements; or Restricted Areas, particularly those with provisional classifications of RA3 and RA2; or - Danger Areas associated with military flying training. Moderate - Airspace where there are significant levels of GA traffic, such as around Bankstown and Camden, together with their respective CTR (note in practice as Bankstown and Camden are relatively close to the larger airports, a potential moderate ranking is effectively outweighed by the factors affecting the larger airports); or - Restricted Areas with provisional classifications of RA1; or - Danger Areas associated with civil flying training; or - Visual flight rules (VFR) transit routes. Minor - Airspace where there are lower levels of civil traffic and non-towered aerodromes; or - Danger Areas.					

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Criterion 10 Obstacle limitation surfaces PRIMARY CRITERION	Key restrictions on airport development Airport Types 1 to 4		Moderate Two power lines need to be relocated and undergrounded The Sydney Newcastle oil and gas pipelines run immediately to the east of the airport site Preliminary assessment indicates a very minor OLS terrain infringement on the north west approach of the western runway for Type 1 only	Major Three overhead high voltage powerlines in east approach and one in west approach require further investigation. Terrain OLS infringement in horizontal sections of east approach and west approaches for Type 1, subject to further assessment. Terrain OLS infringement in horizontal section of west approach for Type 2.	Major Assumes the Department of Defence Establishment for explosives at Orchard Hills has been relocated and the associated danger area extinguished. Overhead power lines in both eastern and western approaches. Terrain OLS infringement in horizontal section of western approach of northern runway. Further assessment is required. Terrain OLS infringement to the north-west for the Type 4 airport site.	Minor Power lines on north-east approach. Power lines immediately east of the south-west approach. Preliminary assessment indicates no OLS terrain infringements for Types 1 to 3. Terrain OLS infringement to the north west for Type 4 which is on the ultimate airport site.	Moderate Possible OLS terrain infringement at south west approach for Type 1.
	Note: OLS/Terrain Restriction: take-off and approach surfaces only assessed against terrain. (Based on desktop studies using 1:25,000 topographic maps – various survey dates.)						
	Major – difficult terrain environment close to cliffs and mountains and with potential significant meteorological issues. Major civil works may be required. Moderate – local terrain OLS infringement which may need some major civil works. Minor – local infrastructure (overhead power line) OLS infringement which may need relocation and civil works. No restriction – no terrain / OLS infringement.						
Criterion 11 Frequency of meteorological conditions (fog, wind, hail) affecting new and unlocked capacity	Airport Types 1 to 3 Based on historical records, annual number of days when locality/site experiences meteorological conditions (including wind, fog and thunderstorms) which would constrain airport operations	Location/distance to Bureau of Meteorology (BoM) Station (km)	Gosford Narara BoM station (4km) had unusually high incidence of low-speed winds, suggesting the BoM site is located in a wind shadow area so not usable for this analysis. No BoM Automatic Weather Station site is located within a reasonable distance of Somersby records, either ceilometers or visibility data, and so estimates of either IMC conditions or airport closed to landings are not able to be made.	Richmond – 10	Badgerys Creek – 7	Camden – 14	Bellambi – 22
		Compliance with wind usability	Yes	Yes	Yes	Yes	Yes, except from 1100–1930 for gust speed.
		Cross-wind limit is exceeded	For average wind speed nil. For gust wind speed 0.01 per cent (1 hour per year).	For average wind speed 0.03 per cent (3 hours pa). For gust wind speed 0.49 per cent (43 hours per year).	For average wind speed 0.19 per cent (17 hours pa). For gust wind speed 1.08 per cent (95 hours per year).	For average wind speed 0.17 per cent (15 hours pa). For gust wind speed 1.27 per cent (111 hours per year).	For average wind speed 2.07 per cent (181 hours per year). For gust wind speed 5.05 per cent (442 hours per year) – from approximately 1100 to 1930 the 95 per cent availability rule is not met.
		Instrument meteorological conditions (IMC) conditions and airport closed to landings	IMC no data available. Airport closed to landings: no data available.	IMC conditions exceeded 7.9 per cent (692 hours pa). Airport closed to landings 1.27 per cent (111 hours pa).	IMC no data available. Airport closed to landings: no data available.	IMC conditions 9.15 per cent (802 hours pa). Airport closed to landings 1.72 per cent (151 hours pa) – based on records only available from 21 Nov 2007.	IMC conditions 16.1 per cent (1410 hours pa). Airport closed to landings 0.60 per cent (53 hours pa).
	Airport Type 4 Based on historical records, annual number of days when locality/site experiences meteorological conditions (including wind, fog and thunderstorms) which would constrain airport operations	Compliance with wind usability	Yes	Yes with cross-runway.	Yes with cross-runway.	Yes with cross-runway.	Yes with cross-runway.
		Cross-wind limit is exceeded	For average wind speed 0 per cent (0 hours per year) or 0 per cent (0 hours per year) with cross-runway. For gust wind speed 0.8 per cent (70 hours per year) or 0.01 per cent (1 hour pa) with cross-runway.	For average wind speed 1.22 per cent (107 hours per year) or 0.07 per cent (6 hours per year) with cross-runway. For gust wind speed 5.61 per cent (491 hours per year) – for GA aircraft from approximately 0800 to 1730 the 95 per cent availability rule is not met – or 0.65 per cent (57 hours per year) with cross-runway.	For average wind speed 2.35 per cent (206 hours per year) – for GA aircraft from approximately 1300 to 1700 the 95 per cent availability rule is not met – or 0.09 per cent (8 hours per year) with cross-runway. For gust wind speed 7.49 per cent (656 hours per year) – for GA aircraft from approximately 1030 to 1930 the 95 per cent availability rule is not met – or 0.69 per cent (60 hours per year) with cross-runway.	For average wind speed 2.78 per cent (244 hours per year) – for GA aircraft from approximately 1200 to 1630 the 95 per cent availability rule is not met – or 0.21 per cent (18 hours per year) with cross-runway. For gust wind speed 8.42 per cent (738 hours pa) – for GA aircraft from approximately 0900 to 1930 the 95 per cent availability rule is not met – or 1.14 per cent (100 hours per year) with cross-runway.	For average wind speed 12.03 per cent (1,054 hours per year) – for GA aircraft from approximately 1200 to 1700 the 95 per cent availability rule is not met, runway 06/24 would be unavailable over 15 per cent of the time – or 1.26 per cent (110 hours per year) with cross-runway. For gust wind speed 19.39 per cent (1699 hours per year) – for GA aircraft runway unavailability occurs throughout due crosswind – or 3.17 per cent (278 hours per year) with cross-runway.
	Note 1: BoM stations were generally established in 1990. Where this varies, as in The Oaks, or where some data is not available, this is noted for the relevant locations/site.						
	Note 2: Overall based on wind direction, a north-east/south-west runway orientation is favoured in the Sydney Region. ICAO recommends that, for single-direction runways of the Type contemplated, a 95 per cent usability criterion with a cross-wind component of 20 knots for Type 1 to 3 Airports and 13 knots for Type 4 Airports. Cloud base and visibility when compared with average Instrument Landing System (ILS) minima to determine whether the airport would be closed due weather conditions. ILS minima used for all airports (whether or not they are equipped with an ILS) is a cloud base of 300 feet Above Ground Level and a visibility of 800 metres.						
	Provision of a CAT II ILS system and additional supporting infrastructure for one of the runways is a worthwhile enhancement and would reduce airport closures to nearly zero.						
	Note 3: Cross-wind issue will be of greater concern for small GA aircraft – a Type 4 airport or larger may need a cross-wind runway at site if GA is to be accommodated. A cross-runway has been provided for usability not capacity reasons.						

Locality number Geographic locality descriptor			Northern Localities	Sydney Basin Localities		South-Western Localities	
			5 Central Coast	10 Hawkesbury	12 Nepean	13 Burraborang	14 Cordeaux-Cataract
Criterion 12 Potential impact on existing residents and other land users as a result of land acquisition	Population in airport footprint (based on 2006 Census) (rounded to nearest 10)	Maximum Type 1 Airport	170	290	210	530	60
		Type 1	140	280	140	530	30
		Type 2	130	250	120	510	30
		Type 3	110	200	100	430	20
		Type 4	70	110	60	280	10
	Note: in this analysis, all data related to effects on population must be considered as being for the purpose of making comparisons between localities and representative sites only. This is because the geographic cells containing population data do not distinguish between population being evenly spread through the cell or being mostly in a particular part of the cell – hence an overlap of the airport footprint may include population that is in a cell which is partially within the footprint but the population may in fact be located outside the footprint.						
	Cadastral information on number of properties within purchase (site) area (no. of allotments)	Zoned (1) Rural / Non Urban or (RU) Rural in Standard Instrument	157	151	79	152	10
		Zoned (2) Residential or (R) Residential in Standard Instrument	0	0	2	35	0
		Zoned (3) Commercial or (B) Business in Standard Instrument	0	0	0	0	0
		Zoned (4) Industrial or (IN) in Standard Instrument	21	0	0	0	0
		Zoned (5) Special Use (including School, Community, Classified Road, or Infrastructure) or (SP) in Standard Instrument	3	0	4	1	1
		Zoned (6) Open Space (Public and Private) or (RE) in Standard Instrument	2	0	0	1	0
		Zoned (7) Environment Protection or (E2, E3 or E4) Environment in Standard Instrument	7	11	3	1	19
		Zoned (8) Recreation Area or E1) Environment in Standard Instrument	0	0	31	0	0
		Zoned (DM) Deferred Matter	0	0	0	0	0
	Total number of allotments		190	162	119	190	30
	Community facilities such as churches, schools, and the like within the site area – as identified on zoning plans		Somersby Primary School (840 Wisemans Road).	None	Water Supply System, Elizabeth Drive, The Northern Road and Park Road.	Burraborang Road.	None
	Source of zoning information		Gosford IDO 22.	Hawkesbury LEP 1989.	Penrith LEP 2010 and Liverpool LEP 2008.	Wollondilly LEP 2011.	Wollondilly LEP 2011.

Locality number Geographic locality descriptor		Northern Localities	Sydney Basin Localities		South-Western Localities	
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Criterion 13 Noise impact on residents (Type 1, 2, 3 and 4 Airports) PRIMARY CRITERION	Ability to avoid or mitigate noise (by site selection or runway orientation)	Fairly large population nearby – potentially significant operational interaction with Sydney (Kingsford-Smith) Airport to the south may limit ability to avoid or mitigate noise.	Runway alignment optimised to avoid noise impact on Wilberforce, Kurrajong, Windsor and Richmond. Limited ability to minimise /avoid noise impact.	Runway alignment optimised to mitigate the impact on Penrith and Luddenham. Limited ability to minimise/avoid noise impact.	Population centres to the south and east and high terrain to the west constrains runway alignment options.	Runway alignment optimised to mitigate noise impact on Bargo. Further ability to mitigate/avoid noise impact may be limited by interaction with Sydney (Kingsford-Smith) Airport.
	Type 1 Airports – Total population within 20 ANEF contour (rounded to nearest 10)	10,390	5,250	11,560	3,390	1,650
	Type 1 Airports – Total population within 25 ANEF contour (rounded to nearest 10)	5,730	1,890	590	1,340	250
	Type 1 Airports – Comments (ANEF contours are based on a noise exposure concept [ANEC])	Mt Penang and Kariong are adjacent to the approach and take-off from the eastern runway.	Close to Wilberforce, Windsor and Richmond areas in the south and Kurrajong and Glossodia in the west; affect residents at Glossodia.	Residents in South Penrith, Werrington and Claremont Meadows north-east of the airport will be within the 20–25 ANEC contours. Close to Mulgoa, Wallacia and Luddenham.	South of the airport, residents at the Oaks will be within the 20 ANEC contour.	Residents at Bargo will be within the 20 ANEC contour west of the airport.
	Type 1 Airports – Ability to share noise	Interaction with Sydney (Kingsford-Smith) Airport to the south may limit ability to share noise.	Limited ability to noise share.	Limited ability to noise share.	Limited ability to noise share due to population to the south and high terrain to the west.	Becoming more distant to major population centres – some interaction with Sydney (Kingsford-Smith) Airport to the north. Limited ability to noise share.
	Note 1: For the purposes of the first filter of localities/sites, the Australian Noise Exposure Concept (ANEC) adopted for Airport Type 1 has been based on the currently approved 2029 Australian Noise Exposure Forecast (ANEF) for Sydney (Kingsford-Smith) Airport. For the comparative assessment where an airport site is capable of supporting two parallel runways, the ANEC has been applied to only one runway to achieve a more direct comparison with airport sites that are capable of supporting only one runway. There may also be significant populations immediately outside the 20 ANEF contour. Note 2: To eliminate the effects of the second runway on the ANEC at Sydney (Kingsford-Smith) Airport, the south-western quadrant of the 2029 ANEF has been used. This effectively only contains aircraft noise impacts due to departure runway 16R and arrivals 34L. The quadrant of the ANEF has been applied to all four quadrants of the adopted ANEC for the new airports. The resulting ANEC contours cover a greater area than the north-east or north-west quadrants of the Sydney ANEF for 2029 (that is, a more conservative representation of possible noise impacts for the single runway).					
	Type 2 Airports – Total population within 20 ANEF contour (rounded to nearest 100)	440	770	290	830	90
	Type 2 Airports – Total population within 25 ANEF contour (rounded to nearest 100)	140	260	140	460	30
	Type 2 Airports – Comments (ANEF contours are based on a noise exposure concept (ANEC))	As per Type 1.	As per Type 1.	As per Type 1.	As per Type 1.	As per Type 1.
	Type 2 Airports – Ability to share noise	As per Type 1.	As per Type 1.	As per Type 1.	As per Type 1.	As per Type 1.
	Type 3 Airports – Total population within 20 ANEF contour (rounded to nearest 10)	1,620	880	390	1,040	140
	Type 3 Airports – Total population within 25 ANEF contour (rounded to nearest 10)	170	300	180	530	40
	Type 3 Airports – Comments (ANEF contours are based on a noise exposure concept (ANEC))	As per Type 1.	As per Type 1.	As per Type 1.	As per Type 1.	As per Type 1.
	Type 3 Airports – Ability to share noise	As per Type 1.	As per Type 1.	As per Type 1.	As per Type 1.	As per Type 1.
	Note: For the purposes of the first filter of localities/sites, the ANEC adopted for Airport Types 2 and 3 has been based on the ANEC produced as part of this project for a new north-south runway at Richmond Airport. The runway use is therefore assumed to be the same as adopted for Richmond.					
	Type 4 Airports – Total population within 20 (25) ANEF contour/s (rounded to nearest 10)	240	380	260	900	50
	Type 4 Airports – Total population within 25 ANEF contour (rounded to nearest 10)	110	160	100	340	20
	Type 4 Airports – Comments (ANEF contours are based on a noise exposure concept (ANEC))	Cross runway provided for usability not capacity reasons. Use would be infrequent – up to 5 per cent of movements.	Cross-runway provided for usability not capacity reasons. Use would be infrequent – up to 5 per cent of movements.	Cross-runway provided for usability not capacity reasons. Use would be infrequent – up to 5 per cent of movements.	Cross-runway provided for usability not capacity reasons. Use would be infrequent – up to 5 per cent of movements.	Cross-runway provided for usability not capacity reasons. Use would be infrequent – up to 5 per cent of movements.
	Type 4 Airports – Ability to share noise	Limited ability to share noise as GA fight paths are concentrated on flying training circuits with low noise events but with concentrated and repetitive operations.	Limited ability to share noise as GA fight paths are concentrated on flying training circuits with low noise events but with concentrated and repetitive operations.	Limited ability to share noise as GA fight paths are concentrated on flying training circuits with low noise events but with concentrated and repetitive operations	Limited ability to share noise as GA fight paths are concentrated on flying training circuits with low noise events but with concentrated and repetitive operations.	Limited ability to share noise as GA fight paths are concentrated on flying training circuits with low noise events but with concentrated and repetitive operations.
	Note: For the purposes of the first filter of localities the ANEC adopted for Airport Type 4 was based on the ANEF for Bankstown Airport prepared for the Preliminary Draft Master Plan. The runway use is therefore assumed to be the same as adopted for Bankstown Airport.					

Locality number Geographic locality descriptor			Northern Localities	Sydney Basin Localities		South-Western Localities	
			5 Central Coast	10 Hawkesbury	12 Nepean	13 Burraborang	14 Cordeaux-Cataract
Criterion 14 Noise impacts on 'sensitive uses'	Area of sensitive land use within 1 kilometre of airport boundary (ha, to nearest 10) Zones 2 and 5 or R1-R5 or SP 1 and 3		40	0	10	70	0
	Area of sensitive land use within 5 kilometres of airport boundary (ha, to nearest 10) Zones 2 and 5 or R1-R5 or SP 1 and 3		930	90	550	140	280
	Area of sensitive land use likely to be affected by noise greater than 25 ANEF Zones 2 and 5 or R1-R5 or SP 1 and 3 (ha, to nearest 10)	Type 1 Airport	150	40	20	10	0
		Type 2 Airport	0	0	0	0	0
		Type 3 Airport	10	0	0	0	0
		Type 4 Airport	0	0	0	0	0
	Note: land use zoning data does not identify whether the land is intensively used for its purpose (e.g. school building accommodating large numbers of pupils) or passively (for example, for agricultural training). Detailed investigation is required to distinguish the intensity of usage.						
	Criterion 15 Risk and consequence of aviation accidents at or around airports	Area of sensitive land use within public safety zone of runway end that are considered to be 'places of assembly' or hazardous, i.e. flammable (ha, to nearest 10) Zones 2 and 5 or R1-R5 or SP 1 and 3	Maximum Airport	0	0	0	0
Type 1 Airport			0	0	0	0	0
Type 2 Airport			0	0	0	0	0
Type 3 Airport			0	0	0	0	0
Type 4 Airport			0	0	0	0	0
Note: area does not include 'Rural' but population affected includes population living within 'Rural' zones.							
Population within public safety zone of runway (rounded to nearest 10)		Type 1 Airport	20	50	20	40	10
		Type 2 Airport	20	40	20	30	10
		Type 3 Airport	20	30	20	30	10
		Type 4 Airport	20	40	20	50	10
Note: The UK NATS public safety zone has been used to establish the sensitive land. For the purposes of comparative populating of localities, only one runway has been used where an airport is capable of supporting two parallel runways. A detailed site analysis will require consideration of all runways. The Queensland Public Safety Area has been used in the Airport Type templates, which provide a basis for establishing site areas and as an indicative basis for high order costing.							

Locality number Geographic locality descriptor			Northern Localities	Sydney Basin Localities		South-Western Localities	
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Criterion 16 Greenhouse gas emissions / ozone (Surface transport related only)	Type 1 Airports Estimated GHG emissions for road and rail (10 per cent of passengers)	Max tonnes per year	700,000	300,000	444,000	515,000	791,000
		Min tonnes per year	507,000	219,000	346,000	370,000	557,000
	Type 2 Airports Estimated GHG emissions for road and rail (10 per cent of passengers)	Max tonnes per year	497,000	300,000	339,000	515,000	546,000
		Min tonnes per year	371,000	219,000	249,000	370,000	392,000
	Type 3 Airports Estimated GHG emissions for road and rail (10 per cent of passengers)	Max tonnes per year	387,000	229,000	260,000	388,000	411,000
		Min tonnes per year	274,000	157,000	180,000	260,000	275,000
	Type 4 Airports Estimated GHG emissions for road usage – assumes no rail link	Max tonnes per year	75,000	48,000	53,000	86,000	91,000
		Min tonnes per year	9,000	6,000	6,000	10,000	11,000
	Note: Greenhouse gases (GHG) estimated on the basis of the airport passenger capacity assuming 90 per cent road and 10 per cent rail – as rail does not exit at most sites the computation assumes rail has been extended to the site from the nearest existing railway (see Criterion 5). Note: the likelihood of rail at some sites is rated as extremely low to low – however these data assume that such a link would exist (but not for Type 4 Airports).						
Criterion 17 Local air quality (pollution, particulate, odours)	Existing air quality conditions near sites	Nearest NSW Government Office of Environment and Heritage air monitoring site	Wallsend (90 km)	Richmond (15 km)	Bringelly (6 km)	Oakdale (6 km)	Wollongong (33 km)
		Carbon monoxide (CO)	0.10 (VG)	Not recorded.	Not recorded.	Not recorded.	0.5 (VG)
		Nitrogen dioxide (NO ₂)	0.2 (VG)	0.5 (VG)	0.6 (VG)	0.1 (VG)	0.2 (VG)
		Sulphur dioxide (SO ₂)	4.5 (VG)	Not recorded.	Not recorded.	Not recorded.	5.4 (VG)
		PM _{2.5}	14.7 (VG)	19.1 (G)	17.7 (G)	15.9 (VG)	15.5 (VG)
		PM ₁₀	-0.1 (VG)	0.00 (VG)	0.00 (VG)	Not recorded.	0.00 (VG)
		Air quality index (AQI)	29 (G)	38 (G)	35 (G)	33 (VG)	31 (VG)
	Note: For Criterion 17, VG = Very Good, G = Good. PM _{2.5} = Particulate Matter less than or equal to 2.5 microns in diameter, PM ₁₀ = Particulate Matter less than or equal to 10 microns in diameter.						
	Regional air shed characteristics		Elevated site north of Sydney Basin – better ventilated.	Site within Hawkesbury River Valley and Sydney Basin – less well ventilated.	Site within Hawkesbury River Valley and Sydney Basin – less well ventilated.	Elevated site south of Sydney Basin – better ventilated but could add to pollution in south-western Sydney due to air drainage into the Basin from Southern Highlands.	Elevated site south of Sydney Basin – better ventilated but could add to pollution in south-western Sydney due to air drainage into the Basin from Southern Highlands.
Criterion 18 Potential impact on quality of receiving waters	Site overlies water body (Y/N and name)		Yes – Robinson Creek and Little Mooney Mooney Creek (leads to Mooney Dam).	Yes – Howes Creek, Chain Of Ponds Creek and Currency Creek.	Yes – Blaxland Creek.	Yes – Waterfall Creek.	Yes – Clemments Creek, Cascade Creek, Allens Creek and Cordeaux River.
	Water body(ies) site drains into...		Flows into Hawkesbury Nepean River.	Flows into Hawkesbury Nepean River.	Flows into Hawkesbury Nepean River.	Flows into Werri Berri Creek which flows into Hawkesbury Nepean River.	Flows into Upper Nepean River which flows into Hawkesbury Nepean River.
	Does site flow into Sydney, Hunter or Gosford/Wyong Drinking Water Catchment?		Yes within Gosford/Wyong Councils' Water Authority Drinking Water Catchment.	Not within Sydney, Hunter or Gosford/Wyong Drinking Water Catchment.	Not within Sydney, Hunter or Gosford/Wyong Drinking Water Catchment.	Yes within Sydney Drinking Water Catchment.	Yes within Sydney Drinking Water Catchment.

Locality number Geographic locality descriptor			Northern Localities	Sydney Basin Localities		South-Western Localities	
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Criterion 19 Waterway and water supply catchment impact	Airport site as a percentage (per cent) of water supply catchment	Catchment	Mooney	Airport locality not within water supply catchment boundary.	Airport locality not within water supply catchment boundary.	Warragamba	Upper Nepean
		Maximum Airport	3.623			0.110	2.455
		Type 1 Airport	2.409			0.109	1.368
		Type 2 Airport	2.148			0.089	1.103
		Type 3 Airport	2.079			0.087	1.064
		Type 4 Airport	0.989			0.043	0.529
	Note: Catchment areas are as follows: Warragamba Catchment 905,100 ha, Upper Nepean Catchment 68,300 ha, Mangrove Catchment 101,000 ha, Mooney Catchment 39,000 ha. Locality 13 lies within the ‘Special Areas’ Sydney Catchment Authority (SCA) designated area. ‘Special Areas’ are areas of land around the water storages, and the land around the SCA’s canals and pipelines.						
Distance from waterways to site (by waterway type) (km)		Overlies Little Mooney Mooney Creek. 4 km from Mooney Dam.	Overlies Howes Creek, Chain Of Ponds Creek and Currency Creek. 1 km from Hawkesbury River.	Overlies Blaxland Creek. 6 km from Nepean River.	Overlies Waterfall Creek. 16km from Lake Burragorang.	Overlies Clemments Creek, Cascade Creek, Allens Creek and Cordeaux River. 1km from Nepean River.	
Criterion 20 National and State Parks PRIMARY CRITERION	World Heritage Areas		No areas.	On edges of Greater Blue Mountains.	On edges of Greater Blue Mountains.	On edges of Greater Blue Mountains.	No areas.
	National Park (includes National Parks, State Forests, State Conservation Areas and Nature Reserves as provided by the NSW Government Office of Environment and Heritage – January 2011).		McPherson State Forest, Yengo National Park, Dharug National Park.	Penrith Lakes Regional Park, Wollemi National Park, Castlereagh Nature Reserve, Agnes Banks Nature Reserve, Cattai National Park, Maroota Ridge State Conservation Area, Pitt Town Nature Reserve, Rouse Hill Regional Park, Scheyville National Park, Wianamatta Regional Park, Windsor Downs Nature Reserve, Marramarra National Park, Maroota Historic Site.	Bents Basin State Conservation Area, Burragorang State Conservation Area, Gulger Nature Reserve, Mulgoa Nature Reserve.	Burragorang State Conservation Area, Nattai National Park.	Upper Nepean State Conservation Area, Dharawal State Conservation Area.
	Area of land within the site (ha) (rounded to nearest 10)	Maximum Airport	1,410	1,040	1,680	1,040	1,680
		Type 1 Airport	990	970	1,060	1,010	940
		Type 2 Airport	900	900	920	930	840
		Type 3 Airport	760	710	700	700	680
		Type 4 Airport	390	390	390	390	360
	National Parks – area affected (ha) (rounded to nearest 10)	Maximum Airport	10	0	0	0	0
		Type 1 Airport	10	0	0	0	0
		Type 2 Airport	10	0	0	0	0
		Type 3 Airport		0	0	0	0
		Type 4 Airport	0	0	0	0	0
	State Conservation Areas and Parks – area affected (ha) (rounded to nearest 10)	Maximum Airport	0	0	0	0	480
		Type 1 Airport	0	0	0	0	290
		Type 2 Airport	0	0	0	0	250
		Type 3 Airport	0	0	0	0	250
Type 4 Airport		0	0	0	0	220	
RAMSAR wetland (ha)		No	No	No	No	No	
Note: Refer also to Part B – Search of EPBC Act.							

Locality number Geographic locality descriptor			Northern Localities	Sydney Basin Localities		South-Western Localities	
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Criterion 21A Flora/Fauna Species in the locality PRIMARY CRITERION	Land zoned (7) or E2-E4 Environment Protection in the locality (ha) (rounded to nearest 10)		4,940	6,290	20	2,190	14,690
	'Protected' Flora and Fauna (as defined under the <i>National Parks and Wildlife Act 1974</i> (NPW Act 1974) and the <i>Threatened Species Conservation Act 1995</i> (TSC Act 1995))	Flora	0	0	0	0	0
		Fauna	0	0	0	0	0
	'Vulnerable' Flora and Fauna (as defined under NPW 1974 and the TSC Act 1995)	Flora	189	1,512	25	33	90
		Fauna	437	863	91	21	305
	'Endangered' Flora and Fauna (as defined under NPW 1974 and the TSC Act 1995)	Flora	816	1,234	91	0	106
		Fauna	4	164	75	8	24
	'Critically Endangered' Flora and Fauna (as defined under NPW 1974 and the TSC Act 1995)	Flora	0	0	0	0	0
		Fauna	0	38	1	0	1
Criterion 21B Flora/Fauna Species within the representative <u>Site</u> PRIMARY CRITERION	Land zoned (7) or E2-E4 Environment Protection (ha) (rounded to nearest 10)	Maximum Airport	30	60	0	10	1,460
	Protected flora within the footprint of airport (ha)	Maximum Airport	0	0	0	0	0
		Type 1 Airport	0	0	0	0	0
		Type 2 Airport	0	0	0	0	0
		Type 3 Airport	0	0	0	0	0
		Type 4 Airport	0	0	0	0	0
	Vulnerable flora within the footprint of airport (ha)	Maximum Airport	2	0	2	0	19
		Type 1 Airport	2	0	2	0	14
		Type 2 Airport	1	0	2	0	14
		Type 3 Airport	0	0	0	0	12
		Type 4 Airport	0	0	0	0	6
	Endangered flora within the footprint of airport (ha)	Maximum Airport	236	0	2	0	11
		Type 1 Airport	232	0	1	0	3
		Type 2 Airport	77	0	1	0	2
		Type 3 Airport	8	0	1	0	1
		Type 4 Airport	4	0	0	0	0

Locality number Geographic locality descriptor			Northern Localities	Sydney Basin Localities		South-Western Localities	
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	Critically endangered flora within the footprint of airport (ha)	Maximum Airport	0	0	0	0	0
		Type 1 Airport	0	0	0	0	0
		Type 2 Airport	0	0	0	0	0
		Type 3 Airport	0	0	0	0	0
		Type 4 Airport	0	0	0	0	0
	Protected fauna within the footprint of airport (ha)	Maximum Airport	0	0	0	0	0
		Type 1 Airport	0	0	0	0	0
		Type 2 Airport	0	0	0	0	0
		Type 3 Airport	0	0	0	0	0
		Type 4 Airport	0	0	0	0	0
	Vulnerable fauna within the footprint of airport (ha)	Maximum Airport	36	18	3	1	11
		Type 1 Airport	34	18	0	1	6
		Type 2 Airport	24	17	0	1	6
		Type 3 Airport	6	16	0	1	6
		Type 4 Airport	3	13	0	0	3
	Endangered fauna within the footprint of airport (ha)	Maximum Airport	0	1	7	0	0
		Type 1 Airport	0	1	6	0	0
		Type 2 Airport	0	1	5	0	0
		Type 3 Airport	0	1	0	0	0
		Type 4 Airport	0	1	0	0	0
	Critically endangered fauna within the footprint of airport (ha)	Maximum Airport	0	2	0	0	0
		Type 1 Airport	0	2	0	0	0
		Type 2 Airport	0	2	0	0	0
		Type 3 Airport	0	2	0	0	0
		Type 4 Airport	0	2	0	0	0
Criterion 22 Indigenous cultural heritage and heritage items	Aboriginal objects, places and other heritage values within site boundary	Nearby	3 sites: Narara Creek – 45-3-1066 and 45-3-1066 Glen Allen – 45-3-1390 Belltrees – 45-3-1408	1 site: Ebenezer – 45-5-0069	No Indigenous cultural heritage and heritage items.	No Indigenous cultural heritage and heritage items.	No Indigenous cultural heritage and heritage items.
		Maximum	4 sites: Somersby – 45-3-2114 Somersby – 45-3-2115 SIE 12 – 45-3-3347 Somersby – 45-3-1394	No Indigenous cultural heritage and heritage items.	4 sites: OS2 – 45-5-3806 OS3 – 45-5-3808 Isolated Artefacts 1 – 45-5-3802 Isolated Artefacts 2 – 45-5-3803	No Indigenous cultural heritage and heritage items.	3 sites: TLC5 – 52-2-2117 TPA1 – 52-2-3188 Wallandoola Site 30 – 52-2-1265

Locality number Geographic locality descriptor			Northern Localities	Sydney Basin Localities		South-Western Localities	
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		Type 1	As for Maximum airport.	No Indigenous cultural heritage and heritage items.	3 sites: OS2 – 45-5-3806 OS3 – 45-5-3808 Isolated Artefacts 1 – 45-5-3802	No Indigenous cultural heritage and heritage items.	As for Maximum airport.
		Type 2	As for Maximum airport.	No Indigenous cultural heritage and heritage items.	As for Type 1 airport.	No Indigenous cultural heritage and heritage items.	As for Maximum airport.
		Type 3	As for Maximum airport.	No Indigenous cultural heritage and heritage items.	As for Type 1 airport.	No Indigenous cultural heritage and heritage items.	As for Maximum airport.
		Type 4	3 sites: Somersby – 45-3-2114 Somersby – 45-3-2115 SIE 12 – 45-3-3347	No Indigenous cultural heritage and heritage items.	As for Type 1 airport.	No Indigenous cultural heritage and heritage items.	1 site: TPA1 – 52-2-3188
		Note: As listed in the Aboriginal Heritage Information Management System (AHIMS) managed by the NSW Government Office of Environment and Heritage (then the Department of Environment, Climate Change and Water (DECCW)) on public or private land. Note - this does not preclude the possibility of further sites at a given locality upon close examination, including possibly significant sites. 'Nearby' includes Aboriginal heritage items within 1km from boundary of maximum airport footprint. Information given is AHIMS site name and code.					
Criterion 23 Non-Aboriginal heritage items	Location of State cultural heritage items	Maximum Airport	No cultural heritage sites.	1 site: Stannix Park House, cattle tanks and site (partially within footprint).	No cultural heritage sites.	No cultural heritage sites.	No cultural heritage sites.
		Type 1 Airport	No cultural heritage sites.	As per Maximum airport.	No cultural heritage sites.	No cultural heritage sites.	No cultural heritage sites.
		Type 2 Airport	No cultural heritage sites.	As per Maximum airport.	No cultural heritage sites.	No cultural heritage sites.	No cultural heritage sites.
		Type 3 Airport	No cultural heritage sites.	As per Maximum airport.	No cultural heritage sites.	No cultural heritage sites.	No cultural heritage sites.
		Type 4 Airport	No cultural heritage sites.	No cultural heritage sites.	No cultural heritage sites.	No cultural heritage sites.	No cultural heritage sites.
		Nearby	1 site: Mount Penang Parklands (The Farm Home for Boys, Girrakool, Kariong Juvenile Detention Centre)	4 sites: Wilberforce Cemetery Cattai Estate Former Macquarie Schoolhouse/Chapel and St. John's (Blacket) Church Ebenezer Church (United) Old Schoolhouse, Cemetery and Tree	3 sites: 2260126 - St Thomas' Anglican Church and Cemetery 2260128 - Fernhill, outbuildings and landscape 2260125 - The Cottage	No cultural heritage sites.	No cultural heritage sites.
	Source: State Heritage Register						
Criterion 24 State Significant Sites PRIMARY CRITERION	Does the site include a State Significant Site (gazetted under Schedule 3 of the <i>Major Development SEPP 2005</i>)		No	No	No	No	No
	Number of State specified sites (number and type)		None	None	None	None	None
	Identification of any State Significant Sites in the locality		Wyang Employment Zone Warnervale Town Centre	None	None	None	None
Criterion 25 Flood risk at site	Is site potentially flood affected (based on current LEP Flood mapping)		No	Yes	No	No	No

Locality number Geographic locality descriptor		Northern Localities	Sydney Basin Localities		South-Western Localities	
		5 Central Coast	10 Hawkesbury	12 Nepean	13 Burragorang	14 Cordeaux-Cataract
Criterion 26 Bushfire risk at site	Land that is shown as 'Bushfire prone land' under s 146 of the <i>NSW Environmental Planning & Assessment Act 1979</i>	Entire site is either Bushfire Prone Land – Vegetation Category 1; Bushfire Prone Land – Vegetation Category 2; or Bushfire Prone Land – Vegetation Buffer.	Entire site is Bushfire Prone Land – Vegetation Category 1; Vegetation Category 2; and Vegetation Buffer.	Parts of the site are Bushfire Prone Land – Vegetation Category 1; and Vegetation Buffer.	Parts of the site are Bushfire Prone Land – Vegetation Category 1; and Vegetation Buffer.	Parts of the site are Bushfire Prone Land – Vegetation Category 1 and Vegetation Buffer
Criterion 27 Earthquake / other disaster	Rating on the 'Earthquake hazard map of Australia – 1991' Acceleration coefficient (a) 10 per cent chance of being exceeded in 50 years	0.09	0.08	0.08	0.10	0.10
	Occurrence of historic earthquakes in locality or site Severity, Date	Nearest Reported: Newcastle 5.6, 1989	Nearest Reported: Newcastle 5.6, 1989	Nearest Reported: Newcastle 5.6, 1989	Nearest Reported: Robertson (5.6, 1961) Picton (5.6, 1973)	Nearest Reported: Robertson (5.6, 1961) Picton (5.6, 1973)
	Note: While there are differences between the seismicity potential across these sites, this factor is not likely to be a differentiator in respect of suitability of the site for an airport in overall terms and may only influence the engineering design of structures.					
Criterion 28 Land remediation and contamination (i.e. leakages)	Land that is included on: - List of NSW contaminated sites notified to the NSW Government Office of Environment and Heritage; and - Contaminated Land: Record of Notices	No contaminated sites (as per the <i>Contaminated Land Management Act 1997</i>) have been notified within the vicinity of the proposed locality.	No contaminated sites (as per the <i>Contaminated Land Management Act 1997</i>) have been notified within the vicinity of the proposed locality.	No contaminated sites (as per the <i>Contaminated Land Management Act 1997</i>) have been notified within the vicinity of the proposed locality.	No contaminated sites (as per the <i>Contaminated Land Management Act 1997</i>) have been notified within the vicinity of the proposed locality.	No contaminated sites (as per the <i>Contaminated Land Management Act 1997</i>) have been notified within the vicinity of the proposed locality.
	Note: The fact that there are notifications does not preclude the possibility that, on closer examination, a given site will have issues of land contamination that would need to be addressed.					
Criterion 29 Presence of or potential for underground mining activity	Principal resources on, or underlying the site	Coal	Coal	Coal	Coal	Coal
	Mining subsidence (according to information sourced from Mine Subsidence Board)	Not in designated mine subsidence area.	Not in designated mine subsidence area.	Not in designated mine subsidence area.	Not in designated mine subsidence area.	In designated mine subsidence district. This location will need to be investigated further regarding mine subsidence.
	Coal applications and titles covering the site	No – not at Somersby, but elsewhere in the locality.	No	No	Yes - Partially	Yes - Partially
	Minerals applications and titles covering the sites	Yes	Yes	Yes	Yes	Yes
	Petroleum applications and titles covering the site	Yes	Yes	Yes	Yes	Yes
	Note: Data sourced from http://www.minerals.nsw.gov.au/mv2web/mv2?cmd=MainMap&topic=min# . In addition, there are many major industrial minerals sites scattered throughout the Sydney Region, such as aggregates quarries, sand, and dimension stone.					
Criterion 30 Unexploded Ordnance Risks (UXO) PRIMARY CRITERION	Risk of incomplete site remediation for UXO	No UXO risk sites identified in the locality.	No UXO risk sites identified in the locality.	Would occupy part of Commonwealth land at Orchard Hills which may contain UXO potential.	No UXO risk sites identified in the locality.	No UXO risk sites identified in the locality.
	Comment on impact on new capacity created/unlocked	None	None	None – no representative airports identified close to this area.	None	None

Source: WorleyParsons/AMPC

Matrix 2

Comparative assessment of greenfield localities shortlisted in Phase 2
Part B: Search of *Environment Protection and Biodiversity Conservation Act 1999* (Refer to actual EPBC Act reports for details unless listed)

The following data has been sourced from a database compiled under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EPBC Act has national application and is the framework used to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places – defined in the EPBC Act as matters of national environmental significance (i.e. NES). The assessment was undertaken using a nominal 5km radius from a centre point of each airport site.

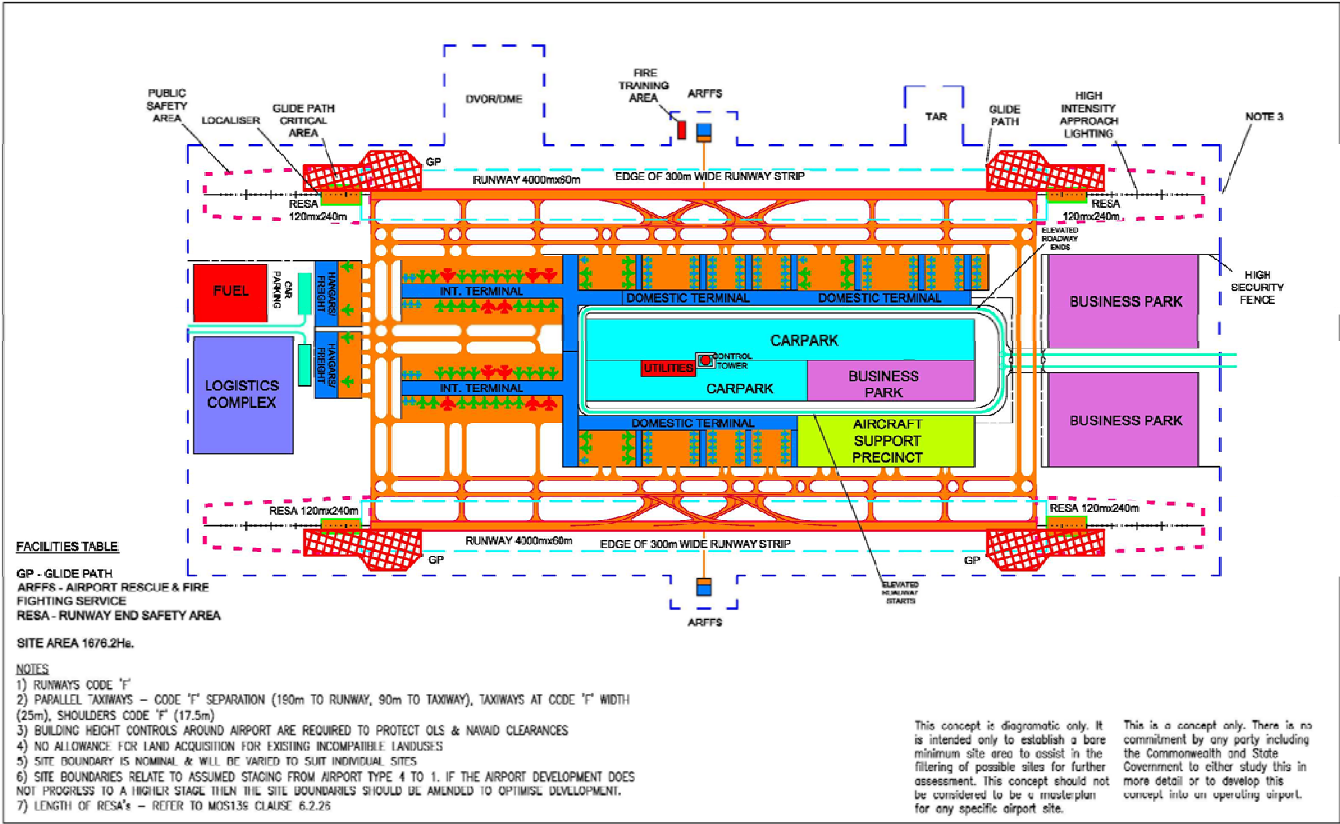
Note: there will be differences in the results of this assessment and those compiled using the NSW legislation for State important flora, fauna and heritage places (Criterion 21 in Part A) as assessments in Part A were undertaken based on State legislation and airport site footprints.

		Greenfield locality number				
		Northern Localities	Sydney Basin Localities		South-western Localities	
Refer to Locality Identification map		5	10	12	13	14
Matters of National Environmental Significance	World Heritage Properties	None	None	None	None	None
	National Heritage Places	None	1 First Hawkesbury Farms NSW	None	None	None
	Wetlands of International Significance (Ramsar Wetlands)	None	None	None	None	None
	Great Barrier Reef Marine Park	None	None	None	None	None
	Commonwealth Marine Areas	None	None	None	None	None
	Threatened Ecological Communities	None	3	2	3	3
	Threatened Species	30	26	19	29	25
	Migratory Species	14	14	14	14	14
Other matters protected by the EPBC Act	Commonwealth Lands	1	1 Australian Telecommunication Commission	3 Defence 1CAD Orchard Hills Kingswood Defence – RANMME (DEOH) Commonwealth Land	2 Australian Telecommunication Commission Commonwealth Trading Bank of Australia	None
	Commonwealth Heritage Places	None	None	1 Orchard Hills Cumberland Plain Woodland NSW	None	None
	Listed Marine Species	12	12	12	12	12
	Whales and Other Cetaceans	None	None	None	None	None
	Critical Habitats	None	None	None	None	None
	Commonwealth Reserves	None	None	None	None	None
Report Summary for Extra Information	Place on the Register of the National Estate (RNE)	3 Brisbane Water National Park (1981 boundary) Howe Aboriginal Area Narara Area	6 Macquarie School House Manse of Ebenezer Church (former) Rose Cottage St Johns Anglican Church St Johns Anglican Church Group Uniting Church, Old Schoolhouse and Curtilage	6 Mulgoa Natural Area Orchard Hills Cumberland Plain Woodland Fernhill Setting Mulgoa Group and Landscape St Thomas Anglican Church and Cemetery The Cottage	2 St Matthews Church and Courtyard The Hermitage	1 Upper Nepean Water Catchment
	State and Territory Reserves	None	None	None	None	None
	Regional Forest Agreements	1	None	None	None	None
	Invasive Species	17	17	17	17	17
	Nationally Important Wetlands	None	None	None	None	None
	EPBC Act Referrals	4	2	9	1	2

Source: WorleyParsons/AMPC analysis

Matrix 2 Comparative assessment of greenfield localities shortlisted in Phase 2
Part C: Maps and Figures: Indicative airport type templates used to populate Matrix 2

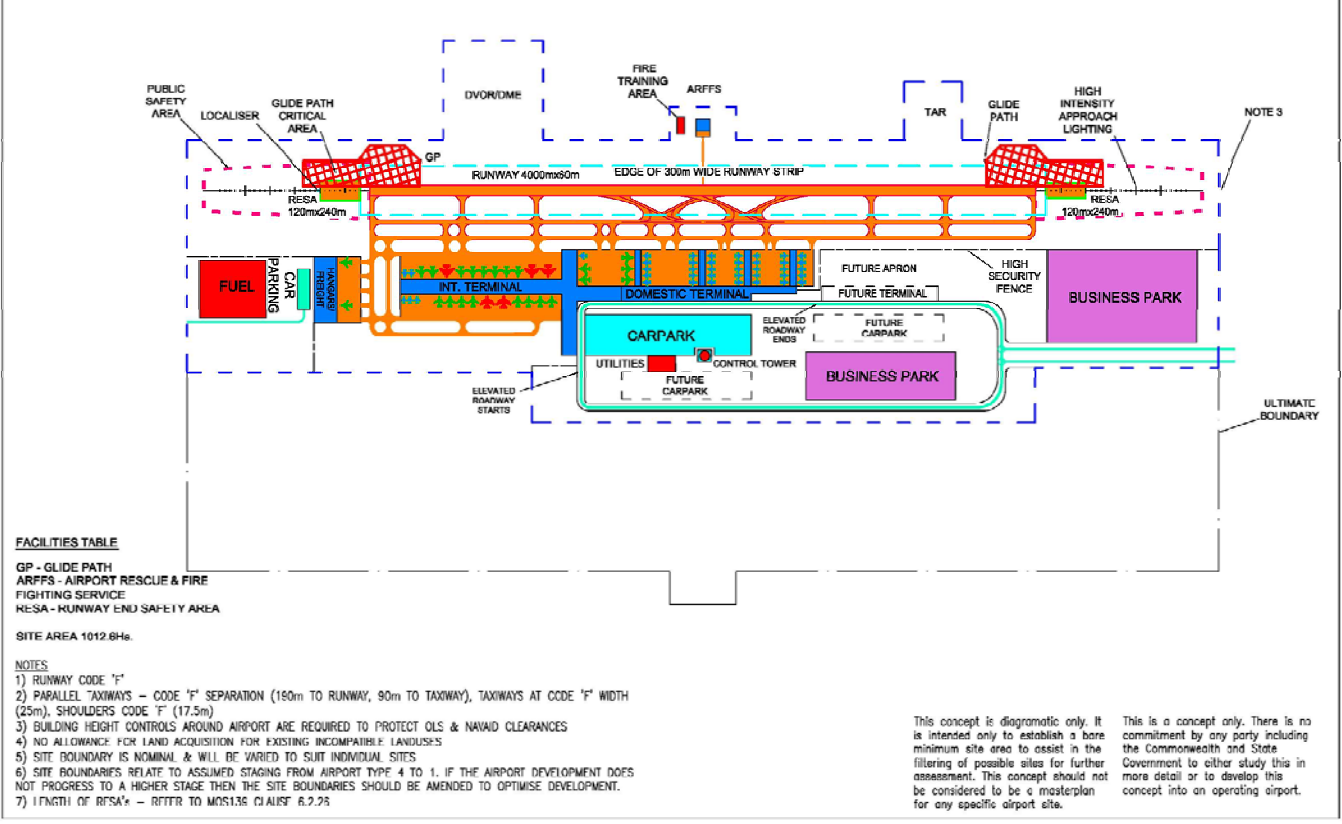
Matrix 2 Indicative Maximum Type 1 Airport (parallel runways)



SYDNEY REGION AIRPORTS - AIRPORT TYPE 1
INDICATIVE BASIS FOR HIGH ORDER COSTING
MAXIMUM DEVELOPMENT (>70 MILLION PAX.)

Source: WorleyParsons/AMPC

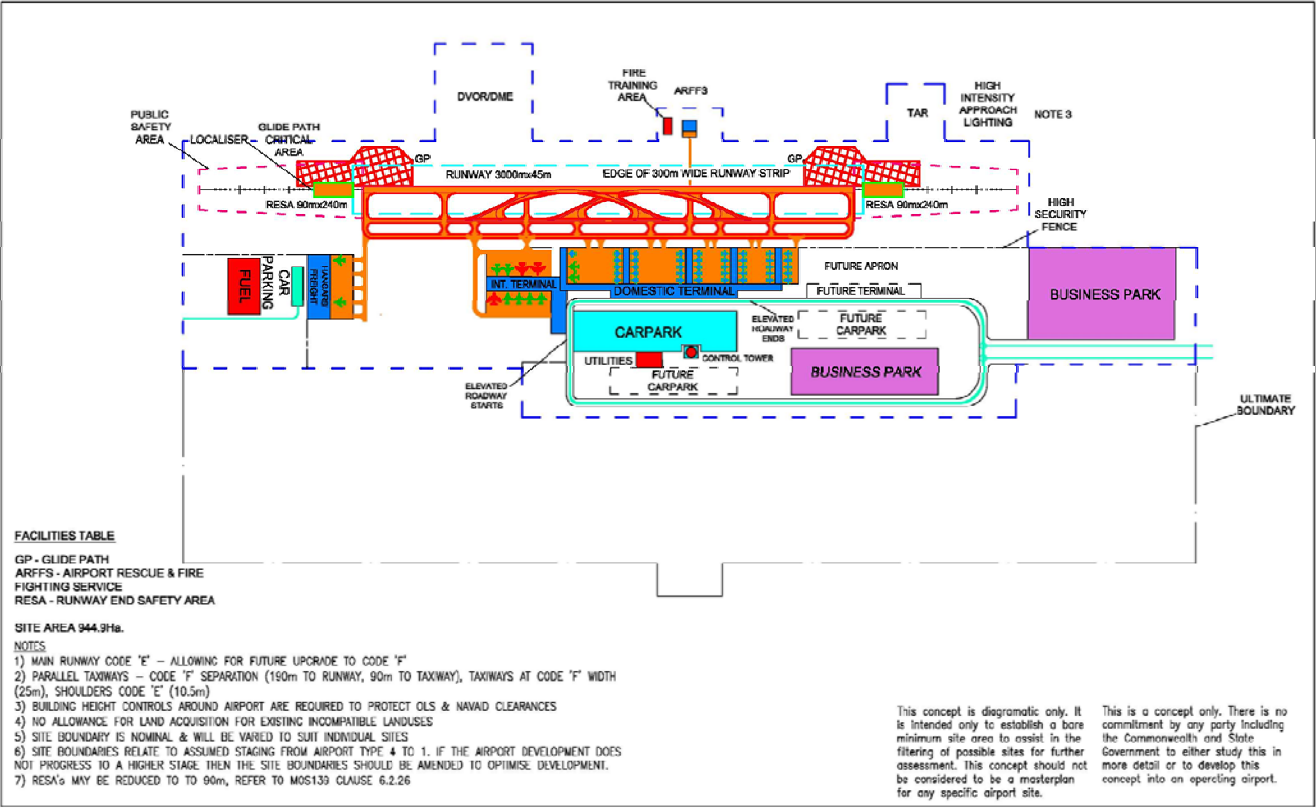
Matrix 2 Indicative Type 1 Airport (single runway)



SYDNEY REGION AIRPORTS - AIRPORT TYPE 1
INDICATIVE BASIS FOR HIGH ORDER COSTING
MEDIUM TERM DEVELOPMENT (35 MILLION PAX.)

Source: WorleyParsons/AMPC

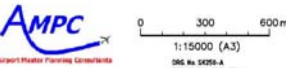
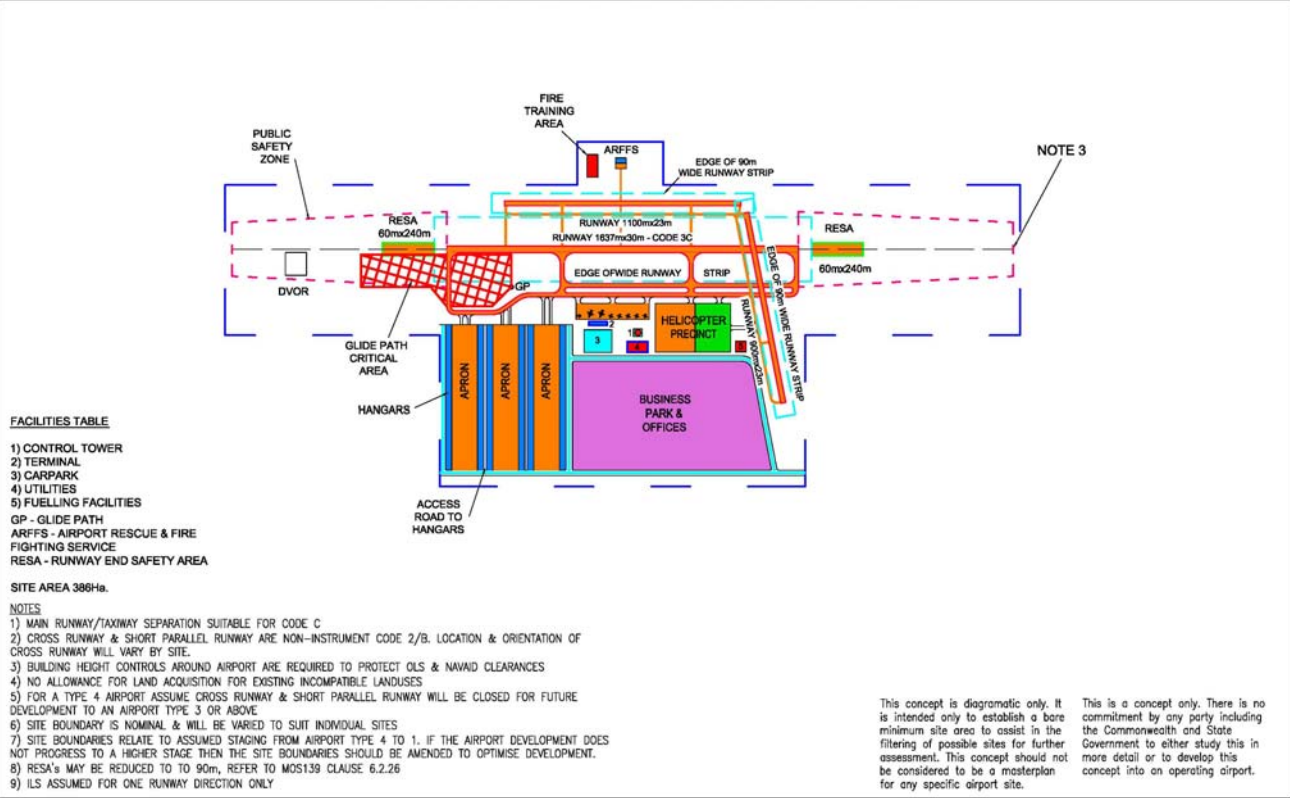
Matrix 2 Indicative Type 2 Airport



SYDNEY REGION AIRPORTS - AIRPORT TYPE 2
INDICATIVE BASIS FOR HIGH ORDER COSTING
MEDIUM TERM DEVELOPMENT (25 MILLION PAX)

Source: WorleyParsons/AMPC

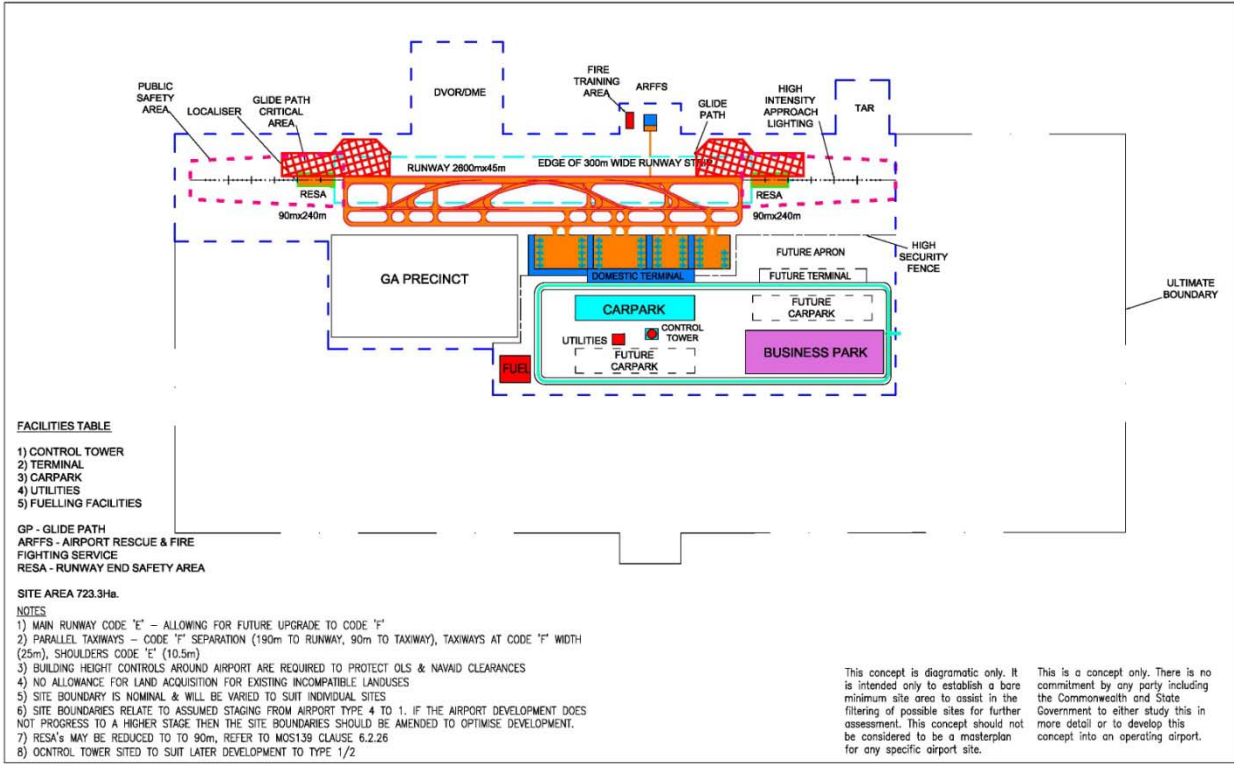
Matrix 2 Indicative Type 4 Airport



SYDNEY REGION AIRPORTS - AIRPORT TYPE 4
INDICATIVE BASIS FOR HIGH ORDER COSTING
LONG TERM DEVELOPMENT (1 MILLION PAX)

Source: WorleyParsons/AMPC

Matrix 2 Indicative Type 3 Airport



SYDNEY REGION AIRPORTS - AIRPORT TYPE 3
INDICATIVE BASIS FOR HIGH ORDER COSTING
MEDIUM TERM DEVELOPMENT (20 MILLION PAX)

Source: WorleyParsons/AMPC

Matrix 3 Comparative assessment of suitable sites analysed in Phase 4 of the greenfield assessment process

Matrix 3 **Comparative assessment of suitable sites analysed in Phase 4**
Part A: Type 1 maximum airports

Locality Name		Central Coast	Central Coast	Hawkesbury	Nepean	Nepean	Nepean	Nepean	Burragorang	Cordeaux-Cataract	Cordeaux-Cataract
Site Name		Wallarah	Somersby	Wilberforce (RAAF Relocated)	Luddenham	Badgerys Creek	Bringelly	Greendale	Mowbray Park	Wilton	Wallandoola
General Site Attributes	Geographic Place Name	Wallarah	Somersby	Wilberforce	Luddenham	Badgerys Creek	Bringelly	Greendale	Mowbray Park	Wilton	Wilton
	Local Government Area (LGA)	Wyong Shire	Gosford	Hawkesbury	Penrith Liverpool	Liverpool	Liverpool Camden	Liverpool Camden	Wollondilly Shire	Wollondilly Shire	Wollondilly Shire Wollongong
	Local Environmental Plan (LEP)	Wyong LEP 1991 SEPP (Major Projects) 2005	Gosford Interim Development Order 122	Hawkesbury LEP 1989	Penrith LEP 2010 Liverpool LEP 2008	Liverpool LEP 2008	Liverpool LEP 2008 Camden LEP 2010	Liverpool LEP 2008 Camden LEP 2010	Wollondilly LEP 2011	Wollondilly LEP 2011	Wollondilly LEP 2011 Wollongong LEP 2009
	Site Zoning	1(a) Rural 1(1) Rural (Production) 1(c) Non-Urban Constrained Land Zone 2(a) Residential 2(e) Urban Release Area 4(e) Regional Industry and Employment Development 5(a) Special Uses 5(b) Special Uses - Railway 5(c) Local Road Reservation 5(d) Arterial Road Reservation 6(a) Open Space and Recreation 7(2) Conservation (Secondary) 7(g) Wetlands Management 10(a) Investigation Precinct B2 Local Centre E2 Environmental Conservation IN1 General Industrial R1 General Residential RE1 Public Recreation SP2 Infrastructure (water management)	1(a) Rural - Agricultural 4(a) Industrial - General 5 Special Uses - General Purpose 6(b) Open Space - Special Purpose 7(b) Environmental Protection - Scenic Protection	1(b) Rural "B" 1(c1) Rural "C1" 5(a) Special Uses "A" 6(a) Open Space (Existing Recreation) 7(a) Environmental Protection (Wetlands) 7(d1) Environmental Protection (Scenic)	E2 Environmental Conservation R2 Low Density Residential R5 Large Lot Residential RU1 Primary Production RU2 Rural Landscape RU4 Rural Small Holdings SP1 Special Activities (defence) SP2 Infrastructure (classified road) SP2 Infrastructure (water supply system) Deferred Matter	RU1 Primary Production RU4 Rural Small Holdings SP1 Commonwealth Activities SP2 Infrastructure (classified road)	R5 Large Lot Residential RU1 Primary Production RU4 Rural Small Holdings SP1 Special activities (Commonwealth activities) SP2 Infrastructure (Educational establishment)	E1 National Parks and Nature Reserves RU1 Primary Production SP2 Infrastructure (Educational establishment)	RU1 Primary Production RU2 Rural Landscape SP2 Infrastructure (road)	E2 Environmental Conservation RU2 Rural Landscape SP2 Infrastructure (road)	E2 Environmental Conservation
	Draft LEP (that has been the subject of public consultation under the EP&A Act 1979)	N/A (not yet on exhibition)	Draft Gosford LEP 2009 E2 Environmental Conservation IN1 General Industrial RE1 Public Recreation RU1 Primary Production RU2 Rural Landscape RU5 Village SP2 Infrastructure (research station) SP2 Infrastructure (road)	Draft Hawkesbury LEP 2011 RU1 Primary Production RU2 Rural Landscape RU4 Rural Small Holdings SP2 Infrastructure (classified road) SP2 Infrastructure (water supply)	N/A	N/A	N/A	Draft Camden LEP 2009 RU1 Primary Production	N/A	N/A	N/A
	Estimated population within 30km radius of Site	347,900	306,500	553,500	1,114,300	1,146,200	1,001,200	693,100	122,200	285,700	292,500

Locality Name		Central Coast	Central Coast	Hawkesbury	Nepean	Nepean	Nepean	Nepean	Burragorang	Cordeaux-Cataract	Cordeaux-Cataract
Site Name		Wallarah	Somersby	Wilberforce (RAAF Relocated)	Luddenham	Badgerys Creek	Bringelly	Greendale	Mowbray Park	Wilton	Wallandoola
	Estimated population within 15km radius of Site	119,800	111,800	66,300	139,000	132,300	104,100	43,200	28,000	9,700	43,400
	Note: Estimated population based on radius from site centre. Source: ABS Census 2006 (rounded to nearest '00).										
	Site Footprint	1,676ha	1,465ha	2,187ha	1,679ha	1,669ha Additional Area 281ha	1,676ha	1,368ha	1,676ha	1,783ha	1,883ha
	Runway Length and Width (Alignment)	4,000 m x 60 m (17/35)	2,500 m x 60 m (09/27)	2,500 m x 60 m (10/28)	2,500 m x 60 m (01/19)	2,500 m x 60 m (14/32)	4,000 m x 60 m (15/33)	2,500 m x 60 m (17/35)	4,000 m x 60 m (18/36)	2,500 m x 60 m (08/26)	2,500 m x 60 m (07/25)
		2,500 m x 60m (17/35)	3,500 m x 60 m (18/36)	3,500 m x 60 m (01/19)	4,000 m x 60 m (01/19)	2,500 m x 60 m (05/23)	2,500 m x 60m (15/33)	4,000 m x 60 m (17/35)	2,500 m x 60m (18/36)	2,500 m x 60m (18/36)	2,500 m x 60 m (17/35)
			4,000 m x 60 m (18/36)	4,000 m x 60 m (01/19)		4,000 m x 60 m (05/23)				4,000 m x 60 m (18/36)	4,000 m x 60 m (17/35)
	Key Airport Facilities (assumed in Site footprint)	2x Business Parks, Logistics Complex, Commuter Car Park.	3x Business Parks, Logistics Complex, Aircraft Support Precinct, Commuter Car Park.	2x Business Parks, Logistics Complex, Aircraft Support Precinct, Commuter Car Park.	3x Business Parks, Logistics Complex, Commuter Car Park.	2x Business Parks, Logistics Complex, Commuter Car Park.	2x Business Parks, Logistics Complex, Commuter Car Park.	2x Business Parks, Logistics Complex, Aircraft Support Precinct, Commuter Car Park.	2x Business Parks, Logistics Complex, Commuter Car Park.	2x Business Parks, Logistics Complex, Commuter Car Park.	Business Parks, Logistics Complex, Aircraft Support Precinct, Commuter Car Park.
	Site Capacity (aircraft movements)	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.	Up to 100 movements per hour or 370,000 movements per year.
	Site Capacity (passenger movements)	Up to 65 million per year based on passengers per aircraft mix of 195 on long runway and assuming 140 on short runway (as per 2009 Sydney Airport Master Plan). 42 million based on 130 passengers per aircraft on long runway and 80 passengers per aircraft on short runway.	Up to 72 million per year based on passengers per aircraft mix of 195 on long runway, as per 2009 Sydney Airport Master Plan). 48 million based on 130 passengers per aircraft.	Up to 72 million per year based on passengers per aircraft mix of 195 on long runway, as per 2009 Sydney Airport Master Plan). 48 million based on 130 passengers per aircraft.	Up to 65 million per year based on passengers per aircraft mix of 195 on long runway and assuming 140 on short runway (as per 2009 Sydney Airport Master Plan). 42 million based on 130 passengers per aircraft on long runway and 80 passengers per aircraft on short runway.	Up to 65 million per year based on passengers per aircraft mix of 195 on long runway and assuming 140 on short runway (as per 2009 Sydney Airport Master Plan). 42 million based on 130 passengers per aircraft on long runway and 80 passengers per aircraft on short runway.	Up to 65 million per year based on passengers per aircraft mix of 195 on long runway and assuming 140 on short runway (as per 2009 Sydney Airport Master Plan). 42 million based on 130 passengers per aircraft on long runway and 80 passengers per aircraft on short runway.	Up to 65 million per year based on passengers per aircraft mix of 195 on long runway and assuming 140 on short runway (as per 2009 Sydney Airport Master Plan). 42million based on 130 passengers per aircraft on long runway and 80 passengers per aircraft on short runway.	Up to 65 million per year based on passengers per aircraft mix of 195 on long runway and assuming 140 on short runway (as per 2009 Sydney Airport Master Plan). 42million based on 130 passengers per aircraft on long runway and 80 passengers per aircraft on short runway.	Up to 65 million per year based on passengers per aircraft mix of 195 on long runway and assuming 140 on short runway (as per 2009 Sydney Airport Master Plan). 42 million based on 130 passengers per aircraft on long runway and 80 passengers per aircraft on short runway.	Up to 65 million per year based on passengers per aircraft mix of 195 on long runway and assuming 140 on short runway (as per 2009 Sydney Airport Master Plan). 42 million based on 130 passengers per aircraft on long runway and 80 passengers per aircraft on short runway.
	Note: Site capacity (by passengers and aircraft movements) assumes nil interaction with existing airports and that operations can be managed, albeit with extra track miles and associated economic penalties to operators.										
	Key Transport System/s within ~5kms of Site	F3 Sydney – Newcastle Freeway Sparks Road Main North Line	F3 Sydney – Newcastle Freeway Peats Ridge Road	Putty Road King Road	The Northern Road Elizabeth Drive	The Northern Road Badgerys Creek Road Elizabeth Drive	The Northern Road Greendale Road	Greendale Road The Northern Road	Montpellier Drive Barkers Lodge Road	Picton Road F5 Hume Freeway	Picton Road
	General terrain of Site	Rolling coastal plain drained by Wallarah Creek to Tuggerah Lake. Some open, some forested and some developed lands. Existing Airfield to the south.	Large elevated rectangular area of undulating planar rural land, as part of a dissected montane plateau.	Undulating terrain on the slopes of the Hawkesbury River valley with some areas of floodplain and open rural land, rising to higher ground the west and north.	Rolling planar terrain on the watershed between the Nepean River and Badgerys Creek and other headwaters of South Creek mostly in use for rural land activities.	Rolling planar terrain on the watershed between the Nepean River and Badgerys Creek mostly in use for rural land activities.	Rolling planar terrain on the watershed between the Nepean River and Badgerys Creek mostly in use for rural land activities.	Open rolling planar terrain within the catchment of the Nepean River mostly in use for rural land activities.	Elevated rectangular area of sloping planar in the upper portion valley of Monkey Creek with mostly developed rural uses.	Heavily dissected montane plateau with open rural and some long linear ridge lines adjoining the deep gorges of the major rivers.	Heavily dissected montane plateau with open rural and some long linear ridge lines adjoining the deep gorges of the major rivers.
	Geology	Multi-coloured chert sandstone quartzose sandstone shale and claystone	Multi-coloured chert sandstone quartzose sandstone shale and claystone	Sandstone and shale	Shale atop of sandstone	Sandstone and shale	Sandstone and shale	Sandstone and shale	Quartz sandstone with some shale	Sandstone and shale	Sandstone and shale
	Note: Geological information sourced from the Department of Primary Industries website, 1:500 000 geological maps. (http://www.dpi.nsw.gov.au/minerals/geological/geological-maps/1-500-000)										
	Soil Classification	Topsoil thickness layer 0.3m	Topsoil thickness layer 0.3m	Topsoil thickness layer 0.15m	Topsoil thickness layer 0.3m	Topsoil thickness layer 0.3m	Topsoil thickness layer 0.3m	Topsoil thickness layer 0.3m	Topsoil thickness layer 0.4m	Topsoil thickness layer 0.3m	Topsoil thickness layer 0.3m
		Subsoil layer 0.6m	Subsoil layer 0.7m	Subsoil layer 1.2m	Subsoil layer 0.6m	Subsoil layer 0.6m	Subsoil layer 0.6m	Subsoil layer 0.6m	Subsoil layer 0.7m	Subsoil layer 0.6m	Subsoil layer 0.6m
	Note: Soil classification information sourced from the Australian Soil Resource Information System (ASRIS) digital atlas website (http://www.asris.csiro.au/themes/Atlas.html#Atlas_Digital)										
	Major River Systems close to Site (e = Site well elevated above river systems)	Wyong River Wallarah Creek	Mooney Mooney Creek (e)	Bushells Lagoon Hawkesbury River	Nepean River Mulgoa Creek	Badgerys Creek Oak Creek	South Creek Town Rural Storage Lowes Creek	Nepean River Bringelly Creek	Monkey Creek	Avon River Cordeaux River (e)	Lake Cataract Cataract River (e)

Locality Name		Central Coast	Central Coast	Hawkesbury	Nepean	Nepean	Nepean	Nepean	Burragorang	Cordeaux-Catatract	Cordeaux-Catatract
Site Name		Wallarah	Somersby	Wilberforce (RAAF Relocated)	Luddenham	Badgerys Creek	Bringelly	Greendale	Mowbray Park	Wilton	Wallandoola
CRITERION 1 Accessibility of the Sydney land transport network (rail and state roads)	Kilometres to connect Site boundary to existing rail link	~2.5km to Warnervale Station	~4.5km to Ourimbah Station	~8km to Windsor Station	~9km to Kingswood Station ~16km to proposed Leppington Station	~11km to Werrington Station ~13km to proposed Leppington Station	~13km to proposed Leppington Station	~13km to Macarthur Station ~15km to proposed Leppington Station	~7km to Picton Station	~20km to Menangle Park Station ~25km to Macarthur station on Main South Railway	~11km to Douglas Park Station
	Likelihood of a rail link being constructed to, or near to the Site Note: distances are approximate (~) and straight line – additional length will be needed to accommodate grades and other constraints	An airport could either be served by planning the Site such that direct access to the existing railway was possible, or by construction of an airport specific spur line or deviation of the main north to address the site.	Unless the Site is accessed by a new alignment, possibly as a part of Sydney – Newcastle High Speed Line, requires ~21km airport specific spur line branching from the Main North Line in the vicinity of Ourimbah.	Requires ~7km airport specific extension of the Richmond Line on the existing rail network from the existing Richmond station.	Requires ~18km extension of the South West Rail Link now under construction or a ~12km airport specific spur line branching from Western Line in the vicinity of Werrington.	Requires ~11km extension of the South West Rail Link now under construction.	Requires ~7km extension of the South West Rail Link now under construction.	Requires ~13km extension of the South West Rail Link now under construction.	Requires > 5km airport specific spur line branching from the existing Main South Line near Picton or ~18km to near Menangle.	The Site is adjacent or incorporates the alignment of the partially constructed Maldon – Dombarton Railway. A short spur to an airport terminal may be needed.	The Site is ~12km from the alignment of the partially constructed Maldon – Dombarton Railway. A ~12km spur to an airport terminal would be required generally along the alignment of the Picton Road.
	Specific issues in constructing a rail link	The existing railway is at a similar level to the airport Site and the terrain for connections would be relatively easy. A Site in the same vicinity has been investigated for a rail stabling facility.	Existing railway is about 240m different in elevation to the existing, requiring construction in mountainous terrain, necessitating long tunnels.	Existing Railway is about 45m different in elevation. Major extension of the Richmond line required including crossing of Hawkesbury River and construction in hilly terrain.	Surface construction through rural and semi rural areas in easy terrain.	Surface construction through rural and semi rural areas in easy terrain.	Surface construction through rural and semi rural areas in easy terrain.	Surface construction through rural and semi rural areas in easy terrain.	Construction through rural and semi rural areas, probably requiring tunnels in hilly terrain.	Completion of the Maldon - Dombarton Railway would enable diesel hauled but not electric traction service to access the site. Electric traction would require extension of the electrification system from Macarthur.	Completion of the Maldon - Dombarton Railway would enable diesel hauled but not electric traction service to access the site. Electric traction would require extension of the electrification system from Macarthur.
	Capacity of the existing rail systems and implications of additional airport traffic requirements for additional capacity (not costed)	Requirements for providing additional capacity for 4 trains per hour: A new alignment or a tunnel between Hawkesbury River and Berowra due to the limit of capacity in Cowan Bank on Main Northern Railway.	Requirements for providing additional capacity for 4 trains per hour: A new alignment or a tunnel between Hawkesbury River and Berowra due to the limit of capacity in Cowan Bank on Main Northern Railway.	Requirements for providing additional capacity for 4 trains per hour: Duplication of Richmond Line If the Western Express Project goes ahead, there may not capacity issues on the Western Line.	Requirements for providing additional capacity for 4 trains per hour on the East Hills Line: Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification	Requirements for providing additional capacity for 4 trains per hour on the East Hills Line: Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification	Requirements for providing additional capacity for 4 trains per hour on the East Hills Line: Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification	Requirements for providing additional capacity for 4 trains per hour on the East Hills Line: Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification	Main Southern Railway/East Hills Line does not have sufficient capacity to serve a new airport. Requirements for providing additional capacity for 4 trains per hour on the Main South Line: Southern Sydney Freight Line needs to be in place as part of quadruplication to Glenfield Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification New refuges south of Macarthur	Main Southern Railway/East Hills Line does not have sufficient capacity to serve a new airport. Requirements for providing additional capacity for 4 trains per hour on the Main South Line: Southern Sydney Freight Line needs to be in place as part of quadruplication to Glenfield Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification New refuges south of Macarthur	Main Southern Railway/East Hills Line does not have sufficient capacity to serve a new airport. Requirements for providing additional capacity for 4 trains per hour on the Main South Line: Southern Sydney Freight Line needs to be in place as part of quadruplication to Glenfield Quadruplication between Revesby and Glenfield Sextuplication between Erskineville and Tempe Re-signalling and electrification New refuges south of Macarthur
	Comparative order of cost for rail link including rollingstock	~\$740	~\$2,190	~\$1,320	~\$1,130	~\$1,130	~\$1,130	~\$1,130	~\$930	~\$1,100	~\$1,630
	Source: WorleyParsons/AMPC estimates for representative airport sites.										
	Kilometres to connect Site boundary to existing designated state roads/highways	~2.5m to F3	~2.5m to F3 (eastern boundary of Site)	~25km to M7	~8km to Western Motorway (M4) ~15km to M7	~11km to Western Motorway (M4) ~10km to M7	~13km to M7	~18km to Western Motorway (M4) ~20km to M7	~16km to Hume Highway	~9km to Hume Highway	~10km to Hume Highway
	Specific issues in constructing a road link	The existing roadway (F3) is at a similar level to the airport site. The F3 would need to be diverted and the diverted road connected to the airport. Connection would be relatively easy.	The existing roadway (F3) is at a similar level to the airport Site and connections would be relatively easy.	The existing roadways (Wilberforce and Windsor Roads) would require an upgrade. Upgrade to the road bridge over the Hawkesbury River, connection would be relatively easy.	The existing roadways (The Northern Road and Elizabeth Drive) would require an upgrade, connection would be relatively easy.	The existing roadways (The Northern Road and Elizabeth Drive) would require an upgrade, connection would be relatively easy.	The existing roadways (The Northern Road and Bringelly Drive) would require an upgrade, connection would be relatively easy.	The existing roadways (Greendale Road, The Northern Road and Bringelly Drive) would require an upgrade, connection would be relatively easy.	The existing roadways (Barkers Lodge Road, Remembrance Drive and Woodbridge Road) would require an upgrade, connection would be relatively easy.	The existing roadways (Picton Road) would require an upgrade, connection would be relatively easy.	The existing roadways (Picton Road) would require an upgrade, connection would be relatively easy.
	Works required	8km road diversion of the Pacific Highway and connection to airport.	3km upgrade to Peats Ridge Road and connection to airport.	9km upgrade to Putty Road, Wilberforce Road and Windsor Road and connection to airport.	15km upgrade to The Northern Road and Elizabeth Drive and connection to airport.	8km upgrade to Elizabeth Drive and connection to airport.	12km upgrade to Bringelly Road and connection to airport.	15km upgrade to Greendale Road and Bringelly Drive, 2km extension of Greendale Road and connection to airport.	14km upgrade to Bakers Lodge Road and Remembrance Drive, 5km extension road and connection to airport.	20km upgrade to Picton Road and connection to airport.	20km upgrade to Picton Road and connection to airport.
	Cost of works to nearest \$ million	~\$108 million	~\$82 million	~\$259 million	~\$345 million	~\$192 million	~\$270 million	~\$369 million	~\$397 million	~\$456 million	~\$456 million

Locality Name		Central Coast	Central Coast	Hawkesbury	Nepean	Nepean	Nepean	Nepean	Burragorang	Cordeaux-Cataract	Cordeaux-Cataract
Site Name		Wallarah	Somersby	Wilberforce (RAAF Relocated)	Luddenham	Badgerys Creek	Bringelly	Greendale	Mowbray Park	Wilton	Wallandoola
	Note: Estimated costs for road construction are as follows: - Upgrade from a 2 lane corridor to 4 lane corridor - \$22 million/km (based on NSW Roads and Maritime Services (NSW RMS) cost estimates of upgrade to the Oxley Highway). - Diversion/Extension of road, new two lane two way road - \$11.5 million/km (based on NSW RMS cost estimate of diversion of The Camden Valley Way). - Airport connection, overpasses and connections - \$15.5 million each (based on Canberra Airport connection cost). - Bridge widening - \$114million/km (based on NSW RMS cost of Sea Cliff Bridge, Illawarra).										
2 Proximity to growth centres and commercial opportunities	Distance from Site boundary to identified commercial growth centres (Metro and Regional Strategies)	Tuggerah-Wyong Major Centre (~14km)	Gosford City Centre (~7km) Tuggerah-Wyong Major Centre (~14km)	Windsor Town Centre (~9km) Rouse Hill Planned Major Centre (~16km)	Penrith Regional City (~10km) Leppington Planned Major Centre (~16km) Mt Druitt Potential Major Centre (~14km)	Penrith Regional City (~15km) Leppington Planned Major Centre (~10km) Mt Druitt Potential Major Centre (~12km)	Leppington Planned Major Centre (~10km)	Leppington Planned Major Centre (~14km) Penrith Regional City (~21km) Mt Druitt Potential Major Centre (~22km)	Camden Town Centre (~23km) Campbelltown-Macarthur Major Centre (~35km)	Campbelltown-Macarthur Major Centre (~25km) Wollongong Regional City (~23km)	Campbelltown-Macarthur Major Centre (~22km)
	Percentage of footprint within North West or South West Growth Centre	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%
	N70 - 10 Event Contour impact on North West or South West Growth Centre	Nil	Nil	Low	Medium	High	High	High	Nil	Nil	Nil
3 Comparative Earthworks Estimate	Comparative cut plus fill earthworks volume to level Site (m³/ha) rounded to nearest '00.	97,800	177,500	87,300	80,900	115,400	126,900	119,000	197,900	208,900	149,200
	Comparative cost to prepare airport platform (nearest million)	~\$280 million	~\$530 million	~\$343 million	~\$284 million	~\$356 million	~\$407 million	~\$304 million	~\$680 million	~\$805 million	~\$564 million
	Note: Comparative cut plus fill earthworks volume in m³/ha to create a completely level airport footprint. Note: In practice airport sites do not have to be completely level over their whole area. Costs are based on adjusted earthworks volumes to account for this and for the different geotechnical material expected to be encountered on that site.										
4 Noise Impact on Residents	20 ANEC	10,700	4,180	10,250	3,290	3,200	3,990	1,920	5,920	290	1,280
	25 ANEC	3,420	790	2,290	1,170	1,360	970	650	3,250	130	240
	30 ANEC	1,930	200	780	460	540	310	220	1,520	60	110
	35 ANEC	970	100	330	110	200	110	80	610	30	50
	40 ANEC	380	50	110	50	100	50	30	300	10	30
	Distance (m) from Site boundary to nearest urban areas (as defined by NSW Department of Planning and Infrastructure)	0	1,950	0	0	3,750	4,300	1,950	2,450	750	4,000
	Number of Persons Exposed to >10 Number of Events >70dB(A)	60,360	8,080	33,600	43,130	52,400	32,460	12,670	13,680	1,950	11,880
	N70 person events (nearest '00)	2,534,200	670,600	2,020,800	1,545,200	1,668,000	1,284,600	499,200	799,400	81,500	324,800
	AIE (N70/Persons exposed)	40	80	60	40	30	40	40	60	40	30
	Note 1: Approximate population within noise contour categories based on site specific orientation of runway (nearest '0). Refer Australian Standard AS 2021-2000 Acoustics - aircraft noise intrusion - building siting and construction. Note 2: This study has chosen specific sites for more detailed assessment and BoM wind data has become available for some Sites. This is for comparative assessment and do not represent ANEC with ANEF contours endorsed by Airservices Australia as per of Ministerial Direction M37/99 and the <i>Airports Act 1996</i> , as inputs from Airservices Australia/CASA on design flight tracks. Any interactions between airports etc. will still be required. Note 3: The Department of Infrastructure and Transport considers that further metrics to ANEF/ ANEC give the decision makers a much clearer picture of what the outcomes will be if they approve the project, e.g. showing actual flight paths and the use of N70 contours and the number of aircraft noise events above 70 dBA. Person-Events Index (PEI) then allows the total noise load generated by each airport to be computed by summing, over the exposed population, the total number of instances where an individual is exposed to an aircraft event above a specified noise level (in this case N70), over a given time period. Note 4: $PEI(70) = \sum P_N N$ where P_N is the number of persons exposed to N70.										
5 Mine Subsidence	Designated mine subsidence zone present within Site (Percentage of Site within designated mine subsidence zone)	Yes (~20%)	No	No	No	No	No	No	No	Yes (~25%) Site is close to mine subsidence areas and operating mines. Extent of any old or current mines needs to be established.	No Site is close to mine subsidence areas and operating mines. Extent of any old or current mines needs to be established.
6 Number of Lots Requiring Acquisition	Approximate number of allotments within Site	500	190	380	140	40	180	70	100	40	10
	Average number of allotments per hectare within Site	0.298	0.130	0.370	0.081	0.018	0.103	0.048	0.057	0.023	0.003

Locality Name		Central Coast	Central Coast	Hawkesbury	Nepean	Nepean	Nepean	Nepean	Burragorang	Cordeaux-Cataract	Cordeaux-Cataract
Site Name		Wallarah	Somersby	Wilberforce (RAAF Relocated)	Luddenham	Badgerys Creek	Bringelly	Greendale	Mowbray Park	Wilton	Wallandoola
Based on number of lots directly impacted by Site footprint CRITERION 7 Airspace Interaction	Population within Site boundary (Census 2006) (rounded to nearest '0)	1,120	170	940	210	490	250	150	130	70	130
	See also input from Airservices Australia in the WorleyParsons/AMPC technical paper: "Airport Suitable Sites - Specified Localities" Inputs from CASA and Defence have not been incorporated into this analysis	Major Probable interaction with military airspace to the north and east. Several power stations in vicinity (potential danger areas due high velocity exhaust).	Major Probable interaction with operations to Sydney (Kingsford-Smith) Airport..	Major Probable interaction with operations to Sydney (Kingsford-Smith) Airport. Site within military airspace with issues for access routes. For maximum airport assumes RAAF Base Richmond closed and relocated.	Major The location of R536A and 536B within the nominal CTR boundary would not be compatible with the proposed 01/19 runway alignment. The Department of Defence Orchard Hills facility would have to be relocated. Potential impacts on flying training areas and Camden Airport. Extent of interaction with Sydney (Kingsford-Smith) Airport may be improved in comparison to Badgerys Creek as runway alignment more northerly than Badgerys Creek.	Major Potential impacts on flying training areas and Camden Airport. See note below.	Major Site is aligned north west - south east with the intention of minimising interaction with Holsworthy Airspace to the south east. Potential impacts on flying training areas and Camden Airport.	Major Site well south of the RAAF Base Richmond military airspace and minimises interaction with Orchard Hills Explosives depot airspace. Potential impacts on flying training areas and Camden Airport. May need to consider wind turbulence due to high terrain to the west.	Major Site well south of the RAAF Base Richmond military airspace and minimises interaction with Orchard Hills Explosives depot airspace. Potential impacts on flying training areas and Camden Airport. May need to consider wind turbulence due to high terrain to the west.	Major	Major
Note 1: In all cases the preliminary observations listed herein need to continue to be tested with relevant authorities: Airservices Australia; Department of Defence; Office of Airspace Regulation; existing airport operators and users at the feasibility stage. Potential conflicts or dependencies with RAAF Base Richmond and Sydney (Kingsford-Smith) Airport operations and Sydney basin traffic would require more detailed analysis by Department of Defence, Airservices Australia and/or the Office of Airspace Regulation. The general complexity of existing airspace within and adjacent to the Sydney Basin makes this ongoing review necessary. Major - Airspace where there are significant levels of civil air transport traffic and military activity, such as around Sydney, Williamtown, Nowra and Richmond, together with their respective CTR/CTA and operational procedures and requirements; or - Restricted Areas particularly those with provisional classifications of RA3 and RA2; or - Danger Areas associated with military flying training. Moderate - Airspace where there are significant levels of GA traffic, such as around Bankstown and Camden, together with their respective CTR (note in practice as Bankstown and Camden are relatively close to the larger airports, a potential moderate ranking is effectively outweighed by the factors affecting the larger airports); or - Restricted Areas with provisional classifications of RA1; or - Danger Areas associated with civil flying training; or - VFR transit routes. Minor - Airspace where there are lower levels of civil traffic and non-towered aerodromes; or - Danger Areas. Note 2: This assessment of Badgerys Creek has been prepared on the basis of demonstrating technical consideration of all possible sites considered in this study. The following consideration of airspace issues is based generally around the runway geometry determined during the various EIS processes undertaken since 1985 (i.e. a runway alignment of 05/23). The 18/36 runway option shown in the most recent EIS has not been considered.											
CRITERION 8 Capacity for Future Expansion	Capacity for future expansion to Maximum Airport	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable
CRITERION 9 Flood Risk at Site		Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Not identified by Local Authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Part of the site identified as within 1 in 100 Year Flood and PMF Flood. Local minor creeks may flood intermittently.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Site identified as within Flood Prone Land and Flood Planning Area (designated by Liverpool City Council). Site identified as within 5%, 1% and PMF Flood line (designated by Camden City Council). Note: Greendale - Flood prone land is land susceptible to flooding by the largest flood that could conceivably occur at a particular location estimated from the probable maximum precipitation.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Council Flood mapping does not include area of airport footprint. Not identified by Local Authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Council Flood mapping does not include area of airport footprint. Not identified local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.

Locality Name		Central Coast	Central Coast	Hawkesbury	Nepean	Nepean	Nepean	Nepean	Burratorang	Cordeaux-Cataract	Cordeaux-Cataract
Site Name		Warrarah	Somersby	Wilberforce (RAAF Relocated)	Luddenham	Badgerys Creek	Bringelly	Greendale	Mowbray Park	Wilton	Wallandoola
CRITERION 10 Additional potential infrastructure affected by airport footprint, causing dislocations relocations and other items likely to involve costs	Airservices and Defence	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	Requires closure and relocation of RAAF Base Richmond.	Requires closure and relocation of Orchard Hills Explosives Depot.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.
	Minor Airports and Airfields in Close Proximity	Warnervale Airfield	Somersby Airfield	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	The Oaks Airfield.	Wedderburn Airfield. Wilton Parachuting Club.	Wedderburn Airfield. Wilton Parachuting Club.
	Railways	Realignment of Main North Line or grade separation may be needed.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	Some realignment of the incomplete Maldon – Dombarton Railway may be needed	No major items as yet identified to be directly affected.
	Roads	F3 Freeway Motorway Link Road Sparks Road Mountain Road Dakara Road Bruce Cr Warnervale Road Hakone Road	Wisemans Ferry Road Anembo Road Silvesters Road Robinson Road Elwins Road Lackersteens Road Keighley Ave Grants Road Vitasalo Road Lutana Road Nyah Road Bimbil Road Debenham Road North Somersby Falls Road Howes Road Ulinga Road	Putty Road Singleton Road Kurmond Road Creek Ridge Road Blacktown Road Vollers Ln Reserve Road Godalla Road Old East Kurrajong Road Lamrock Ave Moles Road Kamrock Grv Hayes Road Wenban Road Uworra Road Rockyhall Pl Stannix Place Road Carrs Road Argents Road Sargents Road Salters Road McKinnons Road Roland Ln Stewarts Ln Geakes Road Joshua Road Thomas Road Reserve Road Sheppards Road	The Northern Road Elizabeth Dr Park Road Littlefields Road Adams Road Gates Road Galaxy Road Queenshill Dr Oak Road	The Northern Road Badgerys Creek Road Taylors Road Winston Cl Gardiner Road Pitt St Longley Road Leggo Road Fuller St Ferndale Road Anton Road Jagelman Road Willowdene Ave Vicar Park Ln Dwyer Road	Greendale Road Dwyer Road Findlay Road Francis St	Wolstenholm Ave Orient Road Cut Hill Road	Bakers Lodge Road Mowbray Park Road Montpelier Dr Craigend Road Evelyns Ridge Road Victoria Park Road	Picton Road Macarthur Dr	No major items as yet identified to be directly affected.
	Water Supply	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	Requires relocation or encasement of Sydney Water Supply Pipelines.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.
	Major Electricity Supply (OLS = possible conflict with obstacle limitation surface)	2 sets of 330 KV power lines need re-alignment. 2 sets of 330kV power lines (OLS) – north. 500kV power line (OLS) – north.	330kV power lines (OLS) – north west.	500kV power line (OLS) – east.	330kV power line needs re-alignment.	330kV power line needs re-alignment.	330kV power line needs re-alignment. 330kV power lines (OLS) south.	2 sets of 330kV power lines need re-alignment.	330kV power line needs re-alignment.	330kV power line needs re-alignment.	No major items as yet identified to be directly affected.
	Major Gas Supply Lines	Possible conflict with Sydney to Newcastle gas and oil pipeline. Further detailed investigation required.	Possible conflict with Sydney to Newcastle gas and oil pipeline. Further detailed investigation required.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	Possible conflict with Eastern Gas Pipeline gas and oil pipeline. Further detailed investigation required.	Possible conflict with Eastern Gas Pipeline gas and oil pipeline. Further detailed investigation required.
	Rivers and Estuaries	2 reaches of Wallarah Creek	Robinson Creek Floods Creek Hunter Creek	Howes Creek Chain of Ponds Creek Currency Creek	Mulgoa Creek and tributaries Blaxland Creek and Tributaries	Oak Creek Badgerys Creek	Duncan's Creek Bringelly Creek	Bringelly Creek and Tributaries	Monkey Creek Stonequarry Creek	Cordeaux River (Site elevated) Cascade Creek Clements Creek Allens Creek Third Point Creek	No major items as yet identified to be directly affected.

Locality Name		Central Coast	Central Coast	Hawkesbury	Nepean	Nepean	Nepean	Nepean	Burragorang	Cordeaux-Cataract	Cordeaux-Cataract
Site Name		Wallarah	Somersby	Wilberforce (RAAF Relocated)	Luddenham	Badgerys Creek	Bringelly	Greendale	Mowbray Park	Wilton	Wallandoola
	Social and Educational Infrastructure	No major items as yet identified to be directly affected. Site is close to existing urban developments.	Rindean Quarry. Access to Pioneer Concrete Quarry. Adjacent to national parks.	River Oak Arabian Stud Farm. King Equestrian Academy. Sydney Equestrian Supplies. Hawkesbury High and Primary Schools (3.5km). Nature parks adjacent, existing quarry.	Luddenham Primary School (0.1km). Holy Family Primary School (0.3km).	Mendez Equestrian Centre. Crown Park Training Centre.	University of Sydney University Farms Leppington Pastoral Company. Bringelly Primary School (1km).	Sugar Loaf Equestrian Centre. University of Sydney University Farms. Site is aligned generally north / south. Location seeks to avoid and minimise noise on smaller urban areas to the north and south.	Mowbray Park Country Estate. Site is aligned generally north / south. Location seeks to avoid and minimise noise on smaller urban areas to the north and south.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.

Source: WorleyParsons/AMPC analysis

Matrix 3 Comparative assessment of suitable sites analysed in Phase 4
Part B: Type 3 airports

Locality Name		Central Coast	Central Coast	Central Coast	Hawkesbury	Hawkesbury	Nepean	Nepean	Nepean	Nepean	Nepean	Burragorang	Burragorang	Burragorang	Cordeaux - Cataract	Cordeaux - Cataract	Cordeaux - Cataract	Cordeaux - Cataract
Site Name		Wallarah	Peats Ridge	Somersby	Wilberforce	Castlereagh (RAAF Relocated)	Luddenham	Kemps Creek	Badgerys Creek	Bringelly	Greendale	Silverdale	The Oaks	Mowbray Park	Southend	Wilton	Wallandoola	Dendrobium
General Site Attributes	Geographic Place Name	Wallarah	Peats Ridge	Somersby	Wilberforce	Londonderry	Luddenham	Kemps Creek	Badgerys Creek	Bringelly	Greendale	Silverdale	The Oaks	Mowbray Park	Cataract	Wilton	Wilton	Browns Road
	Local Government Area (LGA)	Wyong	Gosford	Gosford	Hawkesbury	Penrith	Penrith	Penrith Liverpool	Liverpool	Liverpool Camden	Liverpool	Wollondilly	Wollondilly	Wollondilly	Wollongong	Wollondilly	Wollondilly Wollongong	Wingecarribee
	Local Environmental Plan (LEP)	Wyong LEP 1991	Gosford PSO and Gosford IDO 122	Gosford IDO 122	City of Hawkesbury LEP 1989	Penrith LEP 2010	Penrith LEP 2010	Penrith LEP 2010 Liverpool LEP 2008	Liverpool LEP 2008	Liverpool LEP 2008 Camden LEP 2010	Liverpool LEP 2008	Wollondilly LEP 2011	Wollondilly LEP 2011	Wollondilly LEP 2011	Wollongong LEP 2009	Wollondilly LEP 2011	Wollondilly LEP 2011 Wollongong LEP 2009	Wingecarribee LEP 2010
	Site Zoning	1(c) Non-Urban Constrained Land Zone 2(e) Urban Release Area 4(e) Regional Industry and Employment Development 5(b) Special Uses – Railways 5(d) Arterial Road Reservation 6(a) Open Space and Recreation 7(g) Wetlands Management 10(a) Investigation Precinct B2 Local Centre RE1 Public Recreation R1 General Residential E2 Environmental Conservation	1(a) Rural – Agricultural 5 Special Uses - General 6(a) Open Space – Recreation 6(b) Open Space – Special	1(a) Rural – Agricultural 4(a) Industrial – General 5 Special Uses – General 5(b) Special Uses – Railways 6(b) Open Space – Special Purpose 7(a) Environmental Protection - Conservation 7(b) Environmental Protection – Scenic Protection	1(b) Rural "B" 7(d1) Environmental Protection (Scenic)	E1 National Parks and Nature Reserves E2 Environmental Conservation RU1 Primary Production RU4 Rural Small Holdings SP2 Infrastructure (future road) Deferred Matter	E2 Environmental conservation E3 Environmental management RU1 Primary Production RU2 Rural Landscape RU2 Rural Small Holdings SP2 Infrastructure (classified road) SP2 Infrastructure (water supply system) Deferred Matter	E2 Environmental conservation RU1 Primary Production RU2 Rural Landscape RU4 Rural Small Holdings SP2 Infrastructure (classified road)	RU1 Primary Production SP1 Special Activities (Commonwealth Activities) SP2 Infrastructure (classified road)	R5 Large Lot Residential RU1 Primary Production SP2 Infrastructure (Educational establishment)	RU1 Primary Production SP2 Infrastructure (educational establishment)	E1 National Parks and Nature Reserves RU2 Rural Landscape	R5 Large Lot Residential RE1 Public Recreation RU1 Primary Production RU2 Rural Landscape RU4 Rural Small Holdings SP2 Infrastructure (road)	RU1 Primary Production RU2 Rural Landscape SP2 Infrastructure	E2 Environmental Conservation SP2 Infrastructure (road)	E2 Environmental Conservation SP2 Infrastructure (road)	E2 Environmental Conservation SP2 Infrastructure (water supply system)	

Locality Name		Central Coast	Central Coast	Central Coast	Hawkesbury	Hawkesbury	Nepean	Nepean	Nepean	Nepean	Nepean	Burragorang	Burragorang	Burragorang	Cordeaux - Cataract	Cordeaux - Cataract	Cordeaux - Cataract	Cordeaux - Cataract
Site Name		Wallarah	Peats Ridge	Somersby	Wilberforce	Castlereagh (RAAF Relocated)	Luddenham	Kemps Creek	Badgerys Creek	Bringelly	Greendale	Silverdale	The Oaks	Mowbray Park	Southend	Wilton	Wallandoola	Dendrobium
	Draft LEP (that has been the subject of public consultation under the EP&A Act 1979)	N/A (not yet on exhibition)	Draft Gosford LEP 2009 RU1 Primary Production RE1 Public Recreation SP2 Infrastructure (educational establishment) SP2 Infrastructure (road) RU5 Village	Draft Gosford LEP 2009 SP2 Infrastructure (research station) SP2 Infrastructure (road) RU1 Primary Production RU2 Rural Landscape E2 Environmental Conservation IN1 General Industrial RE1 Public Recreation	Draft Hawkesbury LEP 2011 RU1 Primary Production RU2 Rural Landscape	N/A	N/A	N/A	N/A	Liverpool LEP 2008 Draft Amendments 16 and 19 is not within the site.	Draft Camden LEP 2009 RU1 Primary Production Liverpool LEP 2008 Draft Amendments 16 and 19 is not within the site.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Estimated population within 30km radius	347,800	265,800	318,800	580,700	703,600	1,050,100	1,590,700	1,170,600	1,063,800	702,200	469,100	141,200	118,600	341,600	287,300	290,700	270,400
	Estimated population within 15km radius	123,800	37,800	143,400	60,500	202,700	135,000	330,600	139,000	123,700	57,900	13,000	30,100	23,800	78,700	9,100	22,700	5,800
	Note: Estimated population based on radius from site centre. Source: ABS Census 2006 (rounded to nearest '00).																	
	Site Footprint	723.3ha	723.3ha	762.5ha	705.2ha	1,148.2ha	703.1ha	713ha	686.4ha Additional Area 6.4ha	723.3ha	687.8ha	709.3ha	702.3ha	723.3ha	704.2ha	677.8ha	727.5ha	723.3ha
	Runway Length and Width (Alignment)	2,600 m x 45 m (17/35)	2,600 m x 45 m (18/36)	2,600 m x 45 m (18/36)	2,600 m x 45 m (09/27)	2,600 m x 45 m (18/36)	2,600 m x 45 m (01/19)	2,600 m x 45 m (16/34)	2,600 m x 45 m (05/23)	2,600 m x 45 m (15/33)	2,600 m x 45 m (17/35)	2,600 m x 45 m (17/35)	2,600 m x 45 m (17/35)	2,600 m x 45 m (18/36)	2,600 m x 45 m (05/23)	2,600 m x 45 m (18/36)	2,600 m x 45 m (17/35)	2,600 m x 45 m (12/30)
	Key Airport Facilities (assumed in site footprint)	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	2x Business Parks, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.	Business Park, Commuter Car Park, Future Development area.
	Site Capacity (aircraft movements)	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.	Up to 50 movements per hour or 240,000 movements per year.
	Site Capacity (passenger movements)	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).	Up to 33 million passengers per year (based on 140 passengers per aircraft). 19 million passengers per year (based on 80 passengers per aircraft).
	Note: Site capacity (by passengers and aircraft movements) assumes nil interaction with existing airports and that operations can be managed, albeit with extra track miles and associated economic penalties to operators.																	

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Site Name		Wallarah	Peats Ridge	Somersby	Wilberforce	Castlereagh (RAAF Relocated)	Luddenham	Kemps Creek	Badgerys Creek	Bringelly	Greendale	Silverdale	The Oaks	Mowbray Park	Southend	Wilton	Wallandoola	Dendrobium
	Key Transport System/s within ~5kms of site	F3 Sydney - Newcastle Freeway Sparks Road Motorway Link Main North Line	Peats Ridge Road Gregory Downs Drive Wisemans Ferry Road	F3 Sydney - Newcastle Freeway Peats Ridge Road Wisemans Ferry Road Main North Line	Putty Road King Road	Londonderry Road Castlereagh Road	The Northern Road Elizabeth Drive Mamre Road	Elizabeth Drive The Northern Road Mamre Road	The Northern Road Badgerys Creek Road Elizabeth Drive	Greendale Road The Northern Road	Greendale Road The Northern Road	Silverdale Road	Burragorang Road	Montpellier Drive Barkers Lodge Road Mowbray Park Road	Appin Road Princes Highway	Picton Road Hume Highway	Picton Road	Hume Highway
	General Terrain of site	Rolling coastal plain drained by Wallarah Creek to Tuggerah Lake. Some open, some forested and some developed lands. Existing Airfield to the south.	Narrow ridge line as a part of a dissected montane plateau, with some open undulating rural land on the ridge and parallel to the Peats Ridge Road.	Large elevated rectangular area of undulating planar rural land, as part of a dissected montane plateau.	Undulating terrain on the slopes of the Hawkesbury River valley with some areas of floodplain and open rural land, rising to higher ground the west and north.	On the eastern side of the Hawkesbury River valley, mostly planar, gently undulating terrain with open rural and timbered lands.	Rolling planar terrain on the watershed between the Nepean River and Badgerys Creek and other headwaters of South Creek, mostly in use for rural land activities.	Open undulating land in floodplain of Kemps Creek, mostly developed for rural smallholding activities.	Rolling planar terrain on the watershed between the Nepean River and Badgerys Creek, mostly in use for rural land activities.	Rolling planar terrain on the watershed between the Nepean River and Badgerys Creek, mostly in use for rural land activities.	Open rolling planar terrain within the catchment of the Nepean River, mostly in use for rural land activities.	Undulating plateau with open rural land located on the escarpment above the Nepean river, with dissected rural land to the east and rising rugged forested terrain to the west.	Broad open valley of Monkey Creek with long parallel valley ridges, mostly developed for rural smallholding activities and rural uses. Existing airfield on valley floor.	Elevated rectangular area of sloping planar in the upper portion valley of Monkey Creek with mostly developed rural uses.	Area of gently sloping montane plateau, atop the Illawarra escarpment, comprising areas of forest and open heath.	Heavily dissected montane plateau with open rural and some long linear ridge lines adjoining the deep gorges of the major rivers.	Heavily dissected montane plateau with open rural and some long linear ridge lines adjoining the deep gorges of the major rivers.	Very isolated site lying on a long linear ridge parallel to the Cordeaux River gorge and along the alignment t of the Maldon - Dombarton railway.
	Geology	Multi-coloured chert sandstone quartzose sandstone shale and claystone	Quartz sandstone with some shale	Quartz sandstone with some shale	Quartz sandstone with some shale	Poorly consolidated sandstone conglomerate siltstone and "perched" alluvium	Sandstone and shale	Sandstone and shale	Sandstone and shale	Sandstone and shale	Sandstone and shale	Sandstone and shale	Quartz sandstone with some shale	Quartz sandstone with some shale	Quartz sandstone with some shale	Sandstone and shale	Sandstone and shale	Quartz sandstone with some shale
	Note: Geological information sourced from the Department of Primary Industries website, 1:500 000 geological maps. (http://www.dpi.nsw.gov.au/minerals/geological/geological-maps/1-500-000).																	
	Soil Classification	Topsoil thickness layer 0.3m Subsoil layer 0.6m	Topsoil thickness layer 0.4m Subsoil layer 0.7m	Topsoil thickness layer 0.3m Subsoil layer 0.7m	Topsoil thickness layer 0.15m Subsoil layer 1.2m	Topsoil thickness layer 0.2m Subsoil layer 0.3m	Topsoil thickness layer 0.3m Subsoil layer 0.6m	Topsoil thickness layer 0.3m Subsoil layer 0.6m	Topsoil thickness layer 0.3m Subsoil layer 0.6m	Topsoil thickness layer 0.3m Subsoil layer 0.6m	Topsoil thickness layer 0.3m Subsoil layer 0.6m	Topsoil thickness layer 0.3m Subsoil layer 0.6m	Topsoil thickness layer 0.3m Subsoil layer 0.6m	Topsoil thickness layer 0.4m Subsoil layer 0.7m	Topsoil thickness layer 0.0m Subsoil layer 0.0m	Topsoil thickness layer 0.3m Subsoil layer 0.6m	Topsoil thickness layer 0.3m Subsoil layer 0.6m	Topsoil thickness layer 0.4m Subsoil layer 0.7m
	Note: Soil classification information sourced from the Australian Soil Resource Information System (ASRIS) digital atlas website (http://www.asris.csiro.au/themes/Atlas.html#Atlas_Digital).																	
	Major river systems close to site	Wallarah Creek Reach	Mooney Mooney Creek	Mooney Mooney Creek Site well elevated above river systems	Hawkesbury River Currency Creek	Nepean River	Nepean River Mulgoa Creek	Badgerys Creek Oakly Creek	Badgerys Creek Oakly Creek	South Creek Town Rural Storage Lowes Creek	Nepean River Bringelly Creek	Nepean River Forest Hill Creek Bushrangers Creek	Back Creek Monkey Creek	Monkey Creek	Lake Cataract Cataract River Stokes Creek	Avon River Cordeaux River Site well elevated above river systems	Lake Cataract Cataract River Site well elevated above river systems	Avon River Lake Avon
CRITERION 1 Accessibility of the Sydney surface transport network (rail and state roads)	Kilometres to connect site boundary to existing rail link	~2.5km to Warnervale Station	~4.5km to Ourimbah Station	~4.5km to Ourimbah Station	~8km to Windsor Station	~7km to Richmond Station ~11km to Penrith Station	~9km to Kingswood Station ~16km to proposed Leppington Station	~11km to Werrington Station ~13km to proposed Leppington Station	~11km to Werrington Station ~13km to proposed Leppington Station	~13km to proposed Leppington Station	~13km to Macarthur Station ~15km to proposed Leppington Station	~18km to Macarthur Station ~23km to proposed Leppington Station	~20km to Menangle Park Station ~ 25km to Macarthur Station on Main South Railway	~7km to Picton Station	~17km to Menangle Station	~20km from Menangle Park Station ~25km to Macarthur Station on Main South Railway	~11km to Douglas Park Station	~11km to Bargo Station
	Likelihood of a rail link being constructed to or near to the site, other than an airport specific line	Possible given proximity of existing Sydney - Newcastle Line.	Unlikely unless the site is accessed by a new alignment, possibly as a part of Sydney -Newcastle high speed rail line.	Unlikely unless the site is accessed by a new alignment, possibly as a part of Sydney -Newcastle high speed rail line.	Unlikely	Unlikely	Possible as an extension of South West Rail Link.	Possible as an extension of South West Rail Link.	Possible as an extension of South West Rail Link.	Possible as an extension of South West Rail Link.	Possible as an extension of South West Rail Link.	Very unlikely	Very unlikely	Very unlikely	Very unlikely	Possible – site adjacent to or incorporates the alignment of the partially constructed Maldon – Dombarton Railway.	Unlikely, although site is ~12kms from the alignment of the partially constructed Maldon – Dombarton Railway.	Possible – site adjacent to or incorporates the alignment of the partially constructed Maldon – Dombarton Railway.

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Site Name		Wallarah	Peats Ridge	Somersby	Wilberforce	Castlereagh (RAAF Relocated)	Luddenham	Kemps Creek	Badgerys Creek	Bringelly	Greendale	Silverdale	The Oaks	Mowbray Park	Southend	Wilton	Wallandoola	Dendrobium	
	Capacity of the existing rail systems and implications of additional airport traffic requirements for additional capacity (not costed)	Requirements for providing additional capacity for 4 trains per hour. A new alignment for a tunnel between Hawkesbury River and Berowra due to the limit of capacity in Cowan Bank on Main Northern Railway.			Assume no rail link.	Assume no rail link.	Requirements for providing additional capacity for 4 trains per hour on the East Hills Line: - Quadruplication between Revesby and Glenfield; - Sextuplication between Erskineville and Tempe; - Re-signalling and Electrification.					Assume no rail link	Assume no rail link	Assume no rail link	Assume no rail link	Main Southern Railway/East Hills Line does not have sufficient capacity to serve a new airport. Requirements for providing additional capacity for 4 trains per hour on the Main South Line: - Southern Sydney Freight Line needs to be in place as part of quadruplication to Glenfield; - Quadruplication between Revesby and Glenfield; - Sextuplication between Erskineville and Tempe; - Re-signalling and electrification; - New refuges south of Macarthur.			
	Note: The underlying assumption is that Type 3 airports would not have an airport specific rail link unless the Government deemed it necessary – accordingly costing for Type 3 rail connection has not been undertaken, although costs could be expected to be similar to the relevant Maximum Airport.																		
	Kilometres to connect site boundary to existing designated state roads and highways	Site footprint sits over F3	~7.5km to F3	~125m to F3 (eastern boundary of site)	~25km to M7	~18km to Western Motorway (M4)	~8km to Western Motorway (M4) ~15km to M7	~6km to M7 ~15km to Western Motorway (M4)	~11km to Western Motorway (M4) ~10km to M7	~13km to M7	~18km to Western Motorway (M4) ~20km to M7	~30km to Hume Highway	~25km to Hume Highway	~16km to Hume Highway	~5km to Southern Freeway	~9km to Hume Highway	~10km to Hume Highway	~4km to Hume Highway	
	Specific issues in constructing a road link	The existing roadway (F3) is at a similar level to the airport site. The F3 would need to be diverted and the diverted road connected to the airport. Connection would be relatively easy.	The existing roadway (Peats Ridge Road) would require an upgrade, connection would be relatively easy.	The existing roadway (F3) is at a similar level to the airport site and connections would be relatively easy.	The existing roadways (Putty Road, Wilberforce Road and Windsor Road) would require an upgrade. Upgrade to the road bridge over the Hawkesbury River, connection would be relatively easy.	The existing roadway (Londonderry Road and The Northern Road) would require an upgrade, connection would be relatively easy.	The existing roadways (The Northern Road and Elizabeth Drive) would require an upgrade, connection would be relatively easy.	The existing roadways (Mamre Road and Elizabeth Drive) would require an upgrade, connection would be relatively easy.	The existing roadways (The Northern Road and Elizabeth Drive) would require an upgrade, connection would be relatively easy.	The existing roadways (The Northern Road and Bringelly Drive) would require an upgrade, connection would be relatively easy.	The existing roadways (Greendale Road and Bringelly Drive) would require an upgrade, connection would be relatively easy.	The existing roadway (Greendale Road) would require an upgrade, connection would be relatively easy.	The existing roadway (Burragorang Road) would require an upgrade, connection would be relatively easy.	The existing roadways (Bakers Lodge Road and Remembrance Drive) would require an upgrade, connection would be relatively easy.	The existing roadways (Appin Road) would require an upgrade, connection would be relatively easy.	The existing roadways (Picton Road) would require an upgrade, connection would be relatively easy.	The existing roadways (Picton Road) would require an upgrade, connection would be relatively easy.	Connection to Hume Highway and Southern Freeway would need to be built.	
	Required works	5km road diversion of the Pacific Highway and connection to airport.	11km upgrade to Peats Ridge Road and connection to airport.	3km upgrade to Peats Ridge Road and connection to airport.	9km upgrade to Putty Road, Wilberforce Road and Windsor Road, duplication of bridge over the Hawkesbury River, and connection to airport.	9km upgrade to Londonderry Road and The Northern Road and connection to airport.	15km upgrade to The Northern Road and Elizabeth Drive and connection to airport.	5km upgrade to Elizabeth Drive and connection to airport.	8km upgrade to Elizabeth Drive and connection to airport.	12km upgrade to Bringelly Road and connection to airport.	15km upgrade to Greendale Road and Bringelly Drive, 2km extension of Greendale Road and connection to airport.	15km upgrade to Greendale Road and Bringelly Drive, 7km extension of Greendale Road and connection to airport.	14km upgrade to Burragorang Road and connection to airport.	14km upgrade to Bakers Lodge Road and Remembrance Drive, 5km extension Road and Connection to Airport.	14km upgrade to Appin Road, 5km diversion of Appin Road, 6km extension to Appin road and connection to airport.	20km upgrade to Picton Road and connection to airport.	20km upgrade to Picton Road and connection to airport.	10km extension road to Hume Highway, 11km extension road to Cordeaux Road, upgrade to Cordeaux Road and connection to airport.	
	Cost of works to nearest \$ million	~\$73 million	~\$258 million	~\$82 million	~\$259 million	~\$214 million	~\$346 million	~\$126 million	~\$192 million	~\$270 million	~\$369 million	~\$426 million	~\$324 million	~\$397 million	~\$450 million	~\$456 million	~\$456 million	~\$367 million	
	Note: Estimated costs for road construction are as follows: - Upgrade from a 2 lane corridor to 4 lane corridor - \$22 million/km (based on NSW RMS cost estimates of upgrade to the Oxley Highway); - Diversion/Extension of road, new two lane, two way road - \$11.5 million/km (based on NSW RMS cost estimate of diversion of The Camden Valley Way); - Airport connection, overpasses and connections - \$15.5 million each (based on Canberra Airport connection cost); - Bridge widening - \$114million/km (based on NSW RMS cost of Sea Cliff Bridge, Illawarra).																		
CRITERION 2 Proximity to growth centres and commercial opportunities	Distance from site boundary to identified commercial growth centres (Metro and Regional Strategies)	Tuggerah-Wyong Major Centre (~14km)	Gosford City Centre (~15km)	Gosford City Centre (~7km) Tuggerah-Wyong Major Centre (~14km)	Windsor Town Centre (~9km) Rouse Hill Planned Major Centre (~16km)	Windsor Town Centre (~9km) Mt Druitt Potential Major Centre (~15km) (Penrith Regional City (~9km)	Penrith Regional City (~10km) Leppington Planned Major Centre (~16km) Mt Druitt Potential Major Centre (~14km)	Penrith Regional City (~13km) Leppington Planned Major Centre (~11km) Mt Druitt Potential Major Centre (~10km)	Penrith Regional City (~15km) Leppington Planned Major Centre (~10km) Mt Druitt Potential Major Centre (~12km)	Leppington Planned Major Centre (~10km)	Leppington Planned Major Centre (~14km) Penrith Regional City (~21km) Mt Druitt Potential Major Centre (~22km)	Leppington Planned Major Centre (~19km) Penrith Regional City (~21km)	Camden Town Centre (~12km) Campbelltown-Macarthur Major Centre (~25km)	Camden Town Centre (~23km) Campbelltown-Macarthur Major Centre (~35km)	Campbelltown-Macarthur Major Centre (~24km) Wollongong Regional City (~17km)	Campbelltown-Macarthur Major Centre (~25km) Wollongong Regional City (~23km)	Campbelltown-Macarthur Major Centre (~22km)	Wollongong Regional City (~28km)	
	Percentage of footprint within North West or South West Growth Centre	0%	0%	0%	0%	0%	0%	60%	0%	45%	0%	0%	0%	0%	0%	0%	0%	0%	
	N70 - 10 Event Contour impact on North West or South West Growth Centre	Nil	Nil	Nil	Nil	Nil	Nil	High	Medium	High	Low	Nil	Nil	Nil	Nil	Nil	Nil	Nil	

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CRITERION 3 Comparative Earthworks Estimate	Comparative cut plus fill earthworks volume to level site (m³/ha) rounded to nearest 100	78,800	157,700	154,200	94,100	38,000	61,100	50,700	74,300	120,000	96,400	172,500	182,800	144,400	168,500	139,000	130,700	105,600
	Comparative cost to prepare airport platform rounded to nearest million	~\$184 million	~\$413 million	~\$431 million	~\$196 million	~\$134 million	~\$126 million	~\$96 million	~\$161 million	~\$310 million	~\$226 million	~\$463 million	~\$489 million	~\$372 million	~\$504 million	~\$346 million	~\$345 million	~\$253 million
	Note: Comparative cut plus fill earthworks volume in m³/ha to create a completely level airport footprint. Note: In practice airport sites do not have to be completely level over their whole area. Costs are based on adjusted earthworks volumes to account for this and for the different geotechnical material expected to be encountered on that site.																	
CRITERION 4 Noise Impact on Residents	20 ANEC	3,880	230	530	790	3,430	380	1,370	840	600	440	150	990	470	40	90	140	50
	25 ANEC	1,880	90	160	280	510	160	610	380	210	130	30	500	140	20	40	70	10
	30 ANEC	1,130	40	90	130	230	70	270	140	80	50	10	240	40	10	20	30	10
	35 ANEC	410	20	40	50	90	30	130	70	30	20	0	110	20	10	10	10	10
	40 ANEC	320	10	20	20	40	20	40	40	20	10	0	70	10	0	0	10	0
	Distance (m) from site boundary to nearest urban areas (as defined by NSW Department of Planning and Infrastructure)	0	9,400	1,950	1,100	2,200	0	4,800	5,000	5,950	2,700	350	100	3,650	2,250	2,900	5,100	7,600
	Number of Persons Exposed to >10 Number of Events >70dB(A)	22,320	640	5,560	2,990	29,950	7,870	6,440	3,560	4,560	2,220	1,200	2,440	4,390	880	370	430	530
	N70 person events (nearest '00)	1,048,700	45,500	236,600	172,800	1,085,400	206,300	330,300	200,700	179,200	104,800	42,100	194,900	159,600	27,200	19,800	29,400	26,100
	AIE (N70/Persons exposed)	47	72	43	58	36	26	51	56	39	47	35	80	36	31	54	69	50
	Note 1: Approximate population within noise contour categories based on site specific orientation of runway (nearest '0). Refer Australian Standard AS 2021-2000 Acoustics – aircraft noise intrusion – building siting and construction. Note 2: This study has chosen specific sites for more detailed assessment and BoM wind data has become available for some Sites. This is for comparative assessment and does not represent ANEC with ANEF contours endorsed by Airservices Australia, in the manner of endorsement of Ministerial Direction M37/99 and the <i>Airports Act 1996</i> , as inputs from Airservices Australia/CASA on design flight tracks. Any interactions between airports etc will still be required. Note 3: The Department of Infrastructure and Transport considers that further metrics to ANEF/ ANEC give the decision makers a much clearer picture of what the outcomes will be if they approve the project, e.g. showing actual flight paths and the use of N70 contours and the number of aircraft noise events above 70 dBA. Person-Events Index (PEI) then allows the total noise load generated by each airport to be computed by summing, over the exposed population, the total number of instances where an individual is exposed to an aircraft event above a specified noise level (in this case N70), over a given time period. Note 4: $PEI(70) = \sum P_N N$ where P_N is the number of persons exposed to N70.																	
CRITERION 5 Mine Subsidence	Designated mine subsidence zone present within site (percentage within zone)	Yes ~15%	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes (~10%) Site is close to areas of mine subsidence and operating mines. Extent of any old or current mines needs to be established	No Site is close to mine subsidence areas and operating mines. Extent of any old or current mines needs to be established	No
CRITERION 6 Number of Lots Requiring Acquisition Based on number of lots directly impacted by Site footprint	Approx. number of allotments in site	200	110	140	100	180	80	200	10	150	40	40	70	40	10	10	5	5
	Average number of allotments per hectare within site	0.282	0.156	0.178	0.142	0.160	0.117	0.276	0.007	0.209	0.063	0.062	0.095	0.059	0.007	0.007	0.003	0.001
	Population within site boundary (Census 2006, to nearest '0)	960	50	110	200	600	100	570	180	120	60	0	430	70	20	30	50	10

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CRITERION 7 Airspace Interaction	See also input from Airservices Australia in the WorleyParsons/AMPC technical paper: "Airport Suitable Sites - Specified Localities"	Major Probable interaction with Military Airspace to the north and east. Several power stations in vicinity (potential danger areas due high velocity exhaust).	Major Probable interaction with operations to Sydney (Kingsford-Smith) Airport.	Major Probable interaction with operations to Sydney (Kingsford-Smith) Airport.	Major Probable interaction with operations to Sydney (Kingsford-Smith) Airport. For type 3, assumes runway parallel to existing RAAF Base Richmond can be operated with coordinated control. Site within military airspace with issues for access routes. High terrain to the west – viability of approaches requires more assessment.	Major Requires closure / relocation of current RAAF Base Richmond. Northern flight paths would still enter military restricted airspace. The Department of Defence Orchard Hills facility would have to be relocated.	Major The location of R536A and 536B within the nominal CTR boundary would not be compatible with the proposed 01/19 runway alignment. The Department of Defence Orchard Hills facility would have to be relocated. Potential impacts on flying training areas and Camden Airport. Runway alignment more northerly than Badgerys Creek (and extent of interaction with Sydney (Kingsford-Smith) Airport may be improved in comparison to Badgerys Creek).	Major Close to Sydney (Kingsford-Smith) Airport and Bankstown, heading towards RAAF Base Richmond airspace. Feasibility of site problematic and subject to review / advice from ASA, CASA and Defence.	Major Potential impacts on flying training areas and Camden Airport. See note below.	Major Site is aligned north west / south east with the intention of minimising interaction with Holsworthy airspace to the south east. Potential impacts on flying training areas and Camden Airport.	Major Site well south of the RAAF Base Richmond military airspace and minimises interaction with Orchard Hills explosives depot airspace. Potential impacts on flying training areas and Camden Airport. May need to consider wind turbulence due high terrain to the west.	Major Site well south of the RAAF Base Richmond military airspace and minimises interaction with Orchard Hills explosives depot airspace. Potential impacts on flying training areas and Camden Airport. May need to consider wind turbulence due high terrain to the west.	Major Site well south of the RAAF Base Richmond military airspace and minimises interaction with Orchard Hills explosives depot airspace. Potential impacts on flying training areas and Camden Airport. May need to consider wind turbulence due high terrain to the west.	Major Site well south of the RAAF Base Richmond military airspace and minimises interaction with Orchard Hills explosives depot airspace. Potential impacts on flying training areas and Camden Airport. May need to consider wind turbulence due high terrain to the west.	Major Probable interaction with operations to Sydney (Kingsford-Smith) Airport and limitations due Holsworthy airspace. Feasibility of site problematic and subject to review/advice from ASA, CASA and Defence.	Major	Major	Major Site is on proposed railway alignment.
	Note 1: In all cases the preliminary observations listed herein need to continue to be tested with relevant authorities: Airservices Australia; Department of Defence; Office of Airspace Regulation; existing airport operators and users at the feasibility stage. Potential conflicts or dependencies with Richmond and Sydney (Kingsford-Smith) Airport's operations and Sydney Basin traffic would require more detailed analysis by Department of Defence, Airservices Australia and/or the Office of Airspace Regulation. The general complexity of existing airspace within and adjacent to the Sydney Basin makes this ongoing review necessary. Major • Airspace where there are significant levels of civil air transport traffic and military activity, such as around Sydney, Williamtown, Nowra and Richmond, together with their respective CTR/CTA, and operational procedures and requirements; or • Restricted Areas particularly those with provisional classifications of RA3 and RA2; or • Danger Areas associated with military flying training. Moderate • Airspace where there are significant levels of GA traffic, such as around Bankstown and Camden, together with their respective CTR (note in practice as Bankstown and Camden are relatively close to the larger airports, a potential moderate ranking is effectively outweighed by the factors affecting the larger airports); or • Restricted Areas with provisional classifications of RA1; or • Danger Areas associated with civil flying training; or • VFR transit routes. Minor • Airspace where there are lower levels of civil traffic and non-towered aerodromes; or • Danger Areas. Note 2: This assessment of Badgerys Creek has been prepared on the basis of demonstrating technical consideration of all possible sites. The following consideration of airspace issues is based generally around the runway geometry determined during the various EIS processes undertaken since 1985 i.e. a runway alignment of 05/23. The 18/36 runway option shown in the most recent EIS has not been considered.																	
CRITERION 8	Capacity for future expansion to Maximum Airport	Yes	No	Yes	No	No	Yes	No	Yes	Yes	Yes	No	No	Yes	No	Yes	Yes	No
CRITERION 9 Flood Risk at Site		Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Part of site may be subject to 1-100 Flood, Probable Maximum Flood (PMF) unknown.	Part of site may be located within the Flood Planning Area.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Site identified as within Flood Prone Land as designated by Liverpool City Council. Site also identified as within Flood Planning Area as designated by Penrith City Council and Liverpool City Council.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittent.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Site identified as within Flood Prone Land as designated by Liverpool City Council. Site also identified as within Flood Planning Area as designated by Liverpool City Council.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.	Not identified by local authority as being flood prone by rising flood waters. Local minor creeks may flood intermittently.
	Note 1: Castlereagh (RAAF Relocated) - Flood planning area means the land shown as "Flood planning area" on the Flood Planning Land Map. Note 2: Windsor Downs (RAAF Relocated) - High Flood Risk Precinct is the land subject to a high hydraulic hazard (in accordance with the provisional criteria outlined in the NSW Government Floodplain Development Manual 2005) in a 100 year flood event and/or subject to potential evacuation difficulties during a flood. Medium Flood Risk Precinct is the land below the 100 year flood level subject to a low hydraulic hazard (in accordance with the provisional criteria outlined in the NSW Government Floodplain Development Manual 2005). Low Flood Risk Precinct is all land within the floodplain, i.e. within the extent of the Probable Maximum Flood (PMF) but not identified as either a high flood risk or medium flood risk precinct. Therefore the Low Flood Risk Precinct is all the land between the 100 year and the PMF flood extents. Note 3: Greendale and Kemps Creek - Flood prone land is land susceptible to flooding by the largest flood that could conceivably occur at a particular location, estimated from the probable maximum precipitation.																	

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CRITERION 10 Additional potential infrastructure affected by airport footprint causing dislocations relocations and other items likely to involve costs	Airservices and Defence	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	Airservices Australia International Radio Transmitter Station. Closure or relocation of RAAF Base Richmond required.	Requires closure and relocation of Orchard Hills Explosives Depot.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.
	Minor Airports and Airfields in Close Proximity	Warnervale Airfield.	No major items as yet identified to be directly affected.	Somersby Airfield.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	The Oaks Airfield.	The Oaks Airfield.	Wedderburn Airfield. Wilton Parachuting Club.	Wedderburn Airfield. Wilton Parachuting Club.	Wedderburn Airfield. Wilton Parachuting Club.	Wedderburn Airfield. Wilton Parachuting Club.
	Railways	Realignment of Main North Line or grade separation may be needed.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	Some realignment of the incomplete Maldon-Dombarton Railway may be needed.	No major items as yet identified to be directly affected.	Some realignment of the incomplete Maldon-Dombarton Railway may be needed.
	Roads	F3 Freeway Motorway Link Road Sparks Road Dakara Road Bruce Cr Warnervale Road Hakone Road	Peats Ridge Road Euloo Road Bushells Road Karee Road	Wisemans Ferry Road Elwins Road Lackersteens Road Keighley Ave Grants Road Lutana Road Nyah Road Bimbil Road Debenham Road North Somersby Falls Road Howes Road Ulinga Road	Sackville Road Stannix Park Road Stannix Park Ln Sargents Road Carrs Road	Proposed route for the M7 to Yarramundi Freeway Torkington Road Nutt Road Spencer Road Fire Trail Road Devin Road Boscobel Road Hinxman Road Smeeton Road Tadmore Road	The Northern Road Littlefields Road Galaxy Road Queenshill Road Oakly Road	Elizabeth Drive Western Road Lawson Road Martin Road Overett Road Sumbay Ave Cuthel Road Turnbull Ave Martin Road Bakefield Ave	The Northern Road Badgerys Creek Road Jagelman Road Fuller St Leggo St Longleys Road Anton Road	Greendale Road Dwyer Road Francis St Findley Road Tyson Road Carr Road	Cut Hill Road Orient Road	Silverdale Road Avoca Road Pineridge Cres	Burratorang Road Binalong Road Yallah St Wanawong St Daley Cl Wanawong St Waterfall Creek Road Quarry Road	Bakers Lodge Road Mowbray Park Road Montpelier Road	Appin Road	Picton Road	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.
	Water Supply	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	Sydney Water Supply Pipeline requires relocation or encasement.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	Site is within/or adjacent to Sydney drinking water catchment.	Site is within/or adjacent to Sydney drinking water catchment.	Site is within/or adjacent to Sydney drinking water catchment.	Site is within/or adjacent to Sydney drinking water catchment.
	Major Electricity Supply (OLS = possible conflict with obstacle limitation surface)	330kV power line needs re-alignment 3 sets of 330kV power lines (OLS) –north 500kV power line (OLS) – north	3 sets of 330kV power lines (OLS) – north west 2 sets of 330kV power lines (OLS) – north east	330kV power lines (OLS) – north west	500kV power line (OLS) – east	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	500kV power lines (OLS) - north	330kV power lines (OLS) - north	2 sets of 330kV power lines (OLS) - north and south	2 sets of 330kV power lines need re-alignment	330kV power lines need re-alignment	No major items as yet identified to be directly affected.	330kV power lines need re-alignment	330kV power lines (OLS) - east	330kV power lines need re-alignment	No major items as yet identified to be directly affected.	330kV power lines (OLS) - south east
	Major Gas Supply Lines	Possible conflict with Sydney to Newcastle gas and oil pipeline. Further detailed investigation required.	Possible conflict with Sydney to Newcastle gas and oil pipeline. Further detailed investigation required.	Possible conflict with Sydney to Newcastle gas and oil pipeline. Further detailed investigation required.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	Possible Conflict with Eastern Gas Pipeline gas and oil pipeline. Further detailed investigation required.	Possible Conflict with Eastern Gas Pipeline gas and oil pipeline. Further detailed investigation required.	No major items as yet identified to be directly affected.

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	Rivers and Estuaries	2 reaches of Wallarah Creek.	No major items as yet identified to be directly affected.	Robinson Creek Floods Creek Hunter Creek	Chain of Ponds Creek	No major items as yet identified to be directly affected.	Mulgoa Creek	South Creek	Badgerys Creek Oak Creek	No major items as yet identified to be directly affected.	Bringelly Creek	Forest Hill Creek Bushrangers Creek	Monkey Creek	Monkey Creek	No major items as yet identified to be directly affected.	Cordeaux River (site elevated) Cascade Creek Clements Creek Allens Creek Third Point Creek	No major items as yet identified to be directly affected.	Cordeaux River (site elevated)
	Social and Educational Infrastructure	No major items as yet identified to be directly affected. Site is close to existing urban developments.	Adjacent to national parks. Greenhills Golf and Country Club Access to Boral Concrete Depot	Adjacent to national parks. Rindean Quarry Access to Pioneer Concrete Quarry	Sydney Equestrian Supplies King Equestrian Academy Hawkesbury High and Primary Schools (3.5km)	Unnamed Primary School (1km) St Pauls Grammar (1km) Cranebrook Cemetery (1km) Londonderry Cemetery (2.5km) Kindalin Christian School (2.5km) Note that there is a large existing urban area close to and around the site.	Luddenham Primary School (0.5km) Holy Family Primary School (0.4km)	Elizabeth Drive Landfill Facility Australian Native Landscape Argus Technologies Fleurs Radio Observation Field Station (University of Sydney) University of Sydney Fleurs Farm Sydney Catholic Lawn Cemetery Novaris Research Centre (Yarrandoo) Kemps Creek Primary (1.0km)	Mendez Equestrian Centre Crown Park Training Centre	Bringelly Primary School (1km)	Sugar Loaf Equestrian Centre University of Sydney University Farms Site is aligned generally north / south. Location seeks to avoid minimise noise on smaller urban areas to the north and south.	No major items as yet identified to be directly affected. Site is aligned generally north / south. Location seeks to avoid minimise noise on smaller urban areas to the north and south.	No major items as yet identified to be directly affected. Site is aligned generally north / south. Location seeks to avoid minimise noise on smaller urban areas to the north and south.	No major items as yet identified to be directly affected. Site is aligned generally north / south. Location seeks to avoid minimise noise on smaller urban areas to the north and south.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.	No major items as yet identified to be directly affected.

Source: WorleyParsons/AMPC analysis