Airport Site Selection for Sydney
Airport Site Selection for Sydney

Source: Daily Telegraph, Sydney
Airport Site Selection for Sydney

Disclaimer and Acknowledgments

• This paper describes work undertaken for the Joint Study of the Commonwealth Government of Australia and the State of NSW on Aviation Capacity in the Sydney Region.

• The Joint Study has been placed in the public domain and may be found at:

• The views expressed in this paper, while largely based on those studies, however, are those of the Authors, who were senior members of the WorleyParsons/AMPC team which undertook the planning, engineering and environmental assessments which form a major component of those studies.

• The contributions of Gary Milner of Airport Master Planning Consultants and my WorleyParsons colleague, Sofie Mason-Jones are gratefully acknowledged as are those of my team, especially GIS analysts, Campbell Grant and Daniel Liu;

• The leadership and encouragement of the Department of Infrastructure and Transport and its staff especially James Collett, Jessica Hall and Brendan McRandle during the execution of the work is acknowledged.
Airport Site Selection for Sydney

Sydney – Structure and Growth

“New Sydney”
North West
Urban Growth Area

“Ermington”
Centroid of current
Population

“Old Sydney”
Urban Consolidation

Sydney CBD

Sydney Airport
“Kingsford Smith Airport”
(KSA)

“New Sydney”
South West
Urban Growth Area

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Airport Site Selection for Sydney

Sydney Airport – 8kms to CBD


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Footprint of Sydney Airport

Source: Sydney airport Preliminary Draft Master Plan 2033 Summary and Google Earth
Airport Site Selection for Sydney

Sydney Airport – Constrained Site


Sydney University School of Civil Engineering 2015
<table>
<thead>
<tr>
<th>Year</th>
<th>Event/Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1946</td>
<td>Study for the development of an international airport - sites studied include Towra Point, Bankstown and Mascot.</td>
</tr>
<tr>
<td>1964</td>
<td>NSW Government recommends second airport at Towra Pt in Botany Bay by 1980 when Sydney at maximum capacity.</td>
</tr>
<tr>
<td>1969-1971</td>
<td>Major Airport Needs Study (MANS) considers 11 sites - MANS narrows down the possible location to 4 sites.</td>
</tr>
<tr>
<td>1972</td>
<td>MP advocates an airport at sea - a seadrome.</td>
</tr>
<tr>
<td>1973</td>
<td>Minister for Transport announces the decision to site the second Sydney airport at Galston, north-west of Sydney.</td>
</tr>
<tr>
<td>1974</td>
<td>Minister for Transport rules out the possibility of the second airport being located at Galston.</td>
</tr>
<tr>
<td>1976</td>
<td>NSW Government considers that use of KSA would not increase as much as forecast, and could cope with air traffic until 2000.</td>
</tr>
<tr>
<td>1978</td>
<td>MANS recommend a third runway over the construction of a second airport - NSW Government refuses to accept the recommendation.</td>
</tr>
<tr>
<td>1981</td>
<td>Federal Government (Liberal) refuses to name a site - concerned State Government (Labour) will oppose decision for political reasons.</td>
</tr>
<tr>
<td>1983-1984</td>
<td>Federal Government (Labor) - Second Sydney Airport Site Selection Programme - Sites Wilton and Badgerys Creek.</td>
</tr>
<tr>
<td>1986</td>
<td>Federal Government (Labor) announces that Badgerys Creek is the site for the second airport. About 1700ha land acquired. KSA is to remain the principal Sydney airport.</td>
</tr>
<tr>
<td>1989</td>
<td>Federal Government (Labor) - Prime Minister announces the Government's decision to develop a third runway at KSA.</td>
</tr>
<tr>
<td>1992</td>
<td>First sod turned on construction at Badgerys Creek to symbolise the commencement of Stage 1 construction.</td>
</tr>
<tr>
<td>1994-1996</td>
<td>Third runway at KSA opens six months ahead of schedule and $32m below budget - Badgerys Creek land acquisition costs $132 million.</td>
</tr>
<tr>
<td>1998</td>
<td>Federal and State Labor MPs from western Sydney opposed to Badgerys Creek.</td>
</tr>
<tr>
<td>2000</td>
<td>Federal Government (Liberal) decides not to build the second airport.</td>
</tr>
<tr>
<td>2003</td>
<td>Labor Opposition announces that a future Labor Government, if elected, would not build an airport at Badgerys Creek.</td>
</tr>
<tr>
<td>2009</td>
<td>Federal (Labor) and NSW (Liberal) Governments establish a Joint Study to identify locations for Sydney Region Aviation Capacity needs.</td>
</tr>
<tr>
<td>2012</td>
<td>Joint Study finds &quot;Badgerys Creek is the best site for an additional major RPT airport&quot; and &quot;Wilton is the next best site.&quot;</td>
</tr>
<tr>
<td>2012</td>
<td>Federal Govt rejects Badgerys Creek prefers Wilton; NSW Gov't prefers Canberra with HSR Link; and business prefers Badgerys Creek.</td>
</tr>
<tr>
<td>2013</td>
<td>A Study of Wilton and RAAF Base Richmond for civil aviation operations undertaken.</td>
</tr>
</tbody>
</table>
Airport Site Selection for Sydney

Badgerys Creek Airport Site

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

Sydney University School of Civil Engineering 2015
Here’s what MIT Professor de Neufville had to say in 1991:

“To appreciate what Australia has accomplished in adopting strategic planning for airports, the recent achievements around Sydney need to be contrasted with the less impressive record elsewhere in the world. This record is all the more remarkable because it was established on the heels of previous attempts to deal with the issues of airport capacity that were ineffective at best”
Airport Site Selection for Sydney

Identification of Additional Capacity - The Approach

- Evidence based analysis with oversight from a Steering Committee appointed by the Commonwealth and State Governments
- Initially did not consider the Badgerys Creek site as a possible site – Why not? ‘Not Government policy to develop it’
- Existing “brownfields” airports assessed for ability to be expanded
- For greenfield sites - “clean slate” – nothing assumed
- Adopted a very large tract of land around Sydney to analyse ~285 by 120 kms = ~34,000 sq. kilometres
- Identified any tract of land that was:
  - Readily convertible to aviation uses i.e. not already urban or industrial;
  - Not limited by current air navigation constraints;
  - Largely below a maximum gradient required for runways;
  - Close to sources of demand for airport;
  - Able to accommodate up to a 4000m single runway airport
- National parks and other environmental protection zones not initially excluded
- Travel distance up to 2hrs initially considered.
Airport Site Selection for Sydney

Study Process

New South Wales “Brownfields” (Existing Airports) Study

“Greenfield” Airport Location Study

“Representative Greenfield” Airport Sites

Suitable Locations for an Airport Site

Suitable Airport Sites within suitable locations

More Suitable Sites

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Existing “Brownfields” Airports – Assessing Capacity

ATCF = “as the crow flies” i.e. Australian slang for straight line distance

Sydney University School of Civil Engineering 2015
# Factual Data Matrix

### 12 Existing Airports

<table>
<thead>
<tr>
<th>Data categories</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location and Access</td>
<td>- Airport Primary Use - Location and Access – Airport Characteristic and Aviation operations - Regional Context and Infrastructure - Environmental Factors</td>
</tr>
<tr>
<td>Existing Airports</td>
<td>12</td>
</tr>
<tr>
<td>Data Points per airport</td>
<td>46</td>
</tr>
<tr>
<td>Total Separate Data Points</td>
<td>552</td>
</tr>
</tbody>
</table>

| Main Uses | Operator/lease expiry | Owner | Area of site | Location/(approximate straight-line distance | Proximity to Freeway system | Distance | Time from nearest major City – by road | Distance | time of nearest rail station | Distance | time from –Sydney CBD - by road | Distance | time from Sydney Central - by rail | Other transport available | RPT Airlines services | RPT Connection to Sydney | Current Max Aircraft type | Max. current direct RPT destination capability | Main Runway Dimensions | Secondary Runway (s) | Aircraft parking/gates | AeroBridges | Terminal floor space | Airside Master plan Proposals | Landside Master plan Proposals | Ability to receive International Flights | Curfew | Current number of Movements | Future Max Number of Movements Per Annum | Current Commercial Freight | Future Commercial Freight | Airports Act 1996 (Cmth) and Airports Regulations 1997 (Cmth) | State planning legislation and statutes | Gazetted Local Environmental Plans (LEP) | Draft Local Environmental Plans (LEPs) | Non-statutory State policy documents | Non-statutory local government policy documents | Surrounding land use zones at airport boundary | Significant land uses within 5 kms radius (based on aerial photo &/or zoning maps) | Immediate Road Network | Immediate Passenger rail network | Noise Impacts >25 ANEF | Flooding | Bushfire and other hazards | Rare and Endangered Species | SEPP 14 Wetlands | Other Environmental Issues | Bird Strike per 10,000 mvts per annum |

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*Sydney University School of Civil Engineering 2015*
### Existing “Brownfields” Airports – Assessing Capacity

<table>
<thead>
<tr>
<th>Aerodrome</th>
<th>Long Haul International</th>
<th>Short Haul International</th>
<th>Australia wide Domestic</th>
<th>East Coast Domestic</th>
<th>NSW Regional Domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sydney (Kingsford Smith) Airport</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Canberra Airport</td>
<td>✓ (Note 1)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Newcastle Airport (RAAF Base Williamtown)</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>RAAF Base Richmond</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>HMAS Albatross Naval Air Station</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Bankstown Airport</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>✓ (Note 2)</td>
<td>✓</td>
</tr>
<tr>
<td>Illawarra Regional Airport</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>✓ (Note 3)</td>
<td>✓</td>
</tr>
<tr>
<td>Cessnock Airport</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>✓</td>
</tr>
<tr>
<td>Maitland Airport</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>✓</td>
</tr>
<tr>
<td>Holsworthy Army Air Base</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Camden Airport</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Goulburn Airport</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>

**Note 1:** subject to runway length capability  
**Note 2:** limited to Code 3C aircraft  
**Note 3:** subject to being able to achieve Code 3/4C operational capability
**Type 3 Airport**
- limited service single runway airport aimed at providing for low cost carriers offering limited services on both domestic and international routes
  - 2600m runway
  - Minimum site area 723 ha
  - 20 million pax p.a.

**Type Maximum Airport**
- full service international airport with at least two wide spaced parallel runways able to accommodate the largest of aircraft and serving all domestic and international routes
  - 2500m to 4000m runways
  - Minimum site area 1,676 ha
  - 70 million pax p.a.
Recent Greenfield Airport Earthworks

Volume of Earthworks (Cut plus Fill) cu m.

Area of Airport site in Hectares

- Linear (All data)
- Linear (International Data)
- Linear (Second Sydney Airport Options, Holsworthy and Brisbane Parallel Runway)
- Linear (SSA plus Brisbane excluding Holsworthy)
- Adopted 150% Sensitivity Test Curve for Location Identification
- International Data
- SSA plus Brisbane excluding Holsworthy
- All data
- Second Sydney Airport Options, Holsworthy and Brisbane Parallel Runway

Sydney University School of Civil Engineering 2015
Based on measurement of isochrones from the centroid of Sydney’s population, the distance able to be travelled in any direction varies due to the variability of road standards. Within 1 hour travel, 60 to 80% of all air travellers would be captured; within 2 hours, 90 to 95% of all travellers would be captured.

So, 2 hour isochrones in any direction from Sydney’s centroid of population reasonable as a limit for an RPT airport.

Source: Airport Choice in Germany – New Empirical Evidence of the German Air Traveller Survey 2003 Wilken, Berster and Gelhausen 2005
Airport Site Selection for Sydney

18 Initial Greenfield Locations

Source: WorleyParsons /AMPC

Sydney Airport

Source: Sydney University School of Civil Engineering 2015
# Airport Site Selection for Sydney

## Evaluation of 18 initial Greenfield Localities

### Factual Data Matrix

<table>
<thead>
<tr>
<th>18 Localities, 32 Data Criteria, 10 Primary Criteria, 5 Airport Types, 4536 Data Points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Locality Attributes</strong> / Preferred Representative Airport Site in locality / 1 Capacity Created / 2 Applicability to potential demand segments of new capacity / 3 Ease of connectivity between Sydney Airport and the airport site / 4 Development costs / 5 Accessibility of the Sydney land transport network / 6 Proximity of aviation capacity to NSW commercial growth centres / 7 Commercial opportunities near or on-site / 8 Proximity of Users to capacity a) centroid of population b) CBD / 9 Airspace interactions / 10 Obstacle limitation Surfaces / 11 Frequency of meteorological conditions affecting new and unlocked capacity (i.e. fog, wind, hail) / 12 Potential impact on existing residents and other land users as a result of land acquisition / 13 Noise Impact on Residents (Type 1, 2, 3 and 4 Airports) / 14 Noise impacts on ‘sensitive uses’ / 15 Risk and consequence of aviation accidents at or around airports / 16 Greenhouse gas emissions / ozone (Surface Transport –related only) / 17 Local air quality (pollution, particulate, odours) / 18 Potential impact on quality of receiving waters / 19 Waterway and water supply catchment impact / 20 National and State Parks / 21A Flora/Fauna Species in the locality / 21B Flora/Fauna Species within the representative Site / 22 Indigenous cultural heritage and heritage items / 23 Non-aboriginal heritage items / 24 State Significant Sites / 25 Flood risk at site / 26 Bushfire risk at site / 27 Earthquake / other disaster / 28 Land remediation and contamination (i.e. leakages) / 29 Presence of or potential for Underground mining activity / 30 Unexploded Ordnance Risks</td>
</tr>
</tbody>
</table>
Airport Site Selection for Sydney  Culled to 15 Possible Greenfield Locations

Travel Time from Ermington
- Ermington
- 30 Minutes Road Travel
- 60 Minutes Road Travel
- 90 Minutes Road Travel
- 120 Minutes Road Travel
- 150 Minutes Road Travel

Major Roads
Minor Roads
Earthworks up to 85,000 cum/ha
Localities of Interest
Locality Reference Point
National Parks
State Forests

Sydney Airport

Sydney University School of Civil Engineering 2015
Airport Site Selection for Sydney And finally to 5 Preferred Localities

Sydney University School of Civil Engineering 2015
## Airport Site Selection for Sydney

### Data Matrix for 5 Preferred Localities

<table>
<thead>
<tr>
<th>Locality Number</th>
<th>Northern Localities</th>
<th>Sydney Basin Localities</th>
<th>South-Western Localities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central Coast</td>
<td>Hawksbury</td>
<td>Nepean</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Primary Criterion

#### Note 1
For the purposes of the first tier of rejections, the Australian Noise Exposure Contour (ANEC) adopted for Airport Type 4 was based on the current approved 2020 Australian Noise Exposure Contour (ANEC) for the Sydney (Kingston-Smith) Airport. The ANEC has been applied to all four runways to achieve a more direct comparison with airport sites that are capable of supporting only civil aviation. There may also be significant populations immediately outside the 20 ANEC contour.

#### Note 2
For the purposes of the second tier of rejections, the ANEC adopted for Sydney (Kingston-Smith) Airport is the south-western quarter of the 2020 ANEC has been used. This effectively only contains noise impacts received at runways 1RF and runways 3DF. The ANEC has been applied to all four quadrants of the Sydney (Kingston-Smith) Airport for the new airport. The resulting ANEC contains almost the same area as the north-east and south-west quadrants of the Sydney ANEC for 2020 that is a more conservative representation of possible noise impacts for the single runways.

#### Table

<table>
<thead>
<tr>
<th>Locality Number</th>
<th>Type 1 Airports</th>
<th>Type 2 Airports</th>
<th>Type 3 Airports</th>
<th>Type 4 Airports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type A</td>
<td>Type B</td>
<td>Type A</td>
<td>Type A</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Sydney University School of Civil Engineering 2015
Phase One – screen out unsuitable lands within all localities by applying six (6) criteria and using broad environmental planning and costing data to broadly identify suitable land for investigation for airport uses.

Phase Two – Apply four (4) criteria to the broadly suitable land identified for investigation for airport purposes to identify the more suitable land for airport purposes. In terms of these criteria.

Phase Three – Identify suitable sites for Type 3 and Maximum airports within the more suitable land using established airport site location planning principles and as informed by the outputs of Stage 2 – noting that there will be differences in the relative suitability of sites.

Phase Four – Analyse and assess suitable sites. Apply ten (10) criteria in the form of a data metric. Output information to a rapid CSA process and re-import results. Apply further site specific criteria in order to determine the more suitable sites within each locality for each of a Maximum and a Type 3 Airport (if any exist).
### Airport Site Selection for Sydney

<table>
<thead>
<tr>
<th>Suitable sites - Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Exclusion of Unsuitable Lands</td>
</tr>
<tr>
<td>- site terrain;</td>
</tr>
<tr>
<td>- air navigation;</td>
</tr>
<tr>
<td>- windshear;</td>
</tr>
<tr>
<td>- protected ecosystems;</td>
</tr>
<tr>
<td>- urban settlements</td>
</tr>
<tr>
<td>2. Identification of more Suitable lands</td>
</tr>
<tr>
<td>- extent of earthworks to create a level runway;</td>
</tr>
<tr>
<td>- population density within a notional 20 ANEC contour;</td>
</tr>
<tr>
<td>- designated mine subsidence districts;</td>
</tr>
<tr>
<td>- proximity to the Sydney land transport network</td>
</tr>
<tr>
<td>3. Identification of Suitable Airport sites</td>
</tr>
<tr>
<td>- flattest available land;</td>
</tr>
<tr>
<td>- minimise time to major road systems;</td>
</tr>
<tr>
<td>- lowest levels of noise exposure;</td>
</tr>
<tr>
<td>- avoid mine subsidence areas;</td>
</tr>
<tr>
<td>- orient runways parallel to Sydney Airport</td>
</tr>
<tr>
<td>- site and runway specific OLS issues</td>
</tr>
<tr>
<td>- avoid adverse effects on major infrastructure;</td>
</tr>
<tr>
<td>- avoid flight paths over urban areas</td>
</tr>
<tr>
<td>- runway ends distant from and not pointing at urban populations;</td>
</tr>
<tr>
<td>- conflicts or dependencies with known airspace management issues;</td>
</tr>
<tr>
<td>- local topography;</td>
</tr>
<tr>
<td>- ability to incorporate a cross runway</td>
</tr>
<tr>
<td>4. Detailed Evaluation matrix</td>
</tr>
<tr>
<td>- Accessibility of the Sydney land transport network (rail and state roads);</td>
</tr>
<tr>
<td>- Proximity to growth centres and commercial opportunities;</td>
</tr>
<tr>
<td>- Comparative Earthworks Estimate;</td>
</tr>
<tr>
<td>- Noise Impact on Residents;</td>
</tr>
<tr>
<td>- Mine Subsidence;</td>
</tr>
<tr>
<td>- Number of Lots Requiring Acquisition;</td>
</tr>
<tr>
<td>- Airspace Interaction;</td>
</tr>
<tr>
<td>- Capacity for Future Expansion;</td>
</tr>
<tr>
<td>- Flood Risk at Site;</td>
</tr>
<tr>
<td>- infrastructure dislocations relocations and other items likely to involve costs</td>
</tr>
</tbody>
</table>

64 lines of data ten localities to assess = 640 data points to be measured and or evaluated
Airport Site Selection for Sydney

Suitable sites - Earthworks

Transportation Associates

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Airport Site Selection for Sydney

Suitable sites - Noise

Important Note: There is no certainty that on further investigation a viable airport of any type could or should be developed within the localities identified.

There is no commitment by the Commonwealth State or any other party to develop an airport of any type at or within any or all of the localities so identified at present.

Key

Approximate population within the ANEC 20 Noise Contour (based on 2006 ABS Census Data)

- Blue: 1 - 100
- White: 101 - 500
- Yellow: 501 - 1,000
- Green: 1,001 - 2,000
- Black: 2,001 - 5,000
- Orange: 5,001 - 10,000
- Brown: 10,001 - 20,000
- Pink: 20,001+

Transportation Corridors:
- Suburban Rail
- Freeway/Highway 4 Lane Roads
- Highways, Secondary or other major roads

Excluded Areas:
1. Terrain more difficult than 150,000 m²/s that preclude all aerodrome development (including land with an slope of 10% or greater or other geotechnical issues)
2. The footprint of existing aerodrome associated with Sydney Airport and Williamtown
3. Known flood-prone areas associated with the Parramatta River catchment
4. The footprint of existing aerodrome associated with the Stanwell Park Industrial Site
5. Existing Urban Areas/Rural Settlements
6. Existing Airport Runways

Refer to Table 6-1 for grid information.

Maximum Airport Type – Full Service International Airport
ANEC 20 Noise Contour
Airport Site Selection for Sydney

Suitable sites - Transport

Key
- Distance from existing Freeway, Motorway & 4 Lane Roads
  - > 2 km
  - 1 km - 2 km
  - 5 km - 10 km
  - 10 km - 20 km
  - > 20 km

Transportation Corridors
- Suburban Rail
- Freeway/Motorway/4 Lane Roads
- Highways, expressway or other major roads

Excluded Areas:
1. Terrain more difficult than 100,000 m²/ha and cut and fill earthworks including ramps which infringe on a local Obstacle Limitation surface.
2. Areas associated with reduced access to Sydney Airport and Willmot Point.
3. Known flood-prone areas associated with the Hawkesbury-Nepean Escarpment (International Civil Aviation Organization (ICAO), Airports Vol. 1: Aerodromes Design and Operation (E.3))
4. Protected Bioregions (National Parks, State Conservation Areas, State Forests and Reserves (WaterCorps))
5. Existing Urban Areas/Rural Settlements (as defined by the Department of Planning and Infrastructure)

Areas possibly suitable for investigation to accommodate airports
- Airports site unlikely to be possible
- Airports site may be possible

Maximum Airport Type – Full Service International Airport Transport Accessibility

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Airport Site Selection for Sydney

Suitable sites – Mining Subsidence

Maximum Airport Type – Full Service International Airport
Mine Subsidence Districts

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Airport Site Selection for Sydney

Suitable sites within Specified Localities

Single largest grouping of Maximum Airport Sites

21 Airport Type 3 Sites
12 Airport Type “Maximum” Sites
<table>
<thead>
<tr>
<th>Criterion</th>
<th>Luddenham</th>
<th>Badgerys Creek</th>
<th>Bringelly2</th>
<th>Greendale</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPV $ billions</td>
<td>+$3.35</td>
<td>+$1.13</td>
<td>+$1.14</td>
<td>+$2.45</td>
</tr>
<tr>
<td>Capacity Constrained</td>
<td>$350 (road)</td>
<td>$190 (road)</td>
<td>$270 (road)</td>
<td>$370 (road)</td>
</tr>
<tr>
<td>Capacity Unconstrained</td>
<td>$1,130 (rail)</td>
<td>$1,130 (rail)</td>
<td>$1,130 (rail)</td>
<td>$1,130 (rail)</td>
</tr>
<tr>
<td>1- Transport - Comparative Transport Upgrade Costs $ m</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2 - Growth Centres</td>
<td>Not affected</td>
<td>Partially Acoustic Footprint</td>
<td>Partially Acoustic Footprint</td>
<td>Not Affected</td>
</tr>
<tr>
<td>3 – Earthworks Platform Comparative Cost $ m</td>
<td>$284</td>
<td>$356</td>
<td>$407</td>
<td>$304</td>
</tr>
<tr>
<td>4 - Noise Impacts (N70) person-events</td>
<td>1,545,200</td>
<td>1,668,800</td>
<td>1,284,600</td>
<td>499,200</td>
</tr>
<tr>
<td>5 - Mine Subsidence Areas (MSAs)</td>
<td>Not affected</td>
<td>Not affected</td>
<td>Not affected</td>
<td>Not affected</td>
</tr>
<tr>
<td>6 - Property Acquisition (number of lots)</td>
<td>140</td>
<td>40</td>
<td>180</td>
<td>70</td>
</tr>
<tr>
<td>7 - Airspace Interaction Capacity (Movements per hr)</td>
<td>~90-100</td>
<td>~70-80</td>
<td>~70-80</td>
<td>~90-100</td>
</tr>
<tr>
<td>8 - Expansion to Maximum</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>9 – Major Flood risk</td>
<td>Non Major</td>
<td>Non Major</td>
<td>Non Major</td>
<td>Partial, 1:20, 1:100 and PMF events</td>
</tr>
<tr>
<td>10 - Other Major Costs</td>
<td>RAAF Orchard Hills Closure; may close Camden / Bankstown Flying training areas &amp; Wilton PJE closure; Major Power lines; Sydney Water Supply</td>
<td>Camden and Willon PJE closure; Major Power lines</td>
<td>Camden Airport - Closure, Severe impacts on Bankstown, Closure of RAAF Orchard Hills; Limitations on operations at Holsworthy; possible need to relocate some facilities/activities; Wilton PJE closure. Major power lines</td>
<td>Impacts on Bankstown Airport, closure of Camden and The Oaks Airports and Wilton PJE, Buffer to RAAF Orchard Hills. Major power lines</td>
</tr>
</tbody>
</table>
## Airport Site Selection for Sydney

<table>
<thead>
<tr>
<th>Central Coast Sites</th>
<th>Hawkesbury Sites</th>
<th>Nepean Sites</th>
<th>Burragorang Sites</th>
<th>Cordeaux-Cataract Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peats Ridge Somersby Wallarah</td>
<td>Wilberforce 10/28 Wilberforce 01/19 Castlereagh (including RAAF)</td>
<td>Kemps Creek Luddenham Badgerys Creek Bringelly 2 Greendale</td>
<td>The Oaks Silverdale Mowbray Park</td>
<td>Wilton Southend Wallandoola Dendrobium</td>
</tr>
<tr>
<td>Wallarah</td>
<td>a) Wilberforce 10/28 b) Wilberforce 01/19</td>
<td></td>
<td>a) Silverdale b) Mowbray Park</td>
<td>Wilton Wallandoola</td>
</tr>
<tr>
<td>Airspace relationship to Sydney Airport</td>
<td>Only available suitable site for Maximum</td>
<td></td>
<td>Only available suitable site for Maximum</td>
<td>Much lower noise impact</td>
</tr>
</tbody>
</table>

### Key reason(s) for being “more suitable”

- Airspace relationship to Sydney Airport
- Only available suitable site for Maximum

- Such differences as exist between them may be able to be resolved through design refinements and/or identification of a site that comprises parts of some or all these sites

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**Sydney University School of Civil Engineering 2015**

**More Suitable sites within Specified Localities**
Airport Site Selection for Sydney

Joint Study Recommendations

Sydney University School of Civil Engineering 2015
If not Badgerys Creek, then Wilton and .................

..........RAAF Base Richmond
minimally developed for LCCs
Airport Site Selection for Sydney

Further Assessment of Airport Development Options at Wilton - Technical Papers

- National transport policy context;
- Strategic and statutory planning; Planning and approvals; Land use planning context and future;
- Airport planning criteria; Meteorology; Airspace, existing aerodromes and aviation-related operational assessment;
- Acoustic footprints; Land transportation links; Utilities;
- Regional geology; Regional resource and resource extraction;
- Drinking water catchment, hydrology and drainage; Water and wastewater management; Earthworks;
- Flora, fauna and ecological values; Effects on airshed and air quality;
- Risks and site hazards- vulnerability to flood and fire;
- European cultural heritage; Aboriginal cultural heritage; Airport safeguarding;
- Impact on property and commercial enterprise; Social effects of airports; Visual impacts of airport; and Acoustic effects on people.
Airport Site Selection for Sydney  
Further Assessment of Airport Development Options at Wilton

"THE Western Sydney Airport Alliance has launched - and it has just one message for the government and opposition: "Start digging."" — Daily Telegraph 11 July 2013
Airport Site Selection for Sydney

March 2014 - Is it the Badgerys Creek Site?

‘Sydney needs a second airport, there is no argument about it.’
Treasurer Joe Hockey

The Sydney Morning Herald
Friday, February 14, 2014

Photo Source: News Limited 10 September 2013

Sydney University School of Civil Engineering 2015
Airport Site Selection for Sydney

And in Conclusion

Sydney University School of Civil Engineering 2015
Airport Site Selection for Sydney

So, it’s agreed, the new airport will be built at a place called Nimby...

NOT IN MY BACK YARD

North West Residents Airport Group
Randwick Airport Action Forum
Coogee residents Against Aircraft Noise
Strathfield Residents Against Aircraft Noise
The Community Advisory Committee [Third Runway Noise Management Plan]
Save-Our-Skies [SOS]
St. Peters-Tempe-Sydenham Neighbourhood Centre
Fairfield Residents Against Aircraft Noise [FRAAN]
Blacktown Association Against Aircraft Noise [BAAAN]
Bligh Residents Against Aircraft Noise
St Clair Residents Against Airport Madness SCRAM
Hornsby Residents Against Airport Noise HRANG
Association for an Airport Located Outside the Sydney Basin [AFALOS]
Cranebrook Residents Against Airport Noise
Kensington Precinct Group
BAOTI - Bankstown Airport Out - Tourism In
Bankstown Airport Community and Environment Forum

A Landing shortly?

Source: Australian Financial Review – Airline industry demands new Sydney airport by 2022 (11 December 2012)
Airport Site Selection for Sydney

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www.transportationassociates.com.au