

Arab Bank Australia



A WESTERN SYDNEY AEROTROPOLIS

Maximising the benefits of Badgerys Creek

Prepared by John D. Kasarda, Director, Center for Air Commerce, UNC Kenan-Flagler Business School

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Introduction

The Western Sydney Airport at Badgerys Creek presents a once-in-a-lifetime opportunity to transform our region by providing greater access to global markets, improved liveability, increased business activity and, importantly, jobs closer to home.

An airport will take time to finance and build, but the courageous and sensible first step has been taken. This is a significant and defining moment for the region in reshaping what is already a very rich history in Western Sydney, with the benefits to be felt for generations.

While the Government is busily preparing for the development of the Airport site and its associated transport links, we think it's time to consider how we can best leverage the Airport to drive economic activity within the region.

Given Australia has not built a greenfield airport of this scale in more than 50 years, it is logical to look to international case studies and expertise to see how we can ensure the region maximises the Airport's potential.

A vibrant, independent regional economy driven by knowledge jobs requires fast access to other cities and regions. This is why the Sydney Business Chamber approached Dr John Kasarda to prepare this report to determine whether an aerotropolis could be created in Western Sydney and what we need to do to create it.

Dr John Kasarda is a world-renowned US academic and leading developer of the 'aerotropolis' concept. An aerotropolis is a new urban form placing airports in the centre with cities growing around them, connecting workers, suppliers, executives, and goods to the global marketplace. We are now seeing these being built around the world.

“This is a significant and defining moment for the region in reshaping what is already a very rich history in Western Sydney, with the benefits to be felt for generations.”

This report demonstrates that with a collective vision and 21st century mindset we can build an aerotropolis around the Western Sydney Airport which will help us set up Western Sydney to take advantage of 21st century economic opportunities.

While we won't see this happen overnight, it is important start these conversations so we can encourage debate and bring along all sectors of the community, to ensure we have the right settings in place which don't preclude future growth and development.

I would like to thank Dr John Kasarda for his preparation of this report and for his personal attendance at the Sydney Business Chamber's Preparing For Take-Off: Western Sydney Airport Conference. I would also like to thank our project partners, Liverpool City Council and Arab Bank, for their assistance in delivering this report.

David Borger
Western Sydney Director
Sydney Business Chamber





Mayor's Message

Liverpool is the regional city for Sydney's fastest growing region – South West Sydney. We are now readying our city to harness the opportunities and meet the challenges that will flow from the development of the Badgerys Creek Airport in our local government area.

From the beginning Liverpool City Council has embraced the announcement of Badgerys Creek Airport. We understand that the potential of the airport to boost our city's economy and bring positive change is unparalleled.

We are not just building an airport. We are building opportunities that are limited only by our imagination.

Liverpool City Council is a major player in facilitating debate about the new airport, as well as fostering economic development and acquiring knowledge through research.

Badgerys Creek Airport will provide modern passenger and freight facilities, and will be a magnet for new technology activities across a broad spectrum of industries including aircraft maintenance, tracking software for freight, training and research facilities and services.

The Liverpool CBD is strategically positioned in the corridor between Sydney's two international airports. We are ideally located to host professional and back office services needed to support the Badgerys Creek Airport and its connecting transport infrastructure.

Liverpool City Council is working closely with the Commonwealth and NSW Governments and the private sector. In 2014 we welcomed the announcement of road upgrades to infrastructure as a result of the airport announcement.

**"We are not just building an airport.
We are building opportunities that are
limited only by our imagination."**

Council has established the Badgerys Creek Task Force to look at key requirements needed to develop the area around the airport into an innovation and logistics hub.

We want to make sure we capture all the big ideas and possibilities for Badgerys Creek Airport. We don't want to be limited by the boundaries of our own knowledge. That is why we have jointly funded *A Western Sydney Aerotropolis*, along with the NSW Business Chamber and the Arab Bank. Badgerys Creek is one of the biggest opportunities for the future of western Sydney and we intend to explore every possibility to make it a success.

Ned Mannoun
Liverpool City Mayor



A large commercial airplane is the central focus, parked on a tarmac. The scene is bathed in the warm, golden light of a sunset or sunrise, with long shadows cast across the pavement. In the background, other aircraft are visible, and a range of mountains stretches across the horizon under a hazy sky. A ground service vehicle is positioned near the front of the main aircraft, and a person in a high-visibility vest is standing nearby. The overall atmosphere is one of a busy airport during the 'golden hour' of the day.

A WESTERN SYDNEY AEROTROPOLIS

Creating 21st-century competitive advantage

Prepared by John D. Kasarda, Director, Center for Air Commerce, UNC Kenan-Flagler Business School
May 2015



Author's Note

In addition to directing the Center for Air Commerce at the University of North Carolina's Kenan-Flagler Business School, John D. Kasarda is President and CEO of Aerotropolis Business Concepts LLC (www.aerotropolisbusinessconcepts.aero). He may be contacted at john_kasarda@unc.edu or kasarda@aerotropolisbusinessconcepts.aero.

“Decisions on airport location and capacity are among the most important strategic choices a country or city can make, influencing the economic, environmental, and social development of cities and regions more than any other single planning decision.”

Sir Howard Davies, Airports Commission Chair
Interim Report on London’s Air Capacity Needs,
December 2013

The Macro Context

Sydney, Western Sydney, and all of New South Wales (NSW) are at an economic crossroads. Strategic decisions and development initiatives taken today will determine the future direction that the City, metropolitan region, and State will go in terms of economic mix, business competitiveness, job creation, and citizen prosperity.

Critical issues are at stake. Will Sydney and its greater metropolitan region continue to transition successfully to “new economy” sectors including biomedical, ICT (information communication technology),

microelectronics, R&D, and advanced business services?

Will agriculture and traditional manufacturing industries, as well as high-tech and high-value white-collar service industries, be able to compete effectively throughout Asia-Pacific and worldwide in the decades ahead? Will the entire metropolitan region fully capitalise on the international airport being planned at Badgerys Creek in Western Sydney and its proposed connecting surface infrastructure to attract substantial private-sector investment, create quality jobs, boost tourism, and reduce youth unemployment? Finally, will commercial, logistics, and industrial development outward from this airport be economically efficient, attractive, and environmentally and socially sustainable, making the airport precinct and outlying Local Government Areas (LGAs) enduring magnets for new economy workplaces and workers?

All these issues, of course, are interwoven. How they are addressed will shape the economic fate of Sydney, Western Sydney, the State and, indeed, the nation. It is therefore imperative that they be addressed with both strategic vision and coordinated action. This requires, first, a solid understanding by local, State, and Federal officials of the pivotal roles that speed and connectivity play in driving 21st-century business competitiveness, firm location, and regional economic development. Second, government agencies at all levels, in partnership with the private sector and other stakeholders, must implement a reinforcing set of strategies, policies, and investments to harness these new competitive drivers for the commercial advantage of the entire Sydney region. Key to this is appropriately developing and leveraging the new Western Sydney Airport (WSA) and its outlying areas following the aerotropolis model.

The Aerotropolis Model

What is an aerotropolis, its chief value proposition, and primary commercial and infrastructure components? And how can the aerotropolis model be leveraged into a successful development strategy for Western Sydney, providing the region with special competitive advantages in the decades ahead.

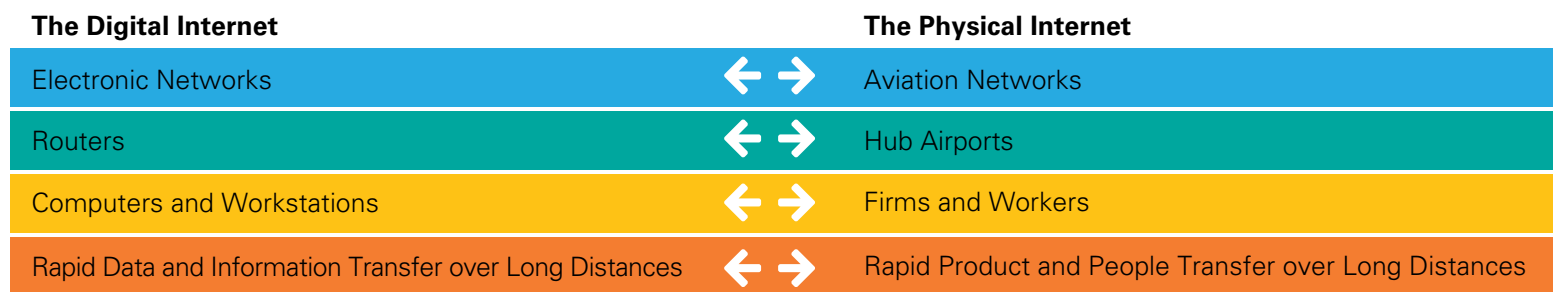
Simply stated, an aerotropolis is a metropolitan sub-region whose infrastructure, land-use, and economy are centred on an airport.¹ It consists of the airport’s aeronautical, logistics, and commercial elements, connecting surface transportation infrastructure, and outlying corridors and clusters of aviation-oriented businesses and residential developments that feed off each other and their accessibility to the airport.

The chief value proposition of the aerotropolis is that it offers businesses rapid connectivity to their suppliers, customers, and

enterprise partners nationally and worldwide, increasing both firm and regional efficiency. Aerotropolis firms, many in the high-value perishables, modern industrial, and advanced business service sectors, are often more dependent on distant suppliers, customers, and enterprise partners than those located in their own region.

By providing nationally and globally oriented, time-sensitive firms with rapid long-distance accessibility, the aerotropolis helps them cut costs, increase productivity, and expand market reach, thereby becoming more competitive and participating more effectively in the international division of labour. Metropolitan and State-wide trade in higher-value goods and services is likewise accelerated and broadened through expanding airline routes that operate as a “Physical Internet,” moving products and people quickly over long distances analogous to the way the digital Internet moves data and information (see Exhibit 1).

Exhibit 1: Key Components of the Digital and Physical Internets



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¹ See www.aerotropolis.com and its publications links.

“In addition, the aerotropolis attracts and sustains a range of advanced business service firms whose executives and professionals frequently travel...”

The routers of this Physical Internet are airports, which are the concrete interfaces where the national and global meet the local in people and product movements. Their dual roles as airline routers and global-local interfaces are making airports business magnets and regional economic catalysts as they attract, sustain, and grow aviation-enabled firms in their environs.

By ‘aviation-enabled’, I mean firms and industries that are able to operate primarily because of the connectivity afforded by passenger and air cargo transport. Airports which offer a greater choice of flights and destinations, more frequent service, and more flexibility in rescheduling (that is, they possess the fastest and broadest Physical Internet) have become particularly powerful assets to such firms and regions that depend as much on “economies of speed” as others do on economies of scale or economies of scope.²

The aerotropolis also contains the full set of logistics and commercial facilities that support aviation-enabled businesses, cargo, and millions of air travellers who pass through the airport annually. These include, among others, freight forwarding, third-party logistics (3PL), warehouse and distribution facilities, hotels, recreation, wellness, convention and exhibition complexes, and office buildings along with shopping, dining, leisure, entertainment, and tourism venues.

In addition, the aerotropolis attracts and sustains a range of advanced business service firms whose executives and professionals frequently travel to distant sites or who bring in their clients by air for short-stay meetings. These firms, referred to as producer service firms by economists, include such sectors as auditing, architecture and

engineering, consulting, corporate law, ICT, international finance, and marketing.

Corporate headquarter functions are likewise gravitating to airport areas either physically in office complexes or by using airport area hotels as virtual corporate headquarters where widely dispersed executives fly in for sales meetings, board meetings, and high-level decision-making.³ This optimises executives’ long-distance connectivity while minimising their local ground transport times and costs.

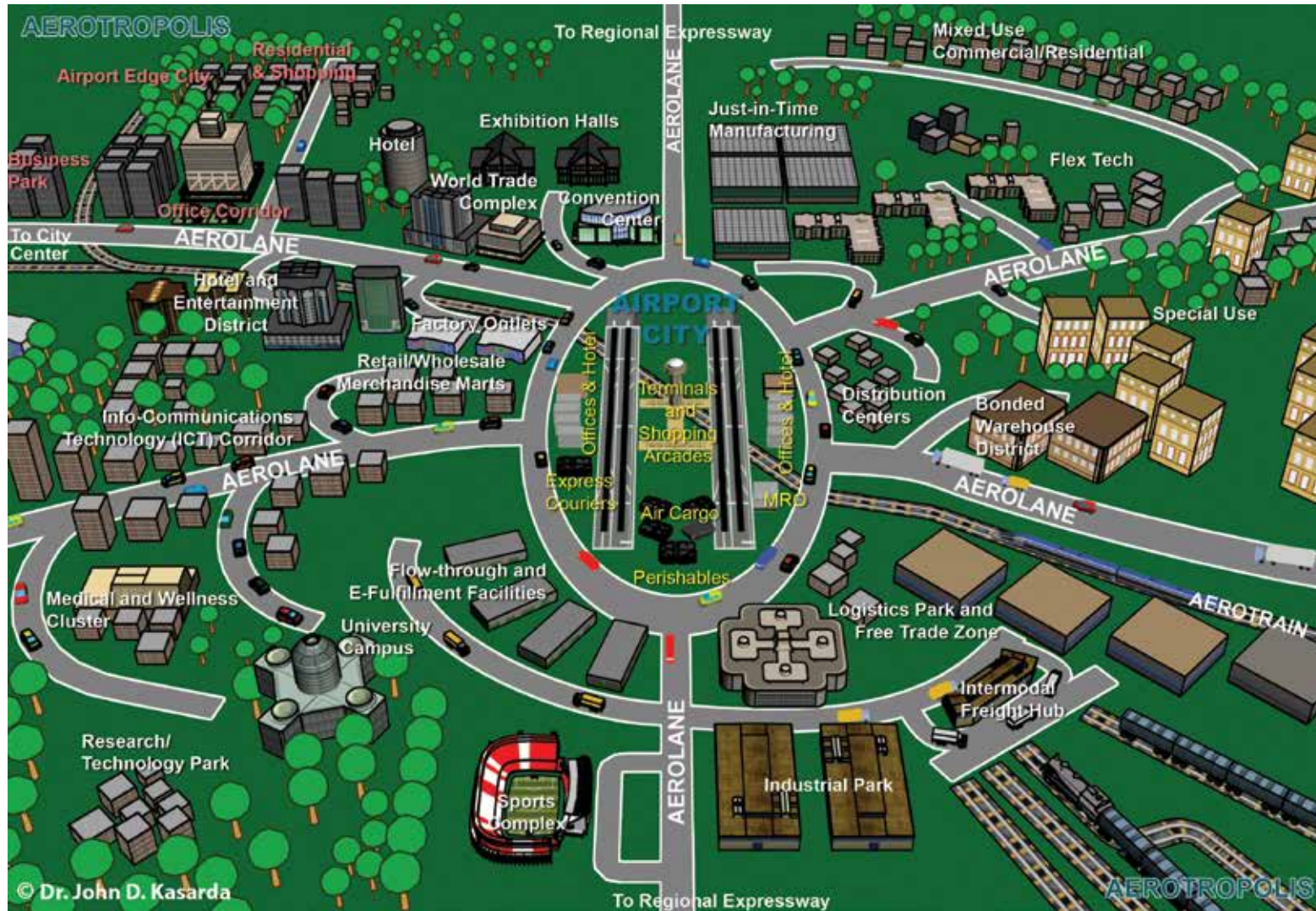
With increasing numbers of the above sets of aviation-oriented businesses and commercial service providers clustering around airports, these areas are becoming significant urban growth nodes where air travellers and locals alike work, shop, meet, exchange knowledge, conduct business, eat, sleep, and are entertained, often without going more than 20 minutes from the terminals. An airport city evolves on and immediately around the airport serving as the multimodal, multifunctional central business district of an extended aerotropolis, anchoring aviation-enabled trade in goods and services and driving them throughout the broader metropolitan region.

Spatially, just as the traditional metropolis is made up of a central city and its commuter-linked suburbs, the aerotropolis consists of an airport city at its core and outlying corridors and clusters of aviation-linked businesses and their associated residential developments. Some of these clusters are substantial and can be observed up to 30 km from the busiest hub airports with significant airport economic impacts measured up to 90 km. The largest of these outlying clusters, such as Amsterdam Zuidas near Schiphol Airport, Las Colinas near Dallas-Ft. Worth International, and South Korea’s New Songdo City, 12 km from Incheon International Airport (all to be discussed later), have become vibrant, globally significant airport edge cities whose business tentacles routinely touch all major continents.

² Kasarda, John D. “Aerotropolis: Business Mobility and Urban Competitiveness in the 21st Century” in *Cultures of Mobility* edited by Klaus Benesch (Heidelberg: Heidelberg University Press, 2014); John D. Kasarda and Greg Lindsay, *Aerotropolis: The Way We’ll Live Next* (New York: Farrar, Strauss, and Giroux, 2011); John D. Kasarda, “Time-based Competition and Industrial Location in the Fast Century”, *Real Estate Issues* 23(4), pg. 24-29, Winter 1998/1999.

³ John D. Kasarda, “Airport Cities: The Evolution” *Airport World*, pp. 24-27, April/May 2013.

Exhibit 2: Compressed Aerotropolis Schematic with Airport City Core



A compressed schematic of the aerotropolis with its airport city core is shown in Exhibit 2. No aerotropolis will look exactly like this illustration, but many will eventually take on similar features, led by newer 'greenfield' airports such as WSA that are much less constrained by internal space and by prior decades of adjacent development.

The aerotropolis is thus much more a dynamic, forward-looking concept than a static, cross-sectional model where present form often reflects historic airport-area development well before aviation and airports took on their current economic functions. In expansive greenfield areas such as Badgerys Creek, new commercial, logistics, industrial, and residential clusters will form near the airport and in and around

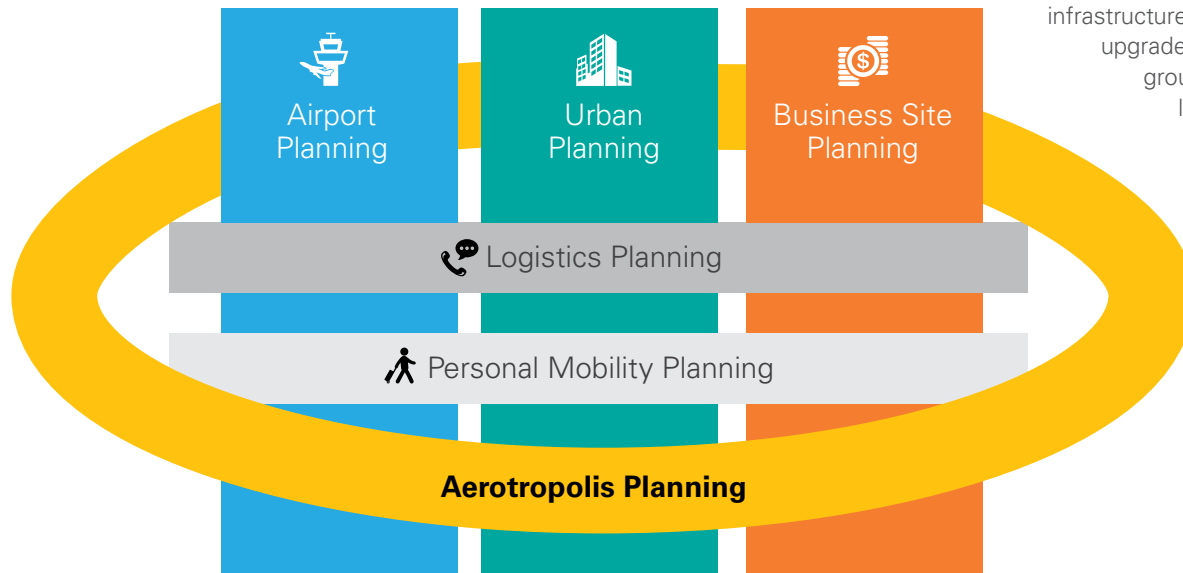
strategically located edge cities such as Liverpool. Multimodal transportation infrastructure (air, highway, rail, and links to ports) will connect Western Sydney Aerotropolis businesses to markets near and far, undergirding the Aerotropolis's future local, regional, and national economic significance.

Efficient multimodal connectivity is central to the aerotropolis model. For this reason, the United States Congress defines an aerotropolis as a "planned and coordinated multimodal freight and passenger transportation complex which provides efficient, cost-effective, sustainable, and intermodal connectivity to a defined region of economic significance centred on a major airport."⁴

But the aerotropolis model encompasses more than airport-oriented intermodal connectivity. The model also encompasses active strategy. That is, a successful aerotropolis represents a constellation of infrastructure, institutional, economic, and policy interventions which upgrade airport region urban and employment assets, reduce ground-based transport times and costs, and expand speedy long-distance connectivity to leverage aviation-enabled trade in goods and services for regional competitiveness, job creation and greater prosperity of those at all socioeconomic levels.

The aerotropolis strategy involves coordinated multimodal transportation and business site planning complemented by appropriate urban planning. Done properly, the strategy brings together and reconciles (1) the business site and profitability objectives of individual firms making capital investments, (2) airport and connecting surface transportation planning objectives of ensuring maximal access to the airport, CBDs, and other business sites at the lowest possible cost, and (3) urban planning objectives of liveability and environmental sustainability.

Exhibit 3: The Golden Ring of Aerotropolis Planning



⁴ United States Congress [112th] House of Representatives bill 658, Aerotropolis Act 2011.

“Closely coordinating aerotropolis land-use planning with surface infrastructure planning is critical...”

Aerotropolis planning likewise includes designing systems for efficient, secure cargo logistics and for speedy, safe mobility of passengers to and from the airport (see Exhibit 3).

Aerotropolis planning is unique in that business, urban, airport, and surface transport objectives are addressed as an integrated whole to create economically efficient, attractive, and sustainable airport region development. Such integrated planning is required to prevent the chaos, confusion, congestion, and unsightliness often seen at and around many major airports throughout the world, which detract from their image and that of the cities and metropolitan areas they serve.

Extensive surface transportation investment, such as that being made by Australia’s Federal and State Governments, well-ahead of airport development at Badgerys Creek, is particularly important. This is because people and product air journeys neither begin nor end at the passenger and cargo terminals. Passengers and cargo often spend considerable time and expense in getting to and from airports and in overcoming airport area congestion and other obstacles, creating disproportionately high “last mile” costs.

Last mile costs refer to the time, money, and effort for air travellers and air cargo shipments to make their respective ways to (or from) the airport, with greatest delays typically near the airport or CBD destinations. Because last mile costs can be substantial whereas the marginal costs of flying an extra mile are often insignificant, those airports and surrounding areas which successfully minimise last mile costs are often able to enhance the passenger experience and be more attractive to modern industrial and business services investment.

Aerotropolis planning differs from conventional airport planning by considering (1) “inside-the-fence” airport development, (2) mutually beneficial “outside-the-fence” development, and (3) last mile (close to airport or destination) costs holistically. Apropos the latter, we learned years ago that the battle for air cargo, as well as the competitiveness of industries relying on air cargo, is increasingly won on the ground through good airport surface accessibility to suppliers, manufacturing

facilities, distribution centres, retailers, and customers.

The same is true with passenger travel. Sydney’s Kingsford-Smith Airport (KSA) is currently facing challenges during peak travel periods where considerable time can be spent by its air travellers on the ground, stuck in traffic, waiting for congested trains and terminal gate areas to free up, or backed up on airport taxiways. Particularly for flights of moderate length – the most common trajectory for business travel – such delays are not only onerous, but can also negatively impact the competitiveness of time-sensitive firms and decrease a city’s and region’s appeal to them.

As WSA and its surrounding area ground traffic and businesses grow in future decades, congestion can create similar adverse conditions. The result will be that the appeal and economic developmental potential of the new airport are constrained.

That reality reveals a shortcoming of most airport, State, and metropolitan municipal planning. Although integrated airport area land use and transportation planning is a valued ideal, in practice, that ideal is often not achieved. By planning the highways and passenger rail in the Western Sydney Aerotropolis that will efficiently connect WSA to Liverpool, Parramatta, Sydney, and other key nodes in the metropolitan region, Federal, State and local government officials are “getting it right”.

Closely coordinating aerotropolis land-use planning with surface infrastructure planning is critical for aesthetic and operational reasons as well as for fostering successful commercial and industrial development. First, as a future air gateway for the Sydney metropolitan region, WSA and its immediate environs will set the initial and the final impressions for many distant travellers to the region. Second, as previously noted, essentially all air journeys are intermodal with the first

“Improved road and passenger rail infrastructure can substantially expand the effective catchment area of WSA, attracting more passengers and cargo, thereby supporting more flights.”

and last legs of a trip via a surface mode. Third, surface infrastructure helps anchor and connect cargo users, freight forwarders, and other airport-oriented businesses. As a result:

- Integrated transportation and airport area land-use planning can increase the efficiency of WSA's passenger and cargo flows and improve the appearance and property values of the airport precinct and nearby municipalities.
- Improved road and passenger rail infrastructure can substantially expand the effective catchment area of WSA, attracting more passengers and cargo, thereby supporting more flights.
- New and improved freight rail intermodal facilities in Western Sydney (such as the proposed Moorebank Intermodal Terminal), connected to Port Botany and traditional regional and State agricultural and industrial clusters, can attract logistics and freight-dependent firms. Some of these firms also have air transportation needs, creating a possibility for cross-modal subsidisation.
- Well-planned surface-to-air logistics infrastructure can also catalyse growth of NSW's higher-value agriculture, high-tech, and advanced manufacturing sectors, thereby further diversifying and strengthening the State's economy.
- Commercial and logistics development on WSA property can generate substantial non-aeronautical revenues for the airport operator allowing it to make a profit and support continuous infrastructure improvements while keeping its costs to airlines competitive.
- Commercial and logistics development beyond the airport can generate additional passengers and cargo for WSA by providing amenities and attractions to WSA's future passengers and value to cargo processing.
- Efficiently connected and well-designed airport edge city developments can economically and demographically reinvigorate Liverpool and other LGAs in the Western Sydney Aerotropolis.
- Such commercial and logistics development, properly sited and supported by the new airport and planned surface transportation infrastructure (to be described shortly), will provide NSW with a much more dynamic Western Sydney growth machine that will boost trade, attract investment, create jobs, and drive economic development throughout the greater Sydney metropolitan region and beyond.

The sections that follow describe these processes, drawing on the experiences of modern airports and successful aerotropolis developments around the world. I begin with the engine of the Western Sydney Aerotropolis, the planned airport at Badgerys Creek. I then provide three brief case studies of modern aerotropolis development, including their airport edge cities. I will apply the airport edge city model to Liverpool as an example of how nearby municipalities can benefit while helping make the Western Sydney Aerotropolis a success. Next, I assess the prospects for a Western Sydney Aerotropolis including the financial viability of the new airport at Badgerys Creek. I conclude with a set of recommendations and action steps to realise the full potential of the new airport and its associated aerotropolis for Sydney and Western Sydney.

⁵ The issues and points in the above section are elaborated in John D. Kasarda & Steven J. Appold, "Planning a Competitive Aerotropolis" in *Advances in Airline Economics, Vol. 4, The Economics of International Air Transportation*. James H. Peoples, Jr., Editor. (West Yorkshire: Emerald Group Publishing, 2014)



Aviões
Departures
Saídas

Terminal B

Destino
Destination
Destino

No.
Flight
Voo

Aeronave
Aircraft
Aeronave

Emprego
Boarding
Emprego

Tempo
Gate
Portão

Operações
Remarks
Observações

S: 1234	BR	1233	66/71	12:30	32	CEB000
S: 1235	WI	7521	14/15	12:55	30	CEB000
S: 1236	AA	4270	8/ 9	12:10	31	CEB000
S: 1237	WI	3523	12/13	12:30	35	
S: 1238	SL	3553	55/58	12:30	38	CEB000
S: 1239	WI	470	3/ 5	12:30	43	
S: 1240	WI	9703	16/18	16:55	NS	ESTIM12
S: 1241	BR	6220	66/71	12:45	NS	
S: 1242	BR	6224	66/71	12:50	NS	
S: 1243	BR	6100	66/71	14:00	NS	

The Western Sydney Aerotropolis Engine

The engine for a Western Sydney aerotropolis will be the new airport at Badgerys Creek. This airport, whose proposed history dates back to 1969, became a tangible prospect when the Australian Government acquired approximately 1,700 hectares at Badgerys Creek between 1986 and 1991 as a future site for Sydney's second commercial airport.

A number of studies have been conducted in the last ten years confirming the wisdom of this original site selection. After decades of deliberations and debate, a decision was finally made in April 2014 to proceed with formal planning and construction of WSA at Badgerys Creek. This decision concurrently included Federal and State plans for substantial connecting surface transportation infrastructure together with additional comprehensive environmental assessments.

The Government exercised further vision and wisdom by protecting land surrounding the site from residential and urban development incompatible with 24/7 airport operation or that conflicted with highest and best commercial, industrial, and logistics use of nearby property. Such aerotropolis-like thinking went further. Its advocates viewed WSA as more than a relief valve for capacity-constrained Kingsford-Smith Airport near the Sydney CBD or a more conveniently located airport to serve Western Sydney's growing population. WSA was also viewed as a magnet for Western Sydney business investment and catalyst for regional job growth, tourism, and economic development.

Similarly wise (and visionary) was the Federal Government's decision last year to follow a "roads first, airport second" infrastructure implementation strategy. Since the new airport will probably take a minimum of ten years to plan, construct, and be operationally certified, this important decision will result in efficient access to and from WSA being in place at the airport's opening.

Transforming strategy into dollars, the Federal and State Governments

have designated a total of \$3.5 billion for new, expanded, or upgraded roads in the WSA area over the next ten years (See Exhibit 4). Studies have also been commissioned to determine the most efficient passenger rail connectivity to the airport from outlying population centres and eventually to and from Sydney. The NSW Government is simultaneously taking action to protect potential rail transit corridors in the broader airport region.

WSA is proposed to be developed in stages as passenger and cargo demands warrant. It will commence with a single runway, passenger terminal, and support facilities estimated to cost \$2.4 billion (in 2012 dollars) initially. At build-out, the airport is envisioned having two parallel runways up to 4,000 m each (also illustrated on Exhibit 4), and associated airside and landside facilities that can handle 70 million passengers a year, more than sufficient to drive a major aerotropolis.

It is important to reiterate that aerotropolis success rests as much on fast and efficient local and regional surface connectivity as it does on speedy national and global air connectivity. The fundamental metric for aerotropolis planning is not space and distance but time and cost. It is not how far but how fast one can connect key nodes locally, regionally, nationally, and internationally with transit time itself viewed as a cost.

Planned multimodal surface transportation infrastructure will provide the skeleton for a Western Sydney Aerotropolis upon which its commercial and industrial muscle can attach and grow. Much of this commercial and industrial muscle will form and grow in the Western Sydney Employment Area (WSEA) adjoining WSA and outlying municipalities along improved surface transit corridors. The 10,000-plus hectare WSEA alone has been designed to accommodate 57,000 new commercial and industrial jobs in the next 30 years with the potential for hosting up to 212,000 jobs at full build-out. Other airport area

WESTERN SYDNEY

Airport Site and Infrastructure



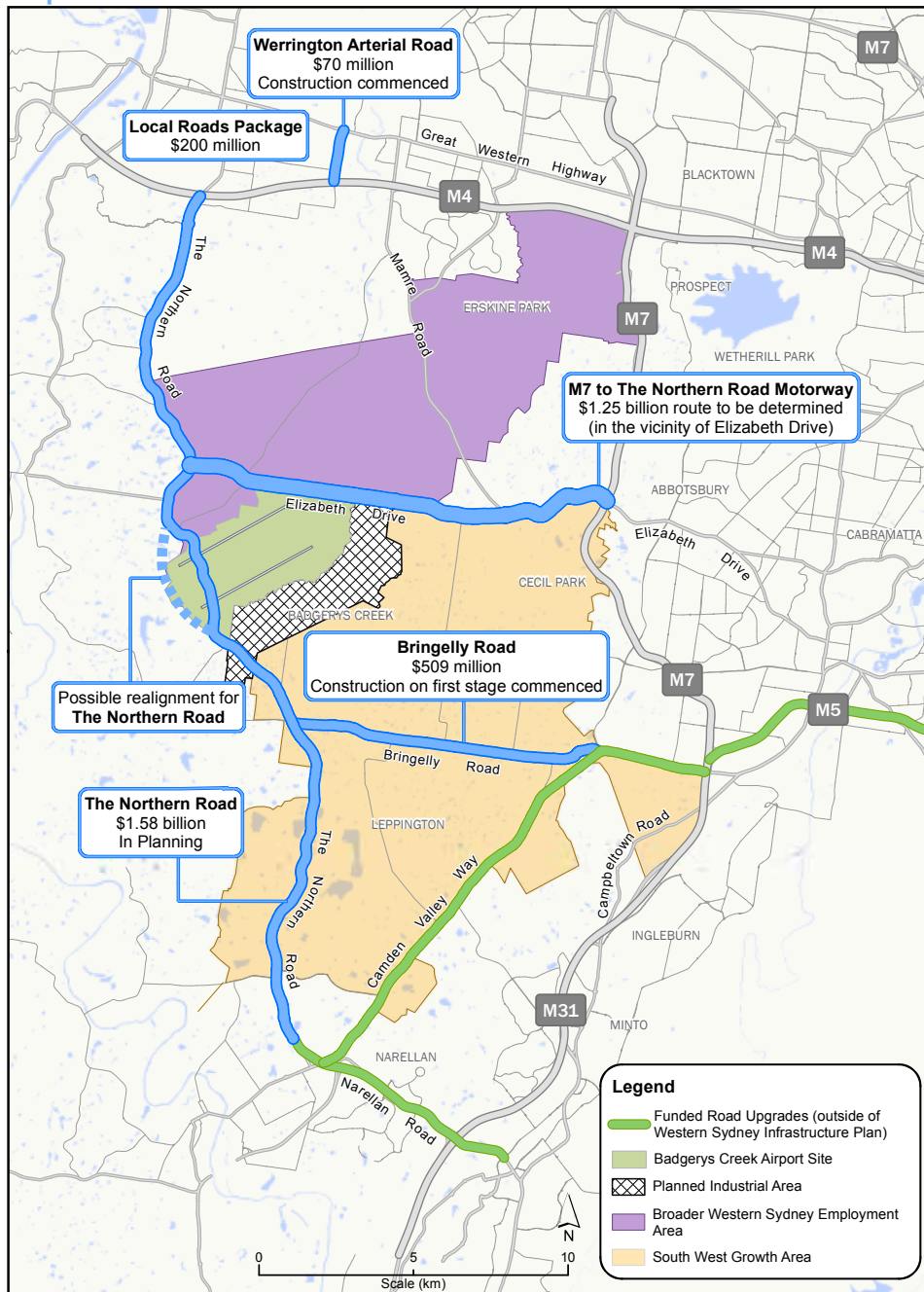
employment zones have been planned together with expansive residential zones to house a growing aerotropolis workforce (see Exhibit 5).

WSA's future multimodal connections to its nearby employment zones, outlying municipalities, Sydney, and KSA will substantially boost the airport's economic impacts on Western Sydney, likely well beyond those forecast in prior studies of WSA.

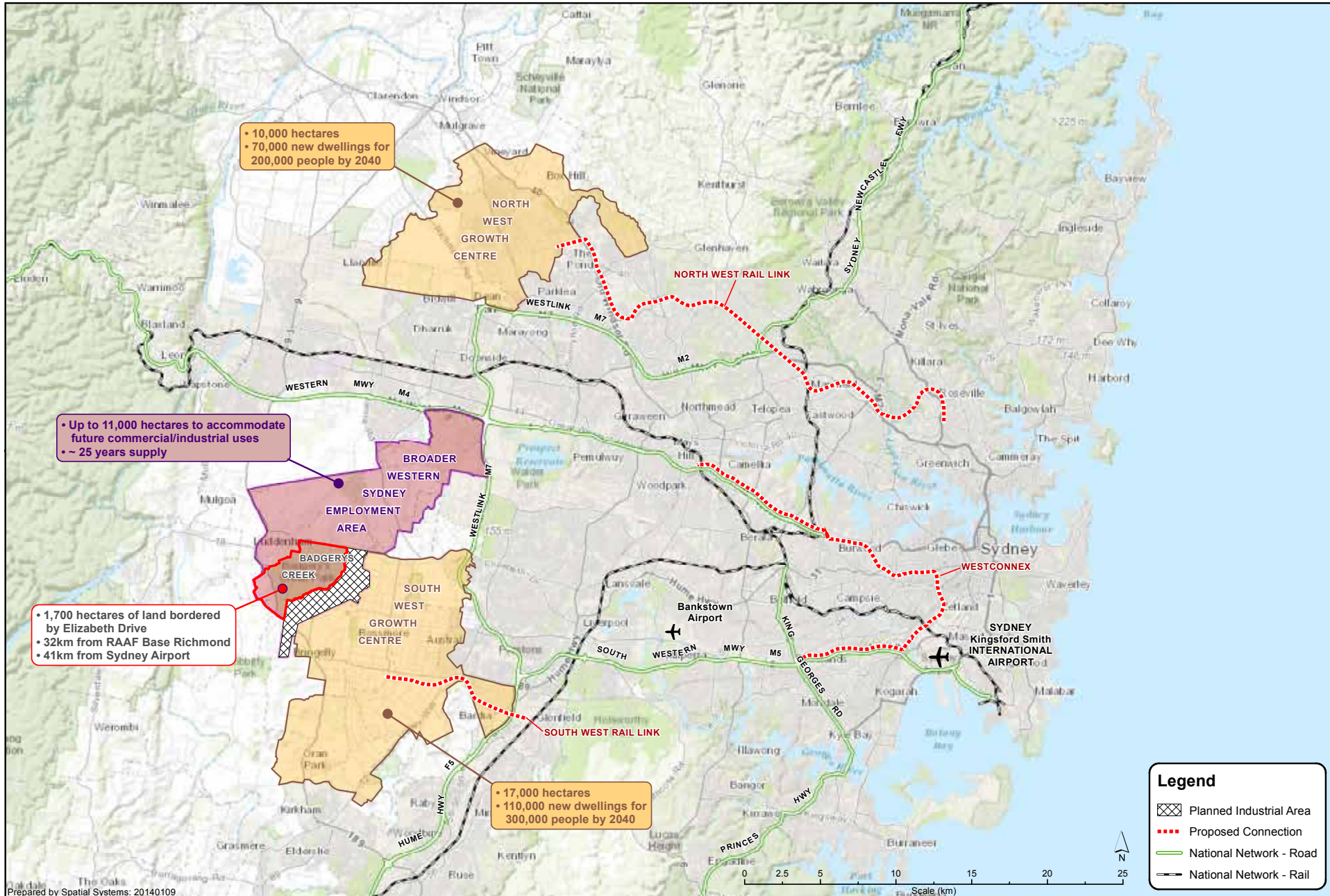
The most recent economic impact study commissioned by the NSW Business Chamber and conducted by Deloitte Access Economics (2013) estimated that WSA itself would have an annual impact of between \$9.2 billion and \$15.6 billion on Western Sydney (predicated on various airport development scenarios) by 2050. Newly generated Western Sydney jobs would range from between 12,645 and 19,982 with the greatest economic and job impacts on the Liverpool, Blacktown, the Hills Shire, Penrith, and Parramatta LGAs.

For the entire Sydney region, WSA's estimated economic impact was between \$15.7 billion and \$25.6 billion annually and new jobs generated between 20,601 and 31,736 FTEs by 2050. Deloitte's analysis did not include the additional economic benefits of reducing unemployment or increasing the productive efficiency of existing and new businesses.⁶

⁶ Deloitte Access Economics (2013) *Economic Impact of a Western Sydney Airport*



BADGERYS CREEK AND MAJOR TRANSPORT CONNECTIONS



Case Studies of Aerotropolis Development

These impacts can be explicated and the challenges of actually achieving them better understood by looking at modern airport and aerotropolis commercial development elsewhere in the world. Space constraints will only enable me to highlight key infrastructure and commercial features of three of these: Amsterdam Schiphol, Dallas-Fort Worth, Texas, and Incheon, South Korea.

Amsterdam Schiphol

Amsterdam Schiphol is the leading European airport city and is clearly driving a greater Aerotropolis. Handling 55 million passengers and 1.6 million tonnes of cargo in 2014, Schiphol's grounds employ 62,000 people daily.

Two high-speed motorways (A4 and A9) are within 2.5 km of Schiphol's centre and link the airport to downtown Amsterdam and the broader region. A modern train station, directly under the passenger terminal, efficiently connects travellers to the city centre and the rest of the Netherlands through its local and intercity rail lines.

Schiphol's passenger terminal, incorporating modern retail plaza design elements, contains expansive, well-appointed shopping and entertainment arcades accessible both to travellers and the general public. By combining terminal design with mall design, the Schiphol Group (the airport's operating company) has substantially increased revenues through concession rents and passenger purchases.

Within walking distance of the passenger terminal, the Schiphol Group has developed Schiphol CBD, a dense agglomeration of office buildings, hotels, and exhibition facilities. These buildings demand some of the highest rents in the Amsterdam metropolitan area, which help keep the airport profitable.

Radiating from Schiphol along the A4 and A9 motorways are strings and clusters of business parks, corporate headquarters, logistics parks, high-tech industrial parks, distribution centres, information and telecommunication complexes, and wholesale markets such as the famous Aalsmeer Flower Auction Market all of which are part of a greater Schiphol Aerotropolis.

An excellent example of airport-aerotropolis development synergy is Amsterdam Zuidas, 14 km east of the airport – 12 minutes by airport expressway and 7 minutes by airport express train to Schiphol's passenger terminal. Zuidas is a 21st-century airport "edge city," containing over 1.1 million m² of class-A office space and retail, and nearly 1 million m² of housing, along with a large commercial mixed-use passenger rail station with a World Trade Centre above it (see Exhibit 6). Among this airport edge city's occupants are the world headquarters of ABN AMRO and ING banks, plus a number of regional corporate headquarters of other multinational firms who rely on Schiphol's excellent European and international connectivity for business travel.

In good measure because of the airport and its excellent multimodal connections, over 1,000 international firms have chosen the Amsterdam region as a place to invest and create jobs. Most of these have located in downtown Amsterdam, Zuidas, and in the immediate Schiphol area.

Schiphol's experience illustrates that as the aerotropolis forms and evolves, it can be a reinforcer of edge-city and downtown investment and business vitality, rather than a competitor. Another good example comes from the US. Airplane manufacturer, Boeing, when relocating its world corporate headquarters from Seattle, selected downtown Chicago, rather than Chicago's O'Hare airport area, even though many

Exhibit 6: Amsterdam Zuidas – Airport Edge City



Source: City of Amsterdam, Sustainable Zuidas (2011)

of its commercial clients, including the headquarters of United Airlines, were in the immediate airport area.

Dallas Ft. Worth

DFW International Airport is the cornerstone of Dallas-Ft. Worth, Texas Metroplex, the fastest growing metropolitan region in the U.S. between 2000 and 2010. In 2014, DFW had 63.5 million passengers and 697,000 tons of cargo. Approximately 65% of the airport's revenues come from commercial activities, including significant commercial real estate development on its property.

Extensive government investment in DFW's connecting highway and passenger rail infrastructure has helped spawn a DFW Aerotropolis. This investment also reinforced the airport's economic impact on the cities of Dallas and Ft. Worth and the broader metropolitan region,

Exhibit 7: Las Colinas – Dallas-Ft. Worth Airport Edge City



Source: Las Colinas Association

estimated to be in excess of US\$30 billion annually.

With DFW serving as the multimodal driver of the Metroplex, the airport's economic reach and impact extends many kilometres out along nearby interstate highways and expressways. Two excellent examples of this are Infomart and Dallas Market Center, both of which are located on the I 35 highway corridor to DFW. Infomart is a huge, ultra-contemporary merchandise mart for information and communication technology (ICT) companies. Tens of thousands of visitors travel through DFW annually to attend Infomart trade shows.

Dallas Market Center—a cluster of four large buildings that contain nearly five million square feet of display space for fashion clothing and home merchandise—is the world's largest wholesale merchandise mart. Hundreds of thousands of buyers and vendors fly into Dallas annually to conduct business at Infomart and Market Center. It is

purported that Dallas Market Center attracts buyers and vendors from all 50 U.S. states and over 80 countries who purchase an estimated 300,000 airline seats annually and account for over 700,000 nearby hotel room nights while conducting approximately US\$8 billion in wholesale transactions.

The airport has been a major factor in attracting eighteen Fortune 500 world corporate headquarters to the cities of Dallas and Ft. Worth and to the broader DFW region. This includes five Fortune 500 headquarters in airport edge city, Las Colinas, some 12 km east of DFW Airport. This vast 5,000-hectare planned development has 2.1 million m² of class-A office space, 1 million m² of light industry, 121,000 m² of retail, over 14,000 single- and multi-family residences, 2,845 luxury and business-class hotel rooms, 75+ restaurants, and 4 championship golf courses (see Exhibit 7). Dedicated light rail to DFW and to downtown Dallas is in operation making connectivity to both the downtown and airport more efficient.

Las Colinas is actually a designed mega-real-estate project within the suburban city of Irving, Texas (2013 population 228,653). Irving is considered one of the most dynamic suburban municipalities in the United States. Its continued growth and economic prosperity are directly tied to Dallas-Ft. Worth International Airport.

Incheon: Korea's Air City

The most ambitious Asia-Pacific airport city and greater aerotropolis development is taking place at and around South Korea's Incheon International Airport (2014 PAX = 45.5 million; cargo = 2.6 million tonnes). At its core is Air City, a set of airport commercial complexes being developed with all the features of a modern metropolitan centre: retail areas, office buildings, hotels, entertainment, and leisure facilities, a conference and exhibition centre, as well as a mixed-use nearby new town. Elaborate expressways, bridges and tunnels connect the airport to Seoul (55 kilometres to the North) and to nearby islands, the latter forming an expansive commercial and residential complex. A passenger

rail line between downtown Seoul and Incheon International Airport was completed in 2010.

The airport property (6,000 hectares) is considerably larger than others in the Asia-Pacific region. Opened in March 2001, Incheon was immediately among Asia's leading airports in passengers and cargo because essentially all air traffic was moved from Kimpo International Airport close to downtown Seoul.

Its current master plan (with a 15-year horizon) has commercial and residential development evolving through three phases, creating an ever-broadening and deepening urban expanse. The first phase (already complete) is an Airport Support Community consisting of airport-related industries (primarily logistics), commercial services, and housing for airport area employees and their families, which total 100,000. The second phase (also completed) involves expanding (both spatially and functionally) the Airport Support Community while transforming it into an International Business City. A 170-hectare international business centre composed of four office complexes, a shopping mall, convention and exhibition facility and two four-star hotels opened between 2007 and 2009.

The third and most ambitious stage (The International Free Trade City) is a full-blown aerotropolis tied together by the extended Incheon Free Enterprise Zone (IFEZ). The IFEZ will encompass three islands, connected by expressway bridges (man-made Songdo and Cheongra, along with Yeongjong where the airport is located). A pivotal component in the Republic of Korea's plan to transform the country into the commercial and trading centre of Northeast Asia, IFEZ is being promoted as "Pentaport" a combined airport, business port, seaport, teleport, and leisure port.

The greater Incheon Aerotropolis has dual urban growth poles. The first, Yeongjong Island, is its Air City, with development on the airport focusing on aviation-oriented office functions, hotel, trade and exhibition facilities, logistics, and tourism and leisure activities.

Exhibit 8: New Songdo – Airport Edge City near Incheon International Airport



Source: Gale International (2014)

“ ...the Korean Government agreed to construct a 10-km, 6-lane bridge from New Songdo City directly to Incheon International Airport...”

Songdo Island hosts the aerotropolis' second urban growth pole, New Songdo City. This airport edge city has been created from scratch entirely on reclaimed land by Gale International of New York City and POSCO E & C (a division of South Korea's largest steel producer) in partnership with the Korean Government. The US \$35 billion project is the largest private development project currently underway in the world.

At full build-out by 2020, New Songdo City will have over 3.7 million m² of offices and 1 million m² of retail space, 500,000 m² of hotels, more than 65,000 permanent residents (in 22,500 new housing units), a convention centre, a cultural centre, a central park greenway, an 18-hole golf course designed by Jack Nicklaus, a state-of-the-art medical facility, and an international school for children of expatriate workers (see Exhibit 8).

Phase I of this mega-project which commenced in 2005 and was completed in 2010 includes a 93,000 m² retail complex, a 1,000-room hotel, a 68-story trade centre, and 2,360 homes. As an incentive to its developers, the Korean Government agreed to construct a 10-km, 6-lane bridge from New Songdo City directly to Incheon International Airport and provide other infrastructure including utilities. The private sector was responsible for all commercial and residential facilities.

From the start of Air City on airport property to the development of New Songdo City 12 km away, the Korean Government is actively soliciting private-sector participation and foreign investment. Tax holidays and other generous financial incentives along with the provision of extensive infrastructure throughout the greater Incheon airport region have catalysed considerably more private-sector development throughout this expansive South Korean aerotropolis.



The Case of Liverpool

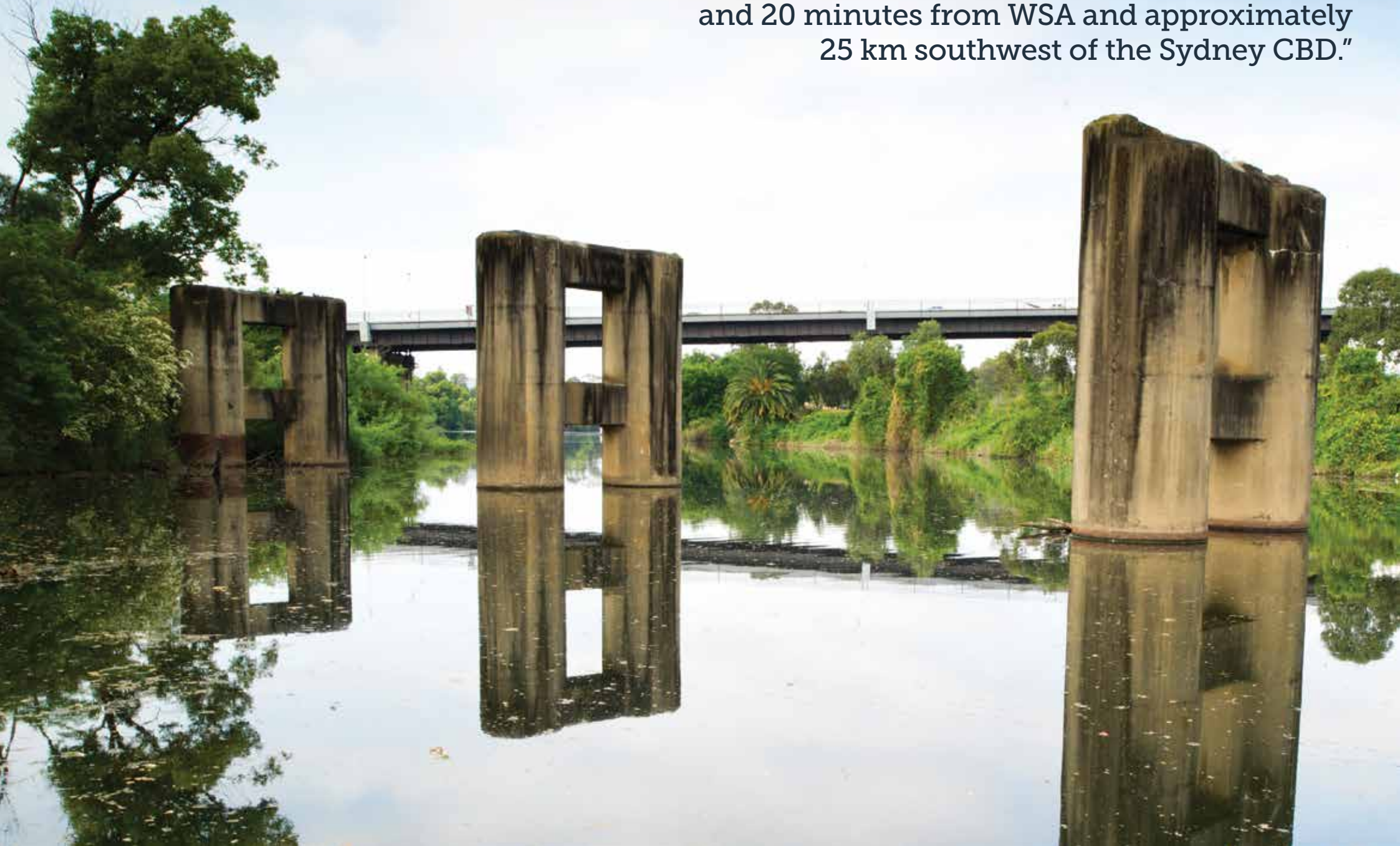
Considering the above three aerotropolis case studies and others, Liverpool is very well-situated to become a significant airport edge city. WSA falls within the greater 304.5 km² Liverpool LGA. So does part of the Western Sydney Employment Area, where over 10,000 hectares are reserved for future commerce and industry along with most of the South West Growth Centre, which could house up to 300,000 people by 2040. Other planned industrial zones in the airport area also lie within the Liverpool LGA.

The Liverpool city centre is approximately 20 km and 20 minutes from WSA and approximately 25 km southwest of the Sydney CBD. Its midpoint location strategically places Liverpool in the dual path of westward urban expansion of Sydney and future eastward expansion of the Western Sydney Aerotropolis.

Plans that I have reviewed appear highly promising for the city's economic and demographic transformation. They should create the urban environment that will attract many better-educated workers who will be employed at the airport and its surrounding employment zones. The transformed Liverpool CBD should likewise prove to be an attractive location for many aviation-oriented business services firms that will desire to be in proximity to WSA in the coming decades, but operate in a more urbane setting.

Liverpool's attractiveness as WSA's primary airport edge city and commercial capital for South West Sydney will have mutually beneficial impacts. While the city will support commercial development at, around, and outward from the airport, it will simultaneously benefit from this development.

“The Liverpool city centre is approximately 20 km and 20 minutes from WSA and approximately 25 km southwest of the Sydney CBD.”





“The City holds the combined location, economic, and social environment advantages, that should make it a magnet administrative, professional, and other higher-end white-collar functions...”

It is therefore my judgment that it would be unwise for Liverpool's municipal leaders to attempt to preclude or restrict in any way commercial and industrial development on and around WSA. Aerotropolis development tends not to be a zero-sum game. There may be instances where desired firms may choose one of these airport-area locations over Liverpool City. For the most part, however, airport and airport-area commercial development will be highly reinforcing of Liverpool City.

The City holds the combined location, economic, and social environment advantages, that should make it a magnet for administrative, professional, and other higher-end white-collar functions as well as the R&D and related knowledge-based firms supporting aerotropolis industrial development. The executive, mayor and other municipal leaders should remain at the forefront promoting the airport and overall Western Sydney Aerotropolis development.

In the past, some planners, academics, and Liverpool City Council officials lamented that the response from the development industry to opportunities to invest in Liverpool City had been underwhelming. The reason for this lag was that an underlying economic engine has not been in place. With WSA and its surrounding aerotropolis, of which Liverpool will play an instrumental commercial and residential role, the municipality will finally have that economic engine. Liverpool City Council is now afforded the opportunity to capitalise on it in a manner that airport edge cities described in the above case studies have.

Since a successful airport edge city requires a profitable airport that can continue to grow, commercial development of all types on the airport property will help make it a more successful engine for Liverpool development. A good lesson here is Amsterdam Zuidas and Schiphol

Airport where over fifteen regional headquarters (including the European headquarters of Microsoft) are on Schiphol property. Zuidas has not suffered in attracting corporate headquarters and other white collar functions. And, it has further prospered by providing the residences for many executives and professionals employed in corporate functions at Schiphol.

More than 50% of the Schiphol Group's profits come from airport-based commercial real estate and Schiphol's commercial activities. Such commercial profits at WSA will likely be necessary to attract a private-sector airport operator to invest in, manage, and grow WSA, thereby substantially benefitting Liverpool and the entire Western Sydney region.

In the following section, I build on the above to discuss opportunities and challenges for a future Western Sydney Aerotropolis and for potential investors/operators to develop a viable new airport at Badgerys Creek to drive it.



Credibility and Viability of a Western Sydney Aerotropolis and the New Airport (WSA)

My assessment of the substantial number of studies that have been conducted on WSA, Western Sydney, and the entire Sydney metropolitan region lead me to conclude that driven by a robust WSA, Western Sydney possesses the fundamental ingredients to become a successful aerotropolis.

Western Sydney is the fastest growing part of the Sydney metropolitan area with its 2-million population base expected to grow to 3 million by the mid-2030s. The region already represents the third largest economy in Australia; if it were a single urban entity, it would be Australia's fourth largest city by population. A marked portion of expected growth will be in relatively close proximity to Badgerys Creek, with the South West Sydney subregion's population (led by the Liverpool LGA) forecast to double from 439,600 in 2010 to 874,800 in 2036. Should the major employment areas adjoining WSA develop as planned, long-term job growth will be immense as well.

Substantial open land targeted for development at, around, and outward from WSA is a special asset that can facilitate such growth. Much of this land is protected for aerotropolis-type development. A world-class roads package is in place to tie major proposed developments together and further catalyse a Western Sydney Aerotropolis.

The region's growing labour force is increasingly multilingual, offering advantages to internationally oriented firms choosing to locate in Western Sydney. Multilingual workers can likewise serve the region's emerging tourist sector. In 2012, 40,000 international tourists spent at least one night in Western Sydney along with 48,000 domestic tourists. Mainland Chinese represented the most rapidly increasing tourist component.

In terms of local aviation demand, Western Sydney generates one fourth of the total air passengers for the entire Sydney region. Surveys show that business travel is the top reason for Western Sydney residents' air travel. It is estimated that local demand, alone, could contribute an additional 3.4 million trips at WSA by 2035 and 6 million by 2060.

Available land, ample labour, population growth, and good surface transportation are critical factors for successful aerotropolis development in addition to a quality commercial airport. With WSA and its upgraded road package, Western Sydney is well-positioned to offer all of these.

There are challenges that must be met, however, for a successful Western Sydney Aerotropolis to form and grow. At present, there are few aviation-oriented industries in Western Sydney; most residents who are employed by them commute to Central Sydney. The Badgerys Creek site is approximately up to 50 km by current roadways, making it an hour to an hour-and-a-half drive (in peak hours) to and from Sydney's CBD. Under these conditions, WSA will not likely attract many travellers from the air travel intensive zones in Central Sydney. It will also make interline cargo and passenger transfers between aircraft at WSA and KSA inconvenient and costly time-wise.

In my view, two closely related overarching issues are paramount when it comes to the credibility and viability of a Western Sydney Aerotropolis and WSA. First, will the airport as proposed be a strong enough engine to power a Western Sydney Aerotropolis? Second, will the private-sector step up and invest in WSA to make it a reality?

“Well-planned surface-to-air logistics infrastructure can also catalyse growth of NSW’s higher-value agriculture, high-tech, and advanced manufacturing sectors...”

Answers to both depend, in large part, on WSA’s air routes which rely on underlying passenger and cargo demand to support them. For an aerotropolis engine to operate at full throttle, an airport should have extensive domestic and international air services.

Since airlines serve markets, not airports, attracting the national and international air service necessary to power an aerotropolis will not be easy given that Western Sydney growth is forecasted to generate only an additional 3.4 million passengers annually by 2035, rising to 6 million by 2060. WSA will therefore need to expand its catchment area substantially beyond Western Sydney, including capturing considerable passengers and cargo from Central Sydney as demand continues to grow there.

This challenge has further implications for the financial viability of securing private-sector investment for WSA, as the airport is currently envisioned. The Australian Government has been clear that WSA would be a secondary airport and not replace KSA whose passenger growth will be allowed within existing parameters.

My experience with greenfield secondary airports elsewhere suggests that passengers and air cargo service providers tend to underutilise new peripheral airports no matter how modern they are when existing hub airports much closer to downtown/CBDs continue to operate and grow. This is a primary reason why governments throughout Asia-Pacific and elsewhere have typically closed their existing hub airports nearer the city centre (as was the case in Hong Kong, Hyderabad, Kuala Lumpur, and Denver) or severely restricted air service at the older city airport (as was done in Bangkok, Shanghai, Seoul, and Dallas-Ft. Worth) at the time the new airport was opened.

Longer-term passenger growth forecasts for the Sydney region far exceed KSA’s capacity to meet them. The Government’s 2012 Joint Study on Aviation in the Sydney Region found that KSA would be at full capacity by 2030 and that by 2060, 54 million passengers in the Sydney region would not be accommodated unless a new airport were built. Although KSA’s private-sector operator (Sydney Airport) disputes the Joint Study’s date at which KSA’s capacity will be exceeded, it does not dispute that KSA will fall considerably short in meeting the region’s long-term aviation demand.

This provides a strong rationale for moving ahead with WSA. Two metropolitan airports can operate successfully if the demand justifies both, as current Sydney region-wide passenger forecasts suggest it would. The important need, though, is that WSA effectively taps and serves a significant portion of forecasted region-wide passenger growth. Again, this is where surface transportation infrastructure becomes key, applying the aerotropolis metrics of time-cost access, rather than distance.

Fast and efficient metropolitan-wide access must be developed between WSA and Sydney and other major urban/employment centres in the broader metropolitan region that reduces airport access time to no more than 45 minutes to and from these nodes, even in peak traffic periods. Thus, along with the current \$3.5 billion roads package being provided by the Federal and State Governments, plans should move forward with associated funding to provide express rail service and express motorway infrastructure from WSA to the Sydney CBD, KSA, and other urban centres in the greater Sydney region.

Providing such access would extend the benefits of WSA to Sydney and other parts of the broader region. It would likewise provide more confidence to potential WSA investors that passenger and cargo demand at the airport would be sufficient to justify their taking the investment risk. Such risk, typically known as “demand risk,” tends to be especially high at new greenfield airports when, as noted, the dominant metropolitan hub airport is still expanding.

6 Department of Infrastructure and Regional Development (2014) *The benefits of an airport at Badgerys Creek*

With the Government's expectation that WSA will be funded and operated by the private sector, investment by Sydney Airport (which holds rights of first refusal) or any other private-sector entity would not be likely unless demand risk is shared by the Government. This view was corroborated by interviews and focus groups conducted by Pricewaterhouse Coopers (PwC) with investment analysts regarding the potential for private-sector funding of WSA⁷.

PwC therefore proposed two funding instrument options:

1. BOT (Build-Operate-Transfer) where government would build and operate WSA, then privatise it once its financial viability has been established.
2. PPA (Power Purchase Agreement) where government would pay for airport construction up-front and then would recover the cost through future charges to the private sector airport operator.

Let me suggest two further options:

3. PPP (Public Private Partnership) where the government and a private sector operator would share all costs and returns in an agreed-upon manner.
4. JV (Joint Venture) where the airport would be funded and operated through a consortium of private sector entities, including potential foreign investors, possibly led by Sydney Airport.

Even in the private-sector joint venture option, I would anticipate that government would play an important role, if only to reduce WSA's demand risk by helping fund high-speed airport surface connectivity to Central Sydney or working with Sydney Airport to redirect KSA air traffic

to WSA earlier than would organically occur through KSA's capacity limit being exceeded. The government might also subsidise relocation costs of airlines shifting service from KSA to WSA in its startup years since first-mover airlines will likely be accruing substantially greater risk.

Airports, even those privately managed, are "public goods," generating benefits well beyond the airport and its operators. In the US, for example, a 2013 impact study of San Francisco International Airport (SFO) estimated that the airport's economic footprint in the region represented US \$55.8 billion in business revenues, US \$19.6 billion in worker wages and salaries, and 288,000 jobs. State and local tax revenues generated by SFO were estimated to be US \$2.5 billion in 2012⁸. A similar study of the Sydney region found that KSA generated \$27 billion in metropolitan-wide business revenues and 283,700 jobs. KSA accounts for 6% of the gross state product of NSW⁹.

It is important to point out that the economic benefits of aerotropolis development are broadly inclusive. At least as many jobs are generated for those with lesser education as for those with higher education. Such inclusive benefits could be instrumental in reducing Western Sydney's high rate of youth unemployment and providing additional opportunities for those at all rungs of the socioeconomic ladder.

With a fully functioning WSA that is profitable and growing, widespread economic, social, and community benefits can be realised in the airport region. At the same time, the entire Sydney basin's competitive edge is sharpened, helping it become a more prosperous global city region.

I now turn to a set of recommendations and actions that will contribute to such outcomes.

⁷ PwC (2013). *Examining viability factors for a supplementary airport in the Sydney region: Airline and investor perspectives*

⁸ Economic Development Research Group, Inc. (2013). *2013 Economic Impact Study of San Francisco International Airport*. Retrieved August 06, 2014, from <http://media.flysfo.com.s3.amazonaws.com/default/downloads/reports/SFOEconomicImpactReport2013.pdf>

⁹ Deloitte Access Economics (2013). *The economic value of Sydney Airport*.

↑ Gate A19
← Gate A18
Gates A20-23 →



Recommendations and Action Steps

Many recommendations have been put forth in prior documents on WSA, Liverpool, Western Sydney, and the greater Sydney region. Following the themes of this report, I make a smaller set of recommendations and action steps that I believe will improve prospects of the new airport at Badgerys Creek and contribute to a more successful Western Sydney Aerotropolis. They range from general to more specific.

Building a Viable Western Sydney Airport

- 1** The new airport at Badgerys Creek (WSA) is not an option, but a necessity if the greater Sydney region is to meet its long-term aviation demand and remain globally competitive. Governments at all levels must continue to work diligently with each other and with the private sector to make this new commercial airport a reality by the mid-2020s.
- 2** Australian officials must realise that the ongoing operation and growth of Sydney's Kingsford-Smith Airport (KSA) will make predicting passenger and cargo demand at WSA extremely difficult, creating high demand risk. Since high demand risk considerably lowers private-sector investor interest, concerted efforts must be made to lower this risk. Otherwise a private-sector investor may not step forward to develop and operate WSA.
- 3** To reduce demand risk, officials can pursue a number of avenues. These might include, among others, a) extending the effective catchment area of WSA by lowering time-cost access to Central Sydney, Parramatta, and other more distant major metropolitan nodes via express rail service and express motorways (some of these might be provided by the private sector); b) working with airlines and Sydney Airport to relocate airline services to WSA prior to KSA's capacity being

reached; and c) subsidising the relocation cost of first-mover airlines to WSA during the airport's initial years of operation.

- 4** At modern airports around the world, commercial revenues represent a growing percentage of total airport revenues, often exceeding 50%. By establishing favourable conditions for commercial development on WSA property, the Government is more likely to attract a private-sector entity to invest in constructing and operating WSA.
- 5** Without the Government's direct and indirect investment, the financial viability of a private-sector BOO (build, own, operate) scheme will continue to be questioned. Private-sector entities tend to be much more risk-averse than government when it comes to infrastructure investment in absence of cost subsidies or revenue guarantees. New greenfield airports on metropolitan peripheries often take many years (sometimes decades) to generate full returns on initial investment. This is especially so when the new airport competes with an existing major international hub airport closer to the metropolitan city centre. Therefore, investment of some type by the Government in the airport's construction will probably be necessary. As described previously, this may include a build-operate-transfer scheme, power purchase agreement, some form of public-private partnership, or possibly a zero-interest long-term construction loan funded through government bonds.
- 6** By cornerstoning and driving a Western Sydney aerotropolis, WSA will likely generate major benefits beyond the airport and the airport operators in the form of added jobs, business revenues, and taxes. These contributions have been found to total in the tens of billions of dollars elsewhere. Government needs to consider such external benefits when assessing any financial role it might play in supporting WSA's construction and other start-up costs.

Planning for an Aerotropolis

- 7** A new planning strategy will be required for the Western Sydney Aerotropolis. This planning strategy must cross and integrate the traditional domains of airport planning, urban and regional planning, and business site planning. These planning domains must be treated in a holistic fashion in order for airport region development to be economically efficient, attractive, and socially and environmentally sustainable. Planning strategies must also ensure timely and flexible structures which allow the market to respond to perceived opportunities and drive economic growth. Current planning systems often stifle major development projects due to rigidity and lengthy delays.
- 8** Any future Western Sydney Aerotropolis master plan should be guided by this integrated planning paradigm and by a strategic roadmap which clearly specifies the Aerotropolis's economic logic and business rationale; its infrastructure and facility plan guidelines; and its business plan guidelines, including branding and a "go-to-market" strategy, along with specific action plans.
- 9** It is essential that local government officials view airport and airport-area commercial development as largely reinforcing rather than competitive with their own municipality's commercial development plans. Any effort to control or otherwise limit commercial development at and around WSA should be avoided.
- 10** Liverpool and other Western Sydney LGAs have focused to date on improving the speed of connectivity to Central Sydney. It is recommended that these LGAs now also focus on improving speed of connectivity to WSA and its surrounding employment areas. WSA and these employment areas will likely be the catalysts and primary engines of outlying municipality development in future decades along the lines of the airport edge city examples I have provided.

- 11** It is recommended that a Western Sydney Aerotropolis steering committee be constituted made up of officials of the outlying LGAs, the NSW Government and the private sector. The steering committee would convene periodic working sessions with LGA officials and planners throughout a defined airport region to inform them better about the nature of airport-linked development and explore how their specific jurisdictions might complement and leverage this new form of development. A bigger-picture view of Western Sydney Aerotropolis development along with their municipality's role in its evolution could reduce local jurisdictional competition for entering businesses, facilitate joint marketing to attract business investment, and lead to coordinated actions to address infrastructure and environmental challenges, while realising more beneficial commercial real estate development for all.
- 12** Western Sydney municipal officials in partnership with the NSW Business Chamber should consider branding the Western Sydney Aerotropolis. Such branding could be instrumental in creating "buzz" in marketing to future investors, developers, tenants, and users of WSA and outlying LGAs. This would also provide an excellent "placemaking" framework for WSA, its surrounding employment areas, and the LGAs to come together under the Western Sydney Aerotropolis brand umbrella contributing to mutually beneficial promotion and cooperative development actions.



NSW Business Chamber

Tracing our heritage back to 1825, NSW Business Chamber's mission is to create a better Australia by helping businesses maximise their potential. The Chamber is a passionate advocate for business in the public arena: whether standing up to government and decision makers when business interests are neglected, or working together to create positive change.

On a one-to-one basis, the Chamber helps all businesses from small enterprises to large corporations. Our commercial services division, Australian Business Solutions Group (ABSG), delivers a range of business services to both member and non-member clients throughout Australia, with the operating surplus going back to supporting Chamber initiatives. In all, we believe it's important for Australia's business community to succeed, because prosperity creates new jobs, social wealth, and better communities in which to live.

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