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This is the author version published as:

Stevens, Nicholas J. (2010) *Towards compatible and integrated airport and regional land use planning in Australia*. In: 14th Air Transport Research Society (ATRS) World Conference, 6 - 10 July 2010, Faculdade de Engenharia da Universidade do Porto, Portugal.

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TOWARDS COMPATIBLE AND INTEGRATED AIRPORT AND REGIONAL LAND USE PLANNING IN AUSTRALIA

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ABSTRACT

Over the past decade privatised capital city airports in Australia have planned developed a range of non aviation commercial and retail land uses on airport land. Many surrounding municipalities consider this development in conflict with existing regional land use planning. Conversely airport operators are alarmed at continued urban consolidation and encroachment of incompatible regional development. Land use planning within and surrounding Australian capital city airports does not support compatible and integrated land use. It is currently a fragmented process due to: 1) current legislative and policy frameworks; 2) competing stakeholder priorities and interests; and 3) inadequate coordination and disjointed decision-making. This paper will examine privatised Australian airport development and consider three case studies to detail the context of airport and regional land use planning. A series of stakeholder workshops have served to inform the procedural dynamics and relationships between airport and regional decision-making. This exploratory research will assist in informing the knowledge gaps between aviation, airport development and broader urban land use policy. This paper will provide recommendations to enhance approaches to land use planning for airports and adjacent metropolitan regions in Australia and overseas.

KEYWORDS Australia, airport privatisation, partnerships, cooperation; airport and regional land use compatibility.

1. Introduction

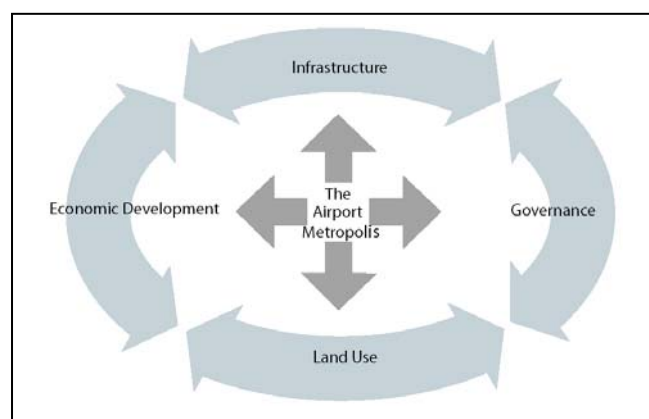
Australian airports have emerged as important sub-regional activity centres underpinned by various privatisation and commercial strategies. In the process, airports have shifted from 'public good' transport interchange nodes to profit oriented commercial ventures where non-aeronautical revenue has become a major part of airport business. Airport and regional

stakeholders are challenged by divergent legislative frameworks limiting mutual and cooperative land use planning. Australian airport and regional land use planning is occurring in isolation, resulting in actual and potential land use conflict and lost opportunity for collaborative and value adding development.

Cooperative airport and regional development is inhibited under the airport ownership structure in Australia where local and state government control of on-airport development is limited to consultative processes, and no mechanism exists for airport operator input into regional development. Local and municipal governments consider airport commercial and retail development has the potential to impact on the viability of urban centre retailing through the diversion of expenditure, often away from city planned and intended centres of employment and commerce (FCA 2005). Airport operators are similarly alarmed by local land use planning for consolidated residential development under flight paths and high-rise airspace interference. The *Airports Act* 1996 allows limited provisions for either stakeholder to endorse, influence or veto land use planning decisions of the other.

The airport and its surrounding municipal region, where much of the land use discourse is occurring, has been conceptualised as the airport metropolis. The use of descriptive terms such as airport metropolis, airport city, and indeed the aerotropolis, are intended to capture and illustrate the growth of aeronautical and non-aeronautical development occurring at, and surrounding modern airports worldwide (Stevens et al., 2010). These urban phenomena represent the strategic and integrated expansion of industrial, commercial and retail facilities with the intention of servicing and supporting airport users and the regional community, delivering an engine for regional and national economic growth (Conway 1993; Blanton 2004; Kasarda 1996; Güller and Güller 2003). This paper builds upon the clarity of the 'airport metropolis' conceptual framework presented by Stevens et al. (2010) Figure 1.

Figure 1 the airport metropolis conceptual framework



Within the Australian airport metropolis four interdependent and mutually reliant interfaces are recognised – land use planning, governance arrangements, economic development and infrastructure (Ibid).

This paper will provide an overview of the structure of land use planning controls for airports, as well as for local and state government. Drawing on a case study approach it focuses on a series of airport and regional land use planning decision maker workshops undertaken in 2008. The outcomes of this research effort are then presented providing insight into airport and regional land use planning in consideration of four interdependent interface areas - governance arrangements, economic development, environment and infrastructure. The paper will then highlight themes which have emerged from the resultant stakeholder perceptions, disputations, shared and conflicting ideas. It will also detail the evidenced continuing fragmentation of airport and regional land use planning; and the expectations of future detailed analyses.

2. Background:

The source of many complaints associated with Australian airport operation may be attributed to poor or inadequate land use planning by past (and present) government stakeholders and airport operators (Freestone & Baker, 2010). Compatible and coordinated land use is crucial to the discussion of airport and regional planning. While this fact is well documented, its effective integration is exceedingly difficult to establish (Blanton 2004; DoT 2002). Airport and regional compatible land use planning is further complicated under the privatized airport ownership structure in Australia where local and state government input into on-airport development is limited to consultative processes and at the same time there are few mechanisms for airport operator input into regional development.

Australian airport privatisation

Twenty – two Australian airports, operated by the Federal Airports Corporation (FAC) were to put to tender in a two phase process beginning in 1996. They have been leased individually on 50-year terms with an option for a further 49 years. The phase one sales included Melbourne, Brisbane and Perth airports and were announced in May 1997. The Australian Government had anticipated a return of \$AUD2.22 billion, however consequently netted \$AUD3.36 billion. In phase two sales a further 15 FAC airports were offered to tender,

consequently netting the government a further \$AUD740.5 million from nine different consortia, and were announced in March 1998 (Hooper et al. 2000). The above estimate windfall for the government indicated average price earnings multiple of 17.5 compared to multiples of 5 – 10 in sales of airports overseas. Hooper et al. (2000) considered that there were two main reasons that the price earnings ratios were so high for all the Australian airports, despite the Asian economic crisis:

- There are limited opportunities to purchase international airports, particularly in the Asia Pacific region and particularly with such a degree of autonomy and company control; and
- Each of the airports has a significant degree of monopoly power, as all the airports are some distance from each other and do not generally compete.

There was, and still is, an expectation from the winning consortia of development potential at many of the airports, and the freedom to utilise this potential (Freestone et al. 2006). Under the terms of acquisition from the Commonwealth, the airport operators purchased a wide range of development rights with no restriction on land uses (other than compliance with the *Airports Act 1996*). In part these rights were designed to protect the airports from a down turn in the aviation sector (CAG 2005). In reality the sales team for the government marketed the investment potential and opportunity for revenue from property development, car parking and commercial initiatives (Freestone et al. 2006). It is this potential, now being realised in the form of commercial and retail development, which is currently the cause of much conflict with local and state government stakeholders.

Sydney's Kingsford Smith airport was withheld from both phases of sales due to unresolved noise issues and the ongoing debate about the establishment of a second Sydney airport at Badgerry's Creek. In 1998 Sydney Airport Corporation, a state owned entity was established to run the airport, and when plans for the second airport were scrapped it would appear the airport would be privatised. Events of 2001 such as the World Trade Centre attacks and the collapse of Ansett Airlines (an Australian domestic carrier), again delayed the sale of the airport until June 2002, when a consortium headed by Macquarie Airports Group bought it for \$5.6 billion, more than the combined total for all the other airports (Hooper et al. 2000).

Non aviation commercial development

Airport privatisation was primarily an opportunity to unburden the nation from public sector funding of airport development. It has resulted in airport operators wanting highest returns on their investment, and they have been quick to outline expectations for the capitalisation of their land assets in the legislatively required master planning process. Airport corporations recognise that they cannot survive by landing planes, and need to diversify their commercial interests as means of ensuring profitability (Stevens, 2006).

In many models of 'airport metropolis' development (Kasarda, 1991; Conway, 1993; Blanton, 2004) landside developments are more often a product of the function of the airport, seeking to assist and encourage the aeronautical function of the airport. This is not always the case in the Australian context, where many land side non aeronautical commercial and retail developments are drawing on a regional catchment of new consumers for the airport.

In Australia, the development of business and technology parks and retail complexes is a preferred commercial strategy at airports where suitable land assets exist, and where landside access infrastructure will allow such development. Although it may be recognised that even without accounting for accessibility, a growing number of regionally focussed airport retail districts are gaining popularity at Australian airports (SGS, 2003). Such retail development is typified by the provision of hardware stores and 'direct factory outlets' or a range of retail, clothing, electronics, and speciality stores which one would expect to find within regional centres. Some airports are also developing supermarkets, and taverns (hotels), significantly away from, and with limited access to, the aviation function of the airport. A different set of airport and regional operating environments are created when airports draw on regional catchments of non-travelling public to generate an increasing proportion of commercial revenue.

Regional impact on airports

In Australia there are jurisdictional issues related to airport planning. Local and regional land use planning is in the domain of State and Local Governments while operational and other noise controls for aviation can fall under the jurisdiction of either the Australian Federal or State governments. Therefore, land use planning issues do involve all three tiers of Australian government. Land use compatibility near airports is measured mainly in terms of noise. The current land use planning regime is the Australian Noise Exposure Forecast (ANEF) system.

The Civil Aviation Safety Authority (CASA) and Airservices Australia are Australian Government agencies which have powers to govern aviation noise and safety regulations. These bodies essentially determine where aircraft fly in the vicinity of airports and hence which areas are exposed to aircraft noise. CASA establishes the operating rules which determine the location of flight paths into and out of airports. If the construction of a building or structure is approved which penetrates an airport's Obstacle Limitation Surface (OLS) CASA may require restrictions on aircraft movements in the vicinity of the airport to ensure the safety of aviation. Australian local government planning assessment is expected to consider development applications on a case-by-case basis against the ANEF contours and OLS, in addition to any existing state planning policy; however this is not always the case (Southgate, 2003; Stevens et al., 2007; May and Hill, 2006)

In Australia, several states have established aviation state planning policies to assist local government in planning and development near airports. Queensland has the State Planning Policy 1/02, 'Developments in the Vicinity of Certain Airports and Aviation Facilities'. It is intended to guide development in airport regions and relates largely to associated noise and safety issues (QLD 2002 SPP1/02 p3). In Western Australia the Statement of Planning Policy No 5.1 'Land use Planning in the Vicinity of Perth Airport', may be considered to be a more comprehensive document which recognises Perth airport as 'fundamental' to regional development, and acknowledges the need for co-operation.

Because of the division between Commonwealth, State and Local responsibilities, a cooperative approach is needed, in which land use planning agencies at both State and local level work with the airport operator and relevant Commonwealth agencies to achieve a satisfactory outcome for all stakeholders (WAPC 2004 SPP 5.1 p621).

Freestone and Baker (2010) highlight that the overriding goal of this guidance to local government is largely concerned with incompatible development which might adversely affect long term safety and operational efficiency as well as protect the environment of nearby communities through noise mitigation. Beyond noise and safety there has been limited development of more comprehensive regional planning considerations. Investigations into compatible and support industries for the airport, off airport or establishing community visions and expectations for regional developments have been partial at best (Freestone & Baker, 2010). Indeed Australian airport operators are increasingly concerned about continued

attempts by local and state government land use planners to encroach on the fundamental concerns of noise and safety.

National Aviation Policy Review

In April 2008 the Australian Government initiated a National Aviation Policy Review in recognition of the growing uncertainty surrounding the changing role of airports and reciprocity of impacts between airports and their surrounding urban and regional environments. At this time an 'Issues Paper' was released for public comment. This was followed by a 'Green Paper' outlining preliminary proposals (December 2008) and a 'White Paper' with proposed policy reforms (December 2009). The review covered a wide range of issues pertaining to aviation in Australia: safety, security, international aviation, domestic and regional aviation, general aviation, industry skills and productivity, airport infrastructure and noise impacts (Australian Government 2008). Airport and regional land use planning challenges were highlighted within the 'airport infrastructure' section. Freestone and Baker (2010) have undertaken content and frequency analyses of the preliminary proposals for land use planning from the 'Green Paper'. Additionally they have also provided comment on the projected airport planning and development initiatives as contained in the White Paper. It will be of interest to this paper to conclude how such initiatives may address the current fragmentation of airport and regional land use planning.

3. Case study approach

There are an array of generic issues and opportunities which impact airport and regional development in Australia; environmental and social disbenefits of airports; efficiency of transport connections and effective airport management and policy. However, the nature of current governance frameworks is seemingly at the core of the discourse relating to coordinated and cooperative land use in Australia (Walker & Stevens, 2008; Freestone, 2007). There are also contextual issues which require detailed case study investigation if a clearer interpretation of Australian airport and regional development is to be gained. The use of case studies for this research is important when the boundaries between phenomenon and context are not explicitly manifest (Yin 2003). For this research three case study regions have been selected to assist in the understanding of 'in practice' airport and regional land use planning. These airports and their surrounding regions were selected under various criteria, but importantly each presents: variance in their airport and regional administrative regimes; have acknowledged regional land use planning conflict; and capacity for further on airport

non aviation land use development. The case studies are located in Brisbane, Queensland; Adelaide, South Australia; and Canberra, Australian Capital Territory.

Methodology and overview

Within each of the case study regions a stakeholder workshop has been held. The workshops were primarily used to highlight the stakeholder views and differences regarding airport and regional land use. In addition, the workshops provided insight into the current strategies and objectives utilised to undertake planning for airport and regional development. These workshops were attended public and private sector stakeholders identified as primarily responsible for airport and regional land use decision making and development. From a research perspective the purpose of the workshops was fourfold - identify stakeholders; identify the range of views; identify key issues and challenges; and further foster research interaction and relationships with stakeholders. These workshops were conducted as follows: Adelaide, South Australia Stakeholder Workshop, 4th April 2008; Brisbane, Queensland Stakeholder Workshop, 8th August 2008; and Canberra, Australian Capital Territory Stakeholder Workshop, 4th December 2008. Collectively these workshops were attended by over 180 academic, airport industry, business and commerce representatives and government stakeholders

The workshop process

A formulaic workshop and seminar approach was utilised at each of the three research fora (Jolles, 2005). The workshops began by outlining the intentions of the day accompanied by an overview of the current research project. After setting the scene, a number of case study stakeholders presented their views on airport and regional land use development. Breakout sessions were conducted in 4 groups of up to 12 participants. These sessions examined airport and regional land use outcomes, planning and policy relationships considered against three key interface areas – governance; infrastructure and economic development. The fourth group considered land use and ‘environment’ for the evaluation of biophysical and social impacts. In placing land use as the central issue these sessions provided focussed yet varied evaluations of airport and regional land use planning.

The breakout sessions at each workshop were digitally audio recorded and transcribed. This data then underwent thematic analysis. A thematic analysis may be described as a search for themes and is considered fundamental in aiding the description of a phenomenon (Boyatzis

1998). It may be understood as a form of pattern recognition within a data set, where emerging themes become the categories for analyses (Fereday and Muir-Cochrane 2006).

4. Discussion

Workshop outcomes

The results of the workshop series have provided a valuable and rich resource of stakeholder vision, insight and attitude to airport and regional land use planning. The thematic analysis of the workshop data has assisted in the identification of contributing factors to ongoing stakeholder disenchantment. While parts of the land use planning process are considered acceptable by some stakeholders, others would disagree. There are several areas where mutual recognition of problems was identified, but the road to resolution is still unclear when considering public and private stakeholder perspectives on these issues.

The thematic analysis identified that land use planning within and surrounding Australian airports does not support compatible and integrated land use. Three underlying themes emerged each contributing to the fragmentation of airport and regional land use planning:

1. current legislative and policy frameworks;
2. competing stakeholder priorities and interests; and
3. inadequate coordination and disjointed decision-making.

This paper will now detail some of the key shared and conflicting ideas, perceptions and disputations of the stakeholders as they considered the relationship of land use to the governance, economic development, infrastructure and environment interfaces. It will also evidence and highlight a range of issues which contribute to the three themes of fragmentation. This approach will assist in stakeholder interpretation of airport and regional land use planning and serve to inform collaborative approaches by evidencing the views of disparate decision makers across the range of interfaces. The paper will now outline the outcomes for each of the workshop interface analyses in turn

Land use and governance

The issues of governance are fundamental in the consideration of airport and regional land use planning, and in particular the understanding and mitigation present and future 'conflict' between the airport and the region. It must also be acknowledged that stakeholder relationships have been recast in the wake of commercialisation and privatisation of public

infrastructure. There has been a fundamental change in the determination of decision-making which many stakeholders (public, private and community) do not fully recognise or appreciate. The neo-liberal ethic of corporatisation, privatisation and outsourcing has led to diverse and shared decision-making by actors chosen to represent public administration, although in reality without a public service agenda (Peck 2009). Table 1, provides the workshop issues resulting from the analysis of the land use and governance interface and the fragmentary themes to which these issues relate.

Table 1 Land use and governance	Fragmentary themes
Land use and governance arrangements are considered by stakeholders to be a multifaceted and complex issue.	1) legislation and policy 3) coordination & decision-making
On airport arrangements for planning and development, under the Airports Act 1996, have important latent and explicit impacts across the three tiers of Australian government.	1) legislation and policy 2) stakeholder priority and interest
The Australian public and external stakeholders were not privy to the details of the airport privatisation process. This fact continues to raise questions about the transparency and 'deals' done in the maximisation of profit.	2) stakeholder priority and interest 3) coordination & decision-making
The legislative processes which underpinned many of relationships between stakeholders rely on goodwill and this has only recently begun to emerge.	1) legislation and policy
Establishing clear, direct and regular lines of communication across all areas of the airport business and all tiers of government is necessary	2) stakeholder priority and interest 3) coordination & decision-making
Through ongoing dialogue airport and regional stakeholders assume that other parties will better understand and appreciate their respective development priorities.	2) stakeholder priority and interest 3) coordination & decision-making
Recent planning strategies have seen airport regions continuing to become increasingly populated through urban consolidation strategies.	1) legislation and policy 2) stakeholder priority and interest 3) coordination & decision-making
The ongoing formal and particularly informal relationships need to be nurtured, outside of a statutory consultation processes.	3) coordination & decision-making
Private entities making public interest decisions - what are the consequences of increasingly diverse decision making, privatisation and public private partnerships?	1) legislation and policy 2) stakeholder priority and interest 3) coordination & decision-making
Governance arrangements for airport planning are considered to be difficult to navigate. How much influence therefore should local and state/territory government have on airport activities.	1) legislation and policy 2) stakeholder priority and interest 3) coordination & decision-making

While the fragmentary issues denominated the workshop output there is the emergence of some positive aspects for land use and governance issues. Stakeholders considered that the master planning process undertaken by the airports is becoming more sophisticated and inclusive with regard to the consultation processes. They believe that after more than a

decade some stakeholder relationships are moving from a period of conflict to that of cooperation.

Land use and environment

It is clear that the changing role of airports in Australia, will ultimately involve their continued expansion as both aviation transport hubs and as retail and commercial destinations. Such expansion is associated with an array of environmental externalities, requiring a trade off between expansion and negative externalities for the surrounding region.

When social and environmental factors are included in all consultations and evaluations of airport and regional development, stakeholders can begin to better understand and appreciate both the anticipated and reciprocal positive and negative. It is from a basis such as this that the airport metropolis can strive for continuous improvement in environmental performance. It is stakeholder understanding of the environmental equity relationships for airport and regional land use planning, in parallel to the social and economic equity relationships at the local and global scale, which will determine the changing environmental role of the airport metropolis. Table 2, provides the workshop issues resulting from the analysis of the land use and environment interface and the fragmentary themes to which these issues relate.

Table 2 Land use and environment	Fragmentary themes
Regional stakeholders need to consider airport and regional land use planning as a three dimensional exercise with the universal inclusion of Obstacle Limitation Surface (OLS) and Procedures for Air Navigation Services - Aircraft Operations (PANS-OPS) as overlays within regional strategic documents. However the complexity in effective understanding of these airspace management systems has limited their more detailed application in a regional planning.	1) legislation and policy 2) stakeholder priority and interest 3) coordination & decision-making
A clearer direction and awareness of reciprocal environmental impacts is needed to be included within the strategic planning documentation of all stakeholders, particularly when considering storm water and flood mitigation and noise.	1) legislation and policy 3) coordination & decision-making
State government administered regional planning frameworks which support local government environmental planning may provide the necessary statutory regulation.	1) legislation and policy 3) coordination & decision-making
Further strategic planning considerations, beyond transport infrastructure and land use, are necessary. A collective and agreed understanding of demographic parameters; demographic trends and a range of challenging economic and environmental scenarios is required.	2) stakeholder priority and interest 3) coordination & decision-making
What are the changing needs of the wider community: are they more engaged and interested in airport development? What are the best ways to ensure effective and informed community dialogue across all the issues?	2) stakeholder priority and interest 3) coordination & decision-making
There is a sentiment that the issues concerning jurisdictional and piecemeal environmental decision making are being effectively resolved over time, with the exclusion of noise.	1) legislation and policy 3) coordination & decision-making

The reality of the differing regulatory frameworks for land use and environmental management means it will never be seamless. Could this provide for positives outcomes, rather than consensus?	1) legislation and policy
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There is agreement between all stakeholders that a better metric for measuring and understanding noise impacts is required. While the *Australian Standard AS 2021-1994 Acoustics-Aircraft Noise Intrusion - Building Siting and Construction* provides guidelines for determining building construction to mitigate noise impacts, it relies on the Australian Noise Exposure Forecast (ANEF) system. Stakeholders consider this system as inadequate to be used as regional land use planning tool.

Land use and economic development

The argument against limiting airport development, both commercial and aeronautical, is most often expressed in hundreds of thousands of dollars lost to the regional economy. In this regard it is understandable that airport economic development is unique, and is therefore entitled to particular concessions. However, what is expected from airports is that the development they provide does not solely result in shareholder gains, and is not in economic conflict with local and regional retail and commercial service providers.

One of the greatest challenges to the airport, and the region, is being able to respond to rapidly changing economic circumstances. Sudden and unexpected terror incidents; pandemic and more recently volcanic emissions can affect the economics of airports immediately. It is important that airports and regions base their economic futures on diversity and broaden target markets for long-term gains. Mutually beneficial airport and regional economic development is necessary and must be cooperatively outlined and justified through extensive impact modelling and effective public policy frameworks. All stakeholders and indeed the wider community need to support, recognise and understand the importance of airports and the unique development and economic opportunities they may provide. Table 3, provides the workshop issues resulting from the analysis of the land use and economic development interface and the fragmentary themes to which these issues relate.

Table 3 Land use and economic development	Fragmentary themes
It is considered that there is not a strong wider community understanding of the economic benefits a modern airport imparts to a regional community.	2) stakeholder priority and interest 3) coordination & decision-making
It was recognised that as airports move through multiple master planning iterations the document has moved beyond an economic development document. However	1) legislation and policy

there remains an inability on the part of affected third parties to influence either the airport operator or the Commonwealth on airport development which materially affects them.	2) stakeholder priority and interest 3) coordination & decision-making
On airport non aviation development is considered necessary to 'drought proof' the airport from the unexpected and rapid change in the demand for air travel. It is the nature of that development which is debated by regional stakeholders.	2) stakeholder priority and interest 3) coordination & decision-making
Airports administered under the FAC, prior to privatisation, had considerable commercial development strategies which were only partially, if ever implemented. Privatisation brought with it action on commercial development and when implementation began, so did the issues and conflicts.	2) stakeholder priority and interest 3) coordination & decision-making
The more recent recognition of airports as economic development areas within local and state planning has aided their integration into the broader regional fabric. There is however ongoing debate about which other designations an airport may, or should, be entitled to – a transit orientated development; a regional employment centre or a retail and commercial precinct?	1) legislation and policy 2) stakeholder priority and interest 3) coordination & decision-making

It is universally recognised that airports are significant drivers of economic development by means of their aviation function. Additionally stakeholders acknowledge that there is benefit in cooperative land use and economic development planning within the 10 – 15 kilometre radius of the airport metropolis.

Land use and infrastructure

The effective planning and provision of infrastructure, of all kinds, is critical in ensuring the future viability of airport regions. The difficulty of this process is compounded by the long lead times and large budgets associated with many of the necessary projects. Governments are increasingly shifting this risk to the private sector through a variety of public private partnerships. Care is needed in shifting this decision-making, to ensure investment is prioritised for community benefit and the commercialisation of access is limited. Table 4, provides the workshop issues resulting from the analysis of the land use and infrastructure interface and the fragmentary themes to which these issues relate.

Table 4 Land use and infrastructure	Fragmentary themes
Regional connections with infrastructure at the airport interface are critical, how they are forecast, managed and financed is central too much of the debate.	1) legislation and policy 2) stakeholder priority and interest 3) coordination & decision-making
Airport and regional stakeholders disagree if the best fit for the airport is to develop as a multi modal logistics centres - in balance with the external impacts on infrastructure and wider community amenity.	2) stakeholder priority and interest 3) coordination & decision-making
The establishment of agreements, coordination and contribution equity regarding infrastructure are considered of very high and high importance by all stakeholders, however from polar positions.	1) legislation and policy 2) stakeholder priority and interest 3) coordination & decision-making
The links between land use approvals and development and the impact on infrastructure demand and provision, both on and off airport, is not currently	1) legislation and policy

effectively sequenced or modelled. A better metric for understanding this critical land use/infrastructure package within an airport metropolis is required.	2) stakeholder priority and interest 3) coordination & decision-making
Regional 'infill' development impacts the efficient use of a range of infrastructures; aviation, transport and utilities. This fact cannot be understated, but is not well understood.	1) legislation and policy 2) stakeholder priority and interest

There should be no presumption by either the airport or the planning authorities as to who is responsible for provision and payment of utilities infrastructure. It is recognised that initiation, implementation and integration of utilities infrastructure needs to be facilitated through appropriate cooperative arrangements, long term planning strategies, effective communication and committed agreements. The need for this level of cooperation is recognised, but not advanced. This process of implementation and jurisdiction coordination requires a governance model that at present does not exist. There is a necessity for mechanisms that can coordinate issues of utilities access, deal with problems across jurisdictions, and identify potential issues and impediments as a way to enhance and promote airport and regional growth.

A comment on the National Aviation Policy Initiatives

The broad initiatives which relate to airport and regional land use planning proposed from the recently released National Aviation Policy White Paper (below), highlight some of the issues identified by this paper. Their translation into specific guidelines is yet to be undertaken, and as Freestone & Baker (2010) note, 'the devil may be in the detail' (p270).

- planning coordination forums for major airports and community consultation committees for all airports
- strengthening the Master Plan process, through providing more transparency and detail in master plans, and folding in transport impact studies and airport environmental strategies
- revising the triggers for Major Development Plans, by replacing the current single \$20 m threshold with a range of other "triggers" for smaller projects deemed to be have a "significant community impact"
- identification of non-compatible land uses which should be prohibited or restricted on airports
- conscription of departmental expert advisors to assist government appraisal of land use planning and integration issues
- closer scrutiny of non-aeronautical development, with requirements for more detailed precinct plans identifying and mitigating impacts on and off-airport
- a national framework to safeguard airports from inappropriate and encroaching development around airport sites
- better managing impact of aircraft noise on local communities, through a multiple stakeholder approach and drawing from better noise data.

Whilst the commitment is there to reinforce the communicative mechanisms for airport and regional dialogue, there appears to be little in the way of mechanisms for genuine planning assistance, or indeed the provision to any party, other than the Commonwealth, significant influence in the planning processes. It appears to lack the promotion or consideration for the

development of regional context driven spatial frameworks - to which many of the White Paper initiatives may be applied. In light of this research the fragmentary themes of 1) current legislative and policy frameworks; 2) competing stakeholder priorities and interests; and 3) inadequate coordination and disjointed decision-making, are yet to be addressed.

5. Conclusion

As evidenced, much of the highlighted airport 'conflict' may be attributed to the legislative and policy arrangements under which airports in Australia are managed. Both the private airport operators and the local and state governments feel that the legislation could go further in representing their respective interests. Herein lies the problem, both want the legislation to determine the appropriate roles of government, all tiers, compared to market forces and the appropriate roles for airports compared to social responsibilities.

Communication and its many forms need to emerge as a key issue for establishing cooperative and compatible airport and regional land use. That is communication as legislation, public policy, strategic planning documents, modelling scenarios, consultation mechanisms and even political power and how influence is exerted. Three main points need to be recognised as fundamental to ensuring effective communications: strategy, resourcing and needs. Strategy refers to sophisticated practices of integration and coordination between all public and private stakeholders. Transparent mechanisms, by which external and internal pressures and timeframes are articulated, recognised and mutually considered. Resourcing is intended to provide for central responsibility and the recovery of information, facilitated cooperatively across airports, all tiers of government and industry. Needs is 'fit for purpose', the communication is for stakeholder needs at a variety of levels from wider community collaboration to data available for research to progressive communications between affected parties.

From this basis, communication may then build to a more sophisticated strategy of progressive integration and coordination fulfilling the variety of roles and purposes of all stakeholders. All tiers of government, airport operators, local and regional business owners, and the community must find an appropriate role within this executive of mutual benefit and best practice. Stakeholders are required to agree how influence and power will be extended in increasingly shared decision making processes. They may then determine equity relationships and cooperative policy priorities outside the ambitions of the individual stakeholder.

6. Future Research

The workshop exercises and their analyses have also provided guidance and direction for future research endeavours. When considering airport and regional land use planning, five higher level themes were also identified. These themes - *relationships; process; outcomes; environment; and airport and regional development* have now provided the framework for current research endeavours. A series of semi structured interviews with individual stakeholders within the case study regions is underway. The interviewees will consist of stakeholders from local, state and federal government and members of the business and wider general community. These interviews will assist in identifying any emerging, higher-level issues regarding uncertainty and/or opportunity that relate to airport and regional land use planning.

ACKNOWLEDGMENTS

7. References:

Australian Government (2008) Towards a National Aviation Policy Statement. Issues paper. Department of Infrastructure, Transport, Regional Development and Local Government, Canberra

Blanton, W. (2004) On the Airfront. *Planning* 70(5) 34-36.

Boyatzis, R. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: Sage.

Capital Airport Group. (CAG) (2005). Canberra International Airport 2005 Master Plan. Australian Capital Territory.

Conway, M. (1993) *Airport Cities 21*. Atlanta: Conway Data.

Department of Transport. (DoT) (2002). State of California. Division of Aeronautics. *California Airport Land Use Planning Handbook*. January. (accessed 27/06/2009) <http://www.dot.ca.gov/hq/planning/aeronaut/htmlfile/landuse.php>

Federal Court of Australia (FCA) (2005). *Westfield Management Ltd v Brisbane Airport Corporation Ltd*. [2005] FCA 32.

Freestone, R., Williams, P., Bowden, A. (2006). Fly Buy Cities: Some planning aspects of airport privatisation in Australia. Forthcoming: *Urban Policy and Research*. 24 (4):491-508

Freestone, R., Baker, D. (2010) Challenges in land use planning around Australian airports *Journal of Air Transport Management* 16, 264-271

Güller, M., Güller, M., (2003). From Airport to Airport City. Litogama, Barcelona.

Hooper, P., Cain, R. and White, S. (2000). The privatisation of Australia's airports. *Transportation Research*, Part E: 36, pp. 181-204.

Jolles, R. (2001) How to run seminars and workshops (2nd Ed). John Wiley & Sons: New York.

Kasarda, JD. (1991a) An industrial/aviation complex for the future. *Urban Land* 16-20.

Kasarda, JD. (1996) Airport-related industrial development. *Urban Land* 54-55.

May, M., Hill, S., (2006) Questioning airport expansion – A case study of Canberra International Airport. *Journal of Transport Geography* 14 437-450.

Peck, J., Theodore, N., Brenner, N. (2009) Neoliberal Urbanism: Models, Moments, Mutations. *SAIS Review* 29 (1), Winter-Spring 2009

Queensland Government. (2002). State Planning Policy 1/02, *Development in the Vicinity of Certain Airports and Aviation Facilities*. SPP1/02. 3rd August

SGS Economics and Planning. (2003). *Economic Impacts of Activity Centre Development at Canberra International Airport*. (Prepared on behalf of the Chief Minister's Department), ACT Government. August.

Southgate, D. (2003) Going Beyond Noise Contours - Local Approaches to Land Use Planning Around Smaller Australian Airports. *Discussion Paper*. Canberra, Department of Transport & Regional Services.

Stevens, N. (2006). City Airports to Airport Cities. *Queensland Planner*. 46 (1) : 37.

Stevens, N., Freestone, R. & Baker, D. (2007) Understanding the Australian Airport Metropolis. In *Proceedings from the State of Australian Cities National Conference (SOAC) Adelaide*.

Stevens, N., Freestone, R., Baker, D. (2010) Airports in their urban settings: towards a conceptual model of interfaces in the Australian context. *Journal of Transport Geography* 18 (2) 276-284

Walker, A., Stevens, N. (2008) *Airport city developments in Australia : land use classification and analyses*. In: 10th TRAIL Congress and Knowledge Market, 14-15 October 2008, Rotterdam, The Netherlands.

Western Australian Government Gazette, (2004). (WAPC) -SPP 5.1 - Western Australian Planning Commission – Statement of Planning Policy No. 5.1 Land Use Planning in the Vicinity of Perth Airport. 24 February 2004.

Yin, R. (2003). *Case Study Research: Design & Methods* 2ed. London: Sage.