

**Submission on 'Building Competitive Cities':  
Reform of the Urban and Infrastructure Planning Systems**

**Submitter**

1. The New Zealand Airports Association (NZ Airports) is the industry association for New Zealand's commercial airports, including the seven international airports. It is a not-for-profit organisation whose members operate 31 airports that span the country and enable the essential air transport links between each region of New Zealand and between New Zealand and the world.
2. NZ Airports does not directly operate airports and we have therefore not commented on a number of issues which rely on experience with the current planning system. In this regard we refer the Ministry to the submissions of individual airports. This submission addresses those parts of the discussion document covering social and economic infrastructure.
3. We appreciate the opportunity to submit on these important issues.
4. The appropriate contact for this matter is:

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**Airport infrastructure is critical to New Zealand**

5. Airport infrastructure is essential to the connectivity of New Zealand with the world, and connections within New Zealand. Air services are the lifeblood of New Zealand tourism and trade, and airports play a major role in developing and strengthening those air services. Airports make a vital contribution to healthy and vibrant communities by connecting businesses, families and friends, and make full participation in many sporting and cultural events possible. The health system is increasingly dependent on patient transfers by air.
6. Airports are tremendously important to the New Zealand economy. Tourism is a major contributor to the New Zealand economy, contributing 9% of gross domestic product (GDP) as well as directly and indirectly employing one in ten New Zealanders. In the year ended

March 2010, visitor expenditure reached \$22.4 billion with international visitor expenditure accounting for \$9.5 billion of this. The money that visitors spend supports thousands of small to medium businesses and many thousands of jobs at all levels of New Zealand society. In addition, imports and exports by air are high value, comprising 21% of the value of imports and 15% of exports.

7. The 'New Horizons' report on New Zealand's aviation sector, prepared for New Zealand Trade & Enterprise, put the revenue arising from the aviation industry at \$9.7 billion, of which the airport sector accounts for almost \$1 billion. NZ Airports' assessment of planned and forecast capital expenditure by airports is \$1 billion.
8. New Zealand airports have a range of ownership structures. Many are owned by local government while Auckland and Wellington Airports have public shareholdings including local government. The Crown has an interest in airports, with minority shareholdings in Christchurch and Invercargill airports, a 50% shareholding in Dunedin and Hawke's Bay airports, and is a joint venture partner in a further six regional airports.
9. A notable feature of planning at airports is the long time horizon of 20 to 50 years. This is further explained in the paper **appended to this submission**<sup>1</sup>. Airports must therefore work closely with local authorities to ensure protection from encroaching urban growth, to protect flight approaches for safety reasons, to manage issues such as noise, and to ensure local authority planning recognises airport operational and development needs including land access to the airport. The necessity for long term planning also means that certainty of land holding is critical for airports, and they will often hold areas of land that will be required for future development without knowing the specifics of the future requirements.

## General

10. Airports are significant infrastructure providers and work under the Resource Management Act (RMA) on a regular basis. As indicated above, the ability of airports to keep abreast of rapid changes in air transport demand, safety and security requirements, and technological change is very important to the New Zealand economy. Continual development and investment is therefore vital to maintain and enhance the economic and social health of each region and the nation. A significant amount of airport development, both on a large and small scale, involves the RMA. Airports are also increasingly involved in general commercial developments in the vicinity of airports, and have a considerable interest in the efficiency of linkages with land transport and other infrastructure. One of the greatest risks to airport infrastructure is the tension with urban encroachment, including the ability to manage noise impacts.

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<sup>1</sup> Extracted from Peter D Smith, *Airport Master Planning*, originally prepared for and submitted by NZ Airports to the Commerce Commission, September 2009.

## **Infrastructure options**

### **National direction**

11. Greater national consistency and direction through the use of national policy statements and national environmental standards has the potential to be beneficial, provided that there is sufficient clarity and a systemic approach to implementation (i.e. they consistently have the intended outcome).
12. Allowing certain aspects of infrastructure construction and operation to be conducted without the need for new approvals, as long as there is compliance with nationally consistent standards (Option 1 (c)) has the potential to be a useful approach for airports e.g. in responding to the ongoing refinement of operational and safety requirements in aviation.
13. Reverse sensitivity (Option 1 (d)) is a classic airport issue, posing a threat to the efficiency and costs of New Zealand's often well-located airport infrastructure. NZ Airports considers that this needs to be addressed more directly than the current proposals suggest, and requires further consideration.
14. Explicit references to infrastructure development in sections 6 and/or 7 of the RMA (Option 3) are merited in view of the role and importance of infrastructure, as illustrated in the introductory section of this submission.

### **Designation mechanisms**

15. Designations and zoning are both useful and important to airports and we consider that the processes should be retained. In particular this allows for future development options to be retained when the details of the requirements are not yet known – this is a common position for airport long term planning. We support a review of the role of designations in facilitating infrastructure development.
16. Proposals (Option 5) to define access to the designation system on the basis of the 'nature of development' are a significant concern because the evolving nature of airports requires a wide interpretation of airport-related development. This may not be the case with other infrastructure, in which case airports would need special consideration. In our view the type of infrastructure (including the need for a long term view) is more relevant than the nature of development at a point in time.
17. Option 6 (two types of requiring authority) raises issues for airports on the basis of the proposed distinction between full and limited requiring authorities being based on public or private benefit, ownership or funding. As mentioned above, airport ownership in New Zealand covers a range and mix of local government, central government and private ownership. Benefits and funding are equally likely to display a mix – indeed innovative funding approaches may become more common in the future. We doubt the distinction between public and private benefits is helpful here, even if it could be meaningfully achieved. Airports are likely to require full requiring authority status in most (though possibly not all) situations, and narrow eligibility as currently described is a matter of considerable concern. The right to acquire land under the Public Works Act, while not necessarily relied upon regularly by airports, remains essential.

18. While airports are an essential part of the national (and international) air transport network it is the airlines, not individual airports, that operate networks. The proposed change (Option 7) to emphasise the role of infrastructure providers therefore makes sense to airports.

### **Approval processes**

19. NZ Airports supports the proposal (Option 9) for concept designations. This is appropriate to the long term planning requirements of airports, where major effects can be considered at a high level in a first stage with subsequent consideration of detail – which is unlikely to be known at the outset in many airport cases - in a second stage. It will be essential that there is clarity around the level of information required at the respective stages of consideration.
20. It is not clear to airports that there will be spatial plans (Option 9 (c)) throughout the country.
21. Option 11 (b) is not appropriate for airports, which need to retain the rights and powers currently available (11 (a)).
22. Short lapse periods such as five years are not appropriate to the circumstances of airports. As pointed out in the attachment to this submission, airports are typically looking 20 to 30 years ahead in relation to overall land requirements and land use options.
23. Airports support streamlined approval processes for nationally significant infrastructure projects, including public participation early in the process (Options 12 and 13).

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**AIRPORT MASTER PLANNING – Extracts from a paper submitted to the Commerce Commission in September 2009**

**1. Purpose of Paper**

In support of the NZ Airport Association's response to the Commerce Commission Discussion Paper on Information Disclosure, this paper explains the use of master plans as best practice in the airport industry.

**2. Author**

The author is a UK based independent consultant airport planner and engineer with over 35 years international experience of airport planning, design and development. His familiarity with New Zealand airports is limited to recent roles for AIAL as an expert witness and subsequently providing advice on planning principles and processes.

**Extracts:**

**4. The Airports Industry: Primary Aviation Functions**

Airports are specialised interchanges between surface and air modes of transport. Airports are the location of a cluster of services by different providers. The airport owner / operator is the 'landlord' providing infrastructure, some facilities and some services to all other service providers as tenants. The primary 'products' of airport services are the safe and efficient transfer of passengers and freight between surface transport and air transport.

Airports are land extensive fixed capital works with wide impacts on surrounding communities and infrastructure. International airports are also national border crossing points and provide services to international airlines. Clearly all such operations require strict rules and standards for the conduct of safe and efficient operations.

Aviation evolved in the 20<sup>th</sup> century and is internationally regulated to ensure standards of safety worldwide. ICAO, which is a United Nations agency founded in 1944, is the primary institution for the regulation of safe and consistent operational procedures. The standards are predominantly concerned with flying safety (approach and departure) and the ground operations of aircraft and the licensing of related skills (rather than terminal buildings or the landside support functions).

All aviation nations are contracting states that abide by ICAO standards. National regulations supplement the ICAO international standards with some detailed interpretation of local practices.

New Zealand is a contracting state and follows ICAO standards and recommended practices for airport planning in all respects that specify the dimensions of airside areas and related off-airport zoning to protect flying operations (as contained in New Zealand's Civil Aviation Act 1990). These standards determine the scale and form of land areas that have to be committed to airside use and the constraints that apply to surrounding land.

ICAO also provides guidance on the required minimum content of airport master plans to show how the (ICAO and National) standards are met. These plans extend well beyond the physical airport boundary to show safeguarded aeronautical surfaces (height restrictions and the marking of

obstacles) the protection of navigation aids and other restrictions on surrounding land use to mitigate adverse safety and noise impacts. Master plans also show long-term land safeguarding for future development of the airport and its future impact on surrounding land use. The regulation of such standards and associated operational practices are invariably by a Civil Aviation Authority established by the government as an independent specialised agency.

Primary airport infrastructure and operations are subject to strict international rules and standards and compliance is regulated by the Civil Aviation Authority. In New Zealand the capability and management systems of the airport operator required to maintain ongoing compliance are confirmed by the CAA prior to initial certification of the operator, then comprehensively reviewed every five years through a recertification process. Day to day operational and asset management practices are subject to regular audits and inspections by the CAA, supplemented by comprehensive reporting and investigation systems.

For passenger and freight handling facilities, the International Air Transport Association ("IATA") represents the airline interests in the way airports are planned. In the IATA 'Airport Development Reference Manual' IATA sets out many aspects of best practice from the airline perspective to ensure cost effective capacity and levels of service. These guidelines provide the baseline reference material for airport facilities planning and their review with the airlines. Airline consultation is generally through an Airport Consultative Committee (ACC) established for each airport and particularly active in the review of draft master plans and the design of major airport infrastructure and facilities.

The above is a simplified summary of the 'primary' aviation functions and agencies. However, airports also encompass a wide range of other activities that support aviation functions with diverse stakeholders.

## **5. Airport Stakeholders**

Airport planning involves a broad community of interests:

- Regulators: ministries & their agencies; transport, civil aviation, defence, environment, finance, commerce etc
- Airport owner / operator / developer
- Lenders: shareholders, institutional investors, loan agencies
- Legal authorities; for planning, title, contracts, tax, employment, social and environmental responsibilities etc
- Community: regional economic, social and environmental impacts on landowners, residents, employment, noise, traffic, effluents, etc
- Airport users and tenants: airlines, air traffic control, fire crash & rescue, ground handling agents, freight forwarders, retailers, caterers, hotel, bus & taxi operators, rental car agencies, etc
- Police, aviation security, and border control agencies: police, customs, immigration, health, agriculture, security, intelligence, etc
- External infrastructure: highway, rail, power, water, communications, fuel, etc.

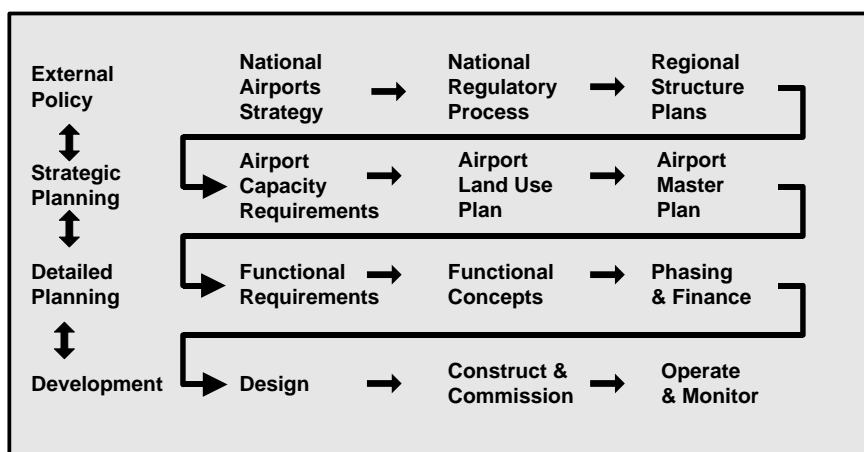
All of these stakeholders contribute to shaping and delivering airport services. The airport owner / operator has different statutory or contractual relationships with each party and different 'information sharing' relationships relating to their particular interests.

These disparate interests are notoriously difficult to co-ordinate and reconcile, and any stakeholder may have the power to impede agreement of plans and the effective implementation of airport development. Airports are therefore subject to planning procedures to resolve these multiple and disparate interests.

## 6. Airport Planning Hierarchy

Airports are major elements of public infrastructure with significant economic, social and environmental impacts. The approval processes for airport development therefore involve a hierarchy of national, regional and local interests, as well as the direct airport stakeholder interests (eg airport authority, airlines, and border control agencies).

**Figure 1: Airport Development Processes:** illustrates a model planning hierarchy of linked processes.



A national airport strategy designates each airport's role and long term contribution to the nation's air transport infrastructure. Such government strategy is either explicit in published transport policy or implicit as a mandate to the airport owner / operator through enabling legislation. The national regulatory processes support the implementation of such strategic policy through laws and supervising agencies.

As a major land use with wide impacts, the airport's strategic planning is integral with regional planning. Regional structure planning helps to secure the airport's long-term role by designating land and access corridors and ensuring the compatibility of surrounding land uses.

Airport strategic planning therefore needs to safeguard ultimate development requirements. Internal land use and development phasing depends on the progressive evolution of the airport operational demands over time.

This is an utopian model. In practice the relations between the processes are imperfect due to the parties' differing perspectives. However, as airports respond to air traffic growth and other development pressures, some form of the above model is a pragmatic necessity. In any region the options for meeting air transport demand growth are limited. The outcome is likely to include the continued development of the existing airport to its capacity limits.

The external policy processes establish the governmental mandate for the airport's social and economic role, regulatory control of the airport operator, and the regional consensus for airport

development. These are managed by elected representatives in accordance with prevailing laws and procedures of public administration.

The airport strategic planning either complies with external policy or seeks change through consultation with national and regional authorities. In general, planning consents reflect the agreement of these elected bodies that the proposed development properly serves public interests.

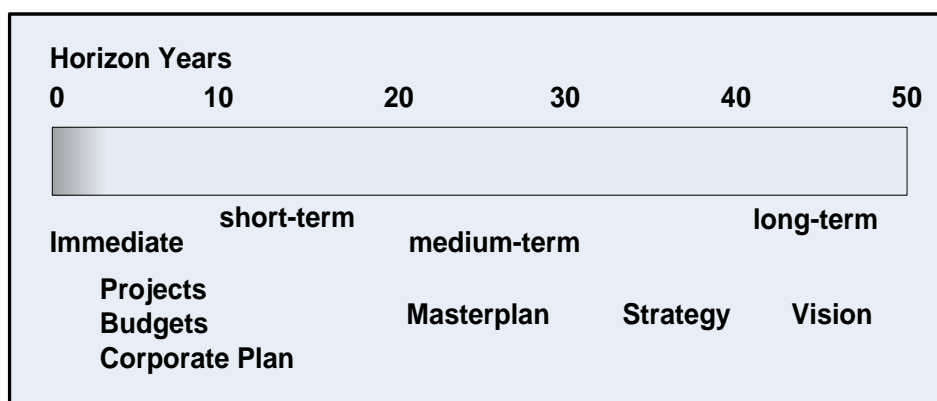
The dialogue between the airport operators and the governmental agencies addresses a range of public interests. In particular, public policy seeks to balance the national / regional social and economic benefits with the fair treatment of those locally impacted by the airport development and operations.

This balance requires that the parties recognise different airport planning horizons for different purposes.

### **7. Airport Planning Horizons**

Airports are long-term public infrastructure investments for past, present and future generations. NZ international airports have a history of over 40 years and will remain a critical regional asset for at least the next 50 years. Planning methods address various timescales for different purposes.

**Figure 2: Airport Planning Horizons** illustrates the time frames of different aspects of airport planning



Immediate and short-term planning is required for the management of airport operations, maintenance and development projects. These take various forms and are part of business as usual for airports. [Unlike utility companies, in the experience of airports, the greatest risk to asset management for airports – is failure to anticipate or plan, rather than a failure to maintain.]

Master planning establishes the medium-term trends which determine the requirements for major capital investments. Such major infrastructure and facilities development planning, approval and implementation generally takes five to ten years. Therefore such capacity development looks two decades ahead to avoid being overtaken by demand growth. Some elements of the new capacity may be phased in where economic increments are feasible.

Strategic planning goes beyond trend forecasts to envision future long-term land-use requirements to safeguard the ultimate airport capacity.

Long-term propositions by infrastructure planners are often subject to public and even institutional scepticism on the basis that no one can predict so far into the future. However, failure to anticipate

that significant changes in requirements will arise creates avoidable constraints and costs within a generation. The airport and regional public authorities are therefore custodians of these substantial public service investments and are obliged to safeguard their future orderly and economic development. The discharge of these responsibilities requires long-term planning for uncertain futures.

Indeed even medium-term plans are subject to wide uncertainties.

These planning horizons are longer than the commercial horizons which are adopted by many businesses (including airlines). However, public infrastructure is necessarily different and airport strategic and master planning has to safeguard the ability to continue to serve the regional air transport needs.

## **8. Forecasting Airport Requirements**

In 50 years civil aviation has transformed from a niche service for senior government officials and elite wealthy citizens to a mass market service used each year by more than half the population of advanced countries. Air freight has changed from a mail service to the carriage of 40% of traded goods by value.

The changes to air travel markets and how they were served made forecasting on the basis of trends very unreliable. Generally, future demand was underestimated and the plans based on those forecasts were overtaken by events. Airport planners realised that "no plan survives contact with reality".

However, as growth in demand overtook built capacity, airports were able to take on-board the developments required to accommodate changes in technology and operations, and the broadening of commercial services. The effective life of some airport facilities can be as short as 10 to 15 years before refurbishment or replacement due to expansion.

In 'Airport Systems Planning, Design & Management' by de Neufville / Odoni, the authors state that:

Dynamic strategic planning ... is traditional master planning adapted to the realities of the airport and aviation industry of the twenty-first century. It recognises future uncertainties and leads to a flexible development strategy that positions airports to minimise risks and take advantage of opportunities.

The forecast is always wrong. Modern planners and managers must face this reality in the era of deregulation and competition. Airlines form alliances, merge, and change their routes and services; passengers and shippers reorient their patterns. These changes make forecasts of levels and types of traffic unreliable. Airport professionals must assume that the future reality will be different from what seems most likely at present.

Due to the dynamic changes inherent in aviation, airport plans cannot be rigidly pre-determined and fixed for the long-term. Airport planning has to chart a long-term course based on reasonable scenarios of future requirements, but remain flexible to accommodate external changes and actual operational characteristics as they arise.

The airport master plan provides stakeholders with a medium and long term view of development strategy.

The forecasting of specific requirements is subject to considerable uncertainties (including 'when' operational demands will exceed capacity). Similarly the capacity of facilities and systems are complex measures relating to acceptable levels of service during busy periods. These are impacted by changing patterns of traffic and changes to the operational use of facilities.

Airport planners test the logic of upper and lower bounds - ie how wrong could we be? This helps the airport management to understand what factors would cause lower or higher values. Some factors will be relatively stable and others found to be volatile or themselves uncertain. Exploring these ranges allows; testing of strategies for best and worst case outcomes, safeguarding of highest likely, and commitment to lowest likely with planned responses to any faster growth.

The decisions on the timing and scale of airport infrastructure and facilities developments therefore require continuous monitoring of market developments and testing of how emerging traffic patterns will impact on existing and planned facilities.

## **9. Demand Patterns, Utilisation and Service Efficiency**

Each air traffic market (city pair) has particular characteristics which affect the aircraft size, frequency, and schedule timing of services. Airport infrastructure and facility capacity requirements are related to the demand in busy / peak hours of aircraft arrivals and departures. The scheduled patterns of traffic vary in any year by season, by day of week and by hour of day.

The mix of markets at each airport determines traffic patterns to be served. For example; a high proportion of tourist traffic will lead to higher summer season traffic levels, and a high proportion of business traffic will result in higher weekday than weekend traffic levels.

However, the critical demands for capacity are in the peak hour or typical busy hours that have to be served regularly. The capacity will be measured to provide a good level of service in busy periods with an adequate level of service in peak hours. These may include tolerance for un-scheduled peaks caused by disruptions.

At airports where traffic is fairly similar across the seasons, days of the week, and throughout the operating day, then utilisation of the capacity will be high (efficient). However, at airports where the traffic patterns are uneven and peaked, the facilities need to cope with the peaks but will be under-utilised for much of the time.

Therefore comparisons between airports utilisation will largely reflect traffic patterns rather than efficiency.

The airport has limited influence over traffic patterns. A congested airport, where peak hour demand exceeds available capacity, may be able to 'manage demand' by use of restrictions or price incentives to shift traffic away from peak periods.

Adding airport capacity tends to be 'lumpy' with relatively low early utilisation. Therefore the timing of development requires a compromise of managed demand and / or lower service standards in peak periods until the growth of demand would justify the new capacity (and costs to the beneficial user airlines and passengers).

A few years of lower service standards in peak hours may be good practice in terms of investment efficiency for the airport, airlines and passengers. Comparisons of level of service between airports,

and even for an airport over time, require interpretation which will not be easily understood by the wider public and may be misused by mischievous parties seeking an alarmist story.

## **10. Airport Investment / Development Agreements**

The masterplan strategies and concepts provide the context of the next stages of development, including the airport land use and the relationship with surrounding communities. The masterplan is stable in these respects and therefore serves these purposes.

For incremental aviation investments (such as the airfield, aircraft aprons and terminals) the scale, timing and form of development are matters for airport operator consultations with the airlines. Where development will impact other on-airport stakeholders (for example; fire crash & rescue, border agencies, into plane fuelling, etc) they are also consulted. These parties have different roles and perspectives, but all understand the industry issues involved. Each party to the consultations examines the operational benefits and commercial impacts on their business planning. These facilities planning consultations refine the development requirements and are the basis for changes to the use of infrastructure and facilities, operational procedures and lease agreements.

Similar considerations apply to landside investments, such as surface access capacity development. The regional highway authority and all on-airport agencies significantly impacted (including airlines) would be part of the facilities planning consultations.

The outcomes of these airport investment / development facilities planning agreements can be reported as annual commentaries on the realisation of the masterplan. The facility planning precedes design, tender and constructions activities and therefore information disclosure would precede implementation. The developments are incorporated in the next masterplan update.

## **11. Conclusions**

Due to the large and lumpy nature of airport investment the greatest risk to asset management for airports, and consequently cost for consumers, is not the risk associated with reduced performance of assets or asset failure, but rather the failure to anticipate or plan for the creation or migration of assets.

This has seen the development of an asset management discipline in the form of airport master plans which are focussed around ensuring:

- that the future regional role for airport services will be served
- demand forecasts and peak hour requirements are understood
- simulated demand and implications for levels of service are understood
- balance is maintained throughout the entire value chain (airspace, airfield, passenger and freight terminals, all ancillary functions, surface access and utilities)
- on-airport stakeholder engagement informs land use and processing requirements
- community stakeholder engagement reconciles off-airport impacts with the regional planning controls, including environmental measures.