

**Submission by NZ Airports Association
On 'Infrastructure: Facts and Issues'**

19 October 2009

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Submission

1. This is the submission from the New Zealand Airports Association ("NZ Airports") on the paper 'Infrastructure: Facts and Issues' published by The Treasury in September 2009.
2. This submission is in addition to any submission made by individual airports.
3. NZ Airports will be pleased to provide any further information required in support of this submission.

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The New Zealand Airports Association (NZ Airports)

4. NZ Airports is the industry association for New Zealand's airports and related businesses and is the authoritative voice of the airport sector in New Zealand. It is a not-for-profit organisation whose 28 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.
5. Our members range widely in size with annual passenger throughputs from a few thousand to 13 million. The full range of airport ownership structures is represented, including privately owned, council-owned, joint ventures between councils and the Crown, airport companies, and public companies. The Association also has 20 non-airport members including consulting and engineering firms, and other aviation-related organisations with a close association to the airport sector.
6. Further information about NZ Airports is available on our web site at www.nzairports.co.nz

Summary

7. NZ Airports has considered the discussion paper published by the National Infrastructure Unit, however, due to the short timeframe for submissions and a delay in our becoming aware of the paper, we are not able to make a comprehensive response and we have not had an opportunity to consult to any great extent with our members.
8. We therefore take the view that this is a preliminary response which we regard as the beginning of a process of greater engagement on our part. For example we feel that the current paper falls short in a number of respects in relation to the airports sector, but we have not been able in the timeframe to put together the information that we feel should be included. Indeed we have probably not identified all the areas where more coverage is merited.
9. We appreciate that the Minister for Infrastructure has indicated that the first draft of the National Infrastructure Plan should be ready in early 2010 and that all the interested parties will be under pressure to make their contributions in this timeframe.
10. NZ Airports looks forward to further constructive engagement with the National Infrastructure Unit as the process to develop the first National Infrastructure Plan continues, and we ask for your confirmation that there will be further opportunities for us to contribute at this formative stage.
11. These are the key areas which appear to us to require further consideration and coverage:
 - An improved description of the current infrastructure and operations
 - The critical linkage between airport infrastructure and the success of the tourism sector
 - The role of airports in a successful World Rugby Cup
 - The contribution of airports to regional and national economic development
 - The risk of regulatory failure (resulting in a lack of essential timely infrastructure investment) as an outcome of current Commerce Commission considerations affecting Christchurch, Wellington and Auckland International Airports
 - Funding difficulties faced by regional airports
 - Airport capacity as a key enabler of airline competition and competitive air fares
 - The air navigation infrastructure and associated issues and risks to the national air transport network
 - The long planning horizons for airports

- The need for airport land uses and activities to be protected for future development options
- Air transport issues as they relate to airports, such as changes in international air transport characteristics (e.g. the rise of low cost carriers), the introduction of new aircraft and technology, hub and spoke issues, and future demand
- The role of airports in border facilitation, e.g. trans-Tasman border streamlining
- Land transport connections to airports, and the need for alignment of plans
- Airport quality of service measures, and the links to infrastructure investment cycles

Introduction

12. New Zealand's major airports are delivering excellent outcomes for the New Zealand economy. They are investing in infrastructure that encourages competitive air services and provides quality facilities at prices representing fair value for money to airlines, shippers and travellers.
13. Access to affordable air travel linking New Zealand both internally and with the rest of the world is critical to our economy, especially our tourism industry, and to the standard of living of all New Zealanders. Airports play a major role in facilitating efficient competition between airlines, which is the most important driver of air travel affordability, by investing in the infrastructure needed for growth and providing access to facilities on terms and conditions that are fair and reasonable. The recent entry of new carriers is due in no small part to the efforts of airports to grow the air travel market.
14. The cost per passenger of using New Zealand's major airports is as low as \$3-5 for regional domestic services, to \$15-21 for international services. These rates compare very favourably with comparable airports in Australia and around the world.
15. NZ Airports' preliminary view is that the purpose of the National Infrastructure Plan is sound, i.e. *to present a high-level view of the state of New Zealand's infrastructure, describe the principles and direction of future investment, improve alignment between national and regional planning, establish greater discipline around infrastructure decisions, and increase public awareness about the role that infrastructure plays in supporting and raising the nation's living standards*¹.
16. However, the value of the Plan will be directly proportional to the accuracy and completeness of its contents and conclusions. We would be very concerned if the coverage of airports in the 'Facts and Issues' paper was not substantially enhanced before the proposed National Infrastructure Plan is completed.
17. We agree that airports must be included as "physical infrastructure of national significance that has a direct impact on productivity and living standards". However we consider that the

¹ Infrastructure: Facts and Issues, paragraph 6

current material describing airports does not fully or accurately represent the sector and its issues, or its relative significance in the National Plan.

Questions on page ii

Base Information

18. There is a striking difference in the discussion document between the coverage of sea ports and the coverage of airports. For example, most of the topics dealt with in relation to shipping and ports - supply chain performance, role in regional development, changes in international patterns and the size of craft, hub and spoke issues, and future demand – are equally relevant to air transport, but not addressed.
19. NZ Airports would be happy to assist in fleshing out these topics in relation to airports.

Missing issues

20. Air navigation infrastructure: There is very little reference in the discussion document to air navigation assets owned and operated by Airways New Zealand. We think this is a significant oversight as the air navigation system is a critical element of the international and national air transport system. No doubt Airways NZ will be able to provide a description of this infrastructure and associated issues.
21. The types of Airways NZ air navigation assets that are located on or near airports, and the levels of service provided by Airways in support of those airports, have an important influence on overall service levels, capacity, and the air transport network. A number of regional airports are concerned about the maintenance and replacement programmes for critical air navigation assets (such as approach lights and runway lights), and associated funding mechanisms and costs. In a worst case scenario, location-specific pricing which incorporates 'catch-up costs' for neglected Airways assets could make some regional airports non-viable for airlines.
22. National air transport network: Related to the above points there are intertwined issues relating to
 - contestable air navigation services at airports and location-specific pricing
 - lack of maintenance or planning for replacement of aging Airways assets
 - illogical and inconsistent responsibility for air navigation assets on airports
 - cost-recovery policies, and
 - safety/regulatory trigger points for the various levels of air navigation serviceswhich together have the potential to significantly affect the regional parts of the air transport network, and hence the overall health and viability of the network over time.
23. NZ Airports and Airways NZ are currently in an early stage of discussions regarding the above issues. An outcome of this process may be a re-thinking of current policy settings and their inter-relationships. We will involve the Ministry of Transport in this process.

24. International borders: Border issues at airports have been highlighted recently by the Prime Ministers of Australia and New Zealand, and a programme of change has been well publicised. There is a strong connection to airport infrastructure in that border agencies and their processing of travellers takes place in spaces provided by airports. Given the importance of trans-Tasman travel and tourism it would be appropriate to outline these issues and the links to demand forecasting and investment.
25. Planning and land-use protection issues: We have not developed our views on these matters yet as we need further input from airports in order to identify and describe the current issues, however we think it is likely that airports will raise a number of issues affecting the future of airport land uses and activities.

Cross-sectoral issues

26. Airports are the link between the air and land modes of transport and land-side access to airports is a significant issue, just as it is for sea ports. Not only is the connection critical in the overall travel experience (for example, Air NZ is understood to have identified “getting to the airport” as the second most negative experience of a customer travelling by air²) but it is an excellent example of the need for alignment of infrastructure planning decisions.
27. We will be happy to assist with a more specific identification of high priority instances of the need for enhanced land transport access to airports.

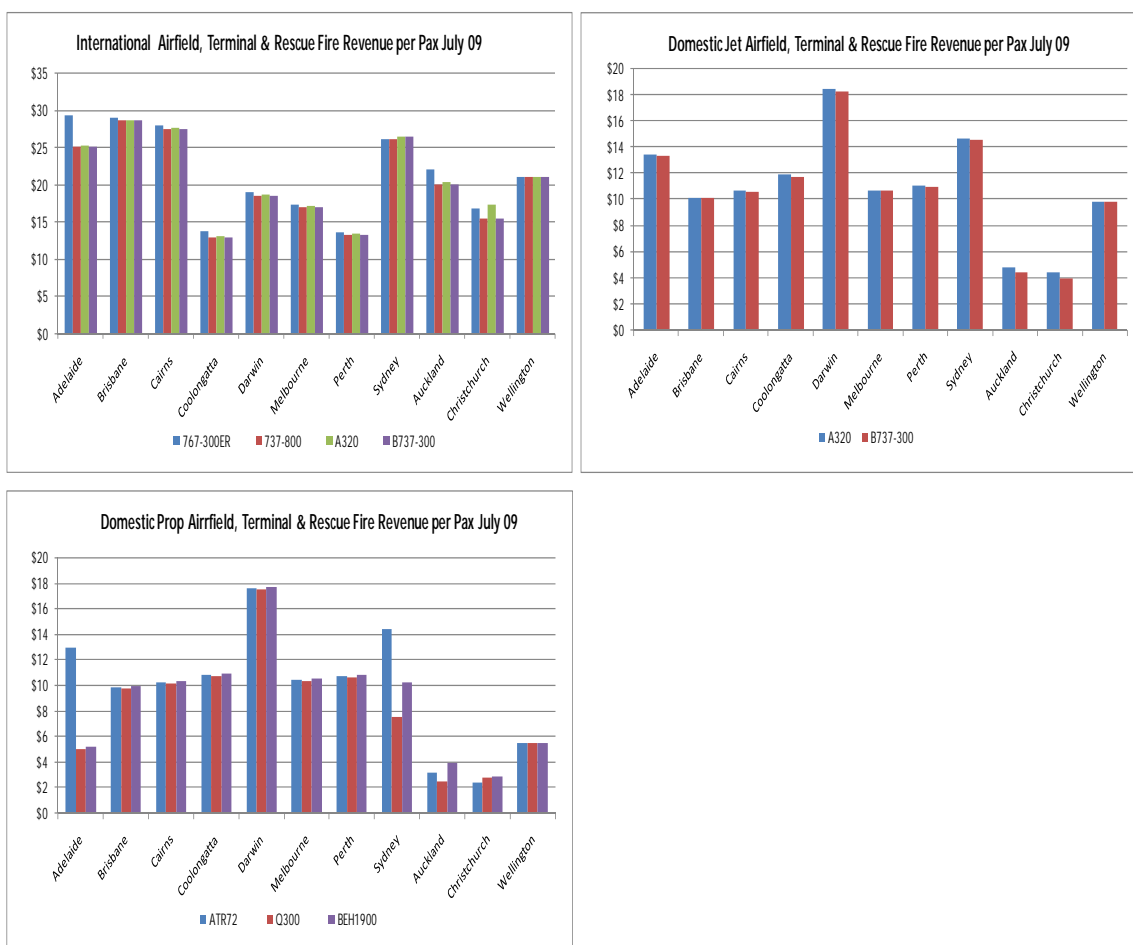
Regulatory reforms

28. The 2008 amendments to the Commerce Act intend that price-setting by the major airports (Auckland, Wellington and Christchurch International Airports) be subject to ‘light handed’ regulation in the form of information disclosure. The Commerce Commission is currently in the process of designing ‘input methodologies’ to support information disclosure, and the details of the information disclosure regime itself. Discussion documents produced by the Commission as part of this process raise concerns in that they appear (at this stage of the process) to be directed towards establishing a heavy handed regulatory framework for airports consistent with future price control through the determination of a ‘Regulatory Asset Base’ and prescriptive methodologies.
29. Excessive, prescriptive regulation has a pervasive impact on investment decisions and in the efficient workings of markets. It is expensive, slows investment, requires the regulator to ‘second guess’ the industry and inhibits commercial relationships as parties seek to ‘game’ the system. At no point has it been demonstrated that more regulation would produce better outcomes for consumers. Airports are concerned that there is a real risk to New Zealand’s airport infrastructure of the opposite occurring – this point has not been adequately made in the discussion paper.
30. The Commission has not made its determinations on input methodologies and information disclosure for airports yet – they will come into effect in mid 2010 unless the timeframe is extended by the Minister of Commerce - and NZ Airports and the individual affected airports

² Air NZ presentation to Border Sector Stakeholders meeting, June 2009

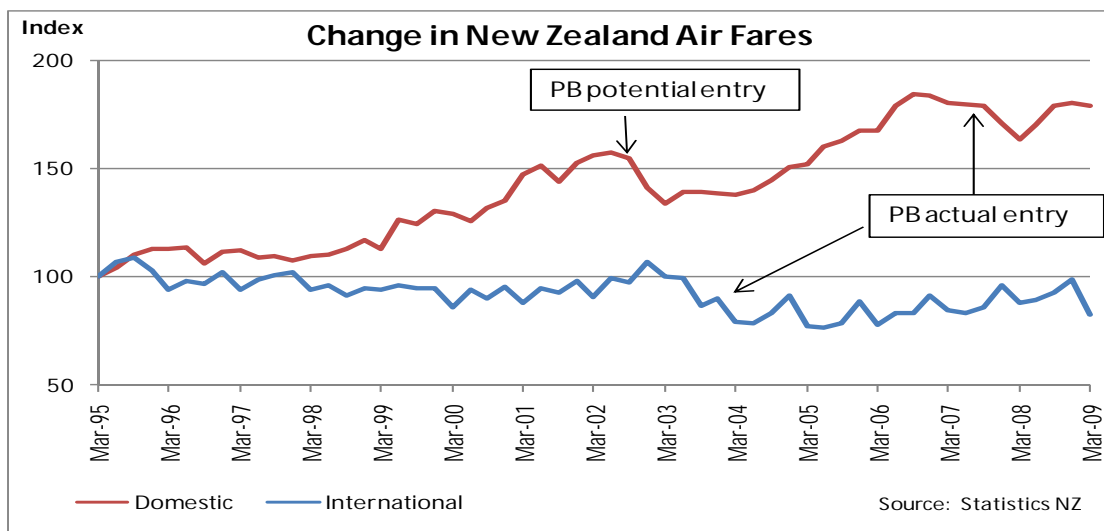
are obliged to commit very significant resources to making submissions to the Commission as the formal process continues. The regulatory uncertainty inherent in this situation is having an impact on airport investment decisions – for example it was a factor in the recent decision by Auckland Airport to defer the development of its Northern runway (see Appendix 1).

31. NZ Airports is asking the Commerce Commission to recognise that the major airports are performing very well in relation to investment, price and quality outcomes. Given this, we believe the Commission should adopt an approach that allows commercial arrangements to be developed between airports and airlines, as is already occurring successfully. In our view the Commission should limit its role to the legislative intention of ensuring that a suite of relevant information is available to provide interested parties with the comfort that the overall financial returns an airport generates from its aeronautical activities are fair and reasonable.
32. Paragraphs 155 and 156 touch on the debate over airport pricing and appropriate levels of investment. For information, NZ Airports has provided the charts below to the Commerce Commission to illustrate the relative international position of NZ airport charges.
33. A comparison of the New Zealand and Australian airport charges can be made based on charging schedules published by each of the airports. The outcome of this analysis is shown below for International operations; domestic jet operations, and domestic turbo-prop operations.



Source: Airport pricing schedules.

34. A review of these comparisons shows that New Zealand airport charges are not excessive when compared to Australian airports. International charges by New Zealand airports are in the middle of the range of charges in Australasia. Charges for domestic jet passengers in New Zealand are below all airports in Australia. Even more evident is the lower charges at New Zealand airports for passengers flying to regional airports.
35. International airport comparisons have also been undertaken by external consultants, Jacobs Consultancy³ using their standard methodology for determining turnaround charges. This is a slightly broader approach than the above Australasian analysis as it includes air navigation charges (i.e. Airways NZ charges) using typical actual aircraft types, and demonstrated again that New Zealand airport charges are not out of step with charges at airports operating in a variety of international jurisdictions.
36. With regard to infrastructure investment it is important to note that incumbent airlines will tend to criticise investments in airport capacity that enable choice and competition between airlines for the benefit of passengers.
37. Long term trends in air fares show a stark contrast between the domestic and international markets. The Department of Statistics most recent information on New Zealand air travel costs represents a continuation of recent trends. The following graph shows the domestic and international air travel indices since March 1995. Over the 14 years the CPI has risen 37%, international air travel costs have fallen 17% while domestic air travel costs have risen 79%. The changes in fares have been reflective of the level of competition in the New Zealand markets during this period.



38. The first significant change in the domestic market occurred in 2002 when it was first anticipated that Pacific Blue would enter the market. Air New Zealand introduced its express fare range and a significant reduction in fares took place. After the threat of Pacific Blue faded domestic fares resumed their upward trend. Pacific Blue actually commenced services in 2007 which prompted a reduction in fares at that point.

³ Jacobs Consultancy, Comparison of Airport Charges at Principal Airports Served by Air New Zealand, March 2009

39. The increased airline competitiveness and slowing increase in air fares has stimulated a significant increase in passengers travelling during this period. This has required, and been supported by, substantial investments by airports in additional and improved facilities.
40. We think that it is important not to simply accept at face value the complaints of airlines regarding alleged over-investment. Airport infrastructure investments are very lumpy (large, and often decades apart at any one location), and necessarily provide runway and terminal capacity for expected growth some time into the future. (See the appended paper on airport master planning).

Aspiration

41. The discussion document asks if there is a service level that New Zealand should aspire to. Passenger surveys indicate that the quality of services currently provided by major New Zealand airports appear to, at the least, be of a similar standard to Australian airports (as the nearest alternative market to consider)⁴. Nevertheless, a process has started that will help to establish appropriate service levels for New Zealand's metropolitan airports.
42. NZ Airports along with the three major airports and the Board of Airline Representatives in New Zealand (BARNZ) have recently completed some work on service quality measures for the airports affected by the current Commerce Commission work on information disclosure. (See Appendix 2). NZ Airports and BARNZ both consider that the joint process which has been undertaken by the airports and airlines has been valuable as it not only has enabled the industry to work together to develop a joint view of what quality measures are considered important by the industry as a whole, it has also allowed a constructive dialogue to occur over what type of information is able to be collected at a reasonable compliance cost, and what information would be too costly or problematic to collect.
43. It is proposed to monitor three types of service quality measures for specified airport companies through information disclosure:

Passenger perception – The quality of services and facilities provided by the airport to passengers will be monitored through surveys measuring passenger satisfaction on matters provided by the airport which contribute to the passenger's experience of identified airport activity facilities.

Reliability of aeronautical services –The reliability of identified airport activity services and facilities provided by the airport will be measured via two means:

- o the withdrawal of material services by the airport

⁴ **June 2009** : Auckland Airport has been ranked as one of the top 10 airports in the world in the 2009 independent Skytrax World Airport awards. The airport was voted the best airport in the Australia Pacific region, and the 10th best in the world. See Skytrax website: <http://www.airlinequality.com/>

February 2008 : Christchurch International Airport Ltd placed fourth for 'Best Airport' in the 5-15 million passengers per year category at the annual Airports Council International (ACI) Airport Service Quality (ASQ) Awards. The ASQ awards are based on the results of nearly 200,000 questionnaires completed by passengers in 2007. The survey captures the passenger's immediate appraisal of 34 airport service factors, from check-in through to departure at the gate.

- o delays to on time departures resulting from withdrawal of identified airport activity services by the airport.

Capacity and utilisation – The capacity of facilities is described at a high level in terms of physical dimensions, processing capacity or technical specifications (as most appropriate for the particular service or facility) augmented by analysis of peak hour utilisation of particular facilities.

44. It is proposed that the three identified airports will trial data collection for the 2008/09 Financial year (to the extent possible) in order to test the processes for data collection, identify any definitional issues which arise in practice and ascertain whether the measures will be useful and likely to drive improved processes, efficiency and investment decisions as well as informing interested persons.

Link to economic growth

45. The Facts and Issues paper does not make the essential links between airlines, airports and tourism. While the strategic significance of sea ports appears to have been recognised, this is far less the case for airports.
46. The New Zealand Institute discussion paper '*So far yet so close*⁵ provides a summary of this critical linkage, and comments on the role of airport (and sea port) infrastructure.

Executive Summary

...New Zealand is the most remote developed country in the world relative to international markets. This physical location means that the efficiency of New Zealand's supply chains – the ways in which New Zealand firms are able to transport their goods and services to offshore markets – is of significant economic importance.

The competitive position of firms is increasingly influenced by the speed, cost, and responsiveness with which they can get goods and services to market. So the success with which New Zealand companies can go global from a New Zealand base will be strongly influenced by the quality of New Zealand's connections with the rest of the world

*... In terms of strengthening New Zealand's air links, there are two actions that should be taken **in addition to continuing to invest in airport infrastructure**. First, promoting inbound tourism should be an ongoing priority. In addition to tourism being a major export category in its own right, tourism flows are the major support for New Zealand's business travel and air cargo capacity.*

Is distance dead?

... Combined with technological progress, advances in transport, particularly air transport, has enabled new types of economic activity to arise. In particular, companies have developed new business models in which the production chain is

⁵ *So far yet so close: Connecting New Zealand to the global economy* New Zealand Institute Discussion Paper 2007/1

fragmented across geography (Economist (2006), Feenstra (1998)). These global production chains are heavily dependent on air transport, rather than on shipping. Air links allow for reliable and timely delivery and mean that firms can run a just-in-time production process. This type of economic activity has been a major driver of world trade growth over the past few decades.

...Accordingly, the provision of quality international links helps to attract and retain companies, people, and capital. Access to international markets is an important part of the competitive positioning of a country. A large number of academic studies show that good international air and shipping links translate into a significant national economic advantage (Limao & Venables (2001), Smyth & Pearce (2006)). As a result, some countries are making significant investment in transport infrastructure in order to become hubs for international economic activity.

New Zealand's connections to the world

... New Zealand's exports of services are much more reliant on air links. Both tourism and export education, for example, which together account for about 80% of services exports are heavily reliant on air travel, as they involve the international movement of people.

Air links

...International air links are becoming more important for New Zealand given the increased importance of speed to market for a number of high value areas of economic activity. Stronger international air links are an important element in assisting New Zealand firms to develop a presence in such areas. Actions to maintain and develop the extent of New Zealand's air servicing links in terms of passenger traffic and air cargo should therefore have a substantial effect on the New Zealand economy.

*New Zealand is doing many of the right things in terms of making itself as attractive as possible to international air carriers. New Zealand's liberal approach to the Open Skies agreement is very useful, ensuring that any airline that wishes to fly to New Zealand can do so. **In addition, New Zealand airports are making ongoing investments in infrastructure. Auckland Airport, for example, has invested to ensure that its runways are capable of receiving the Airbus A380. This positions New Zealand to continue to be a destination for the next generation of aircraft.***

[Emphasis added]

47. The critical role of airports in facilitating international trade in services places in context our earlier comments regarding concerns with possible Commerce Act outcomes that could constrain and delay investment by airports.
48. A number of airports have completed assessments to identify their respective roles in New Zealand's regional and national economies. NZ Airports does not hold these studies, but it may

be possible to collate the more recent work - subject to the agreement of the parties concerned. As an example, Wellington International Airport has recently estimated, in conjunction with consultation on its draft Master Plan⁶, that the current (2008) economic total annual contribution of the airport to regional GDP is \$669 million, and 9866 full time equivalent jobs.

49. By 2030 the draft plan estimates that:

- the airport will make a direct \$1.6 billion p.a. contribution to the regional economy, with a flow on impact of \$3.1 billion per year
- the airport will generate around 11,500 new jobs in the region, and sustain a total of 21,000 full-time equivalent jobs
- the airport will invest more than \$450 million in infrastructure.

Specific Comments

Rugby World Cup (RWC) on page 7

50. Mention is made of the importance of the event to NZ and that infrastructure investment/planning is required to ensure the country is presented in the best possible light. Further mention is made of the actual venues, but there is no mention at all of how spectators are to get either to/from NZ or to/from the town where each game is being played. It is reasonable to expect that a significant volume of this transport will be conducted by air. Ensuring seamless air travel throughout the RWC is essential to the tournament's success, and therefore there should be greater recognition of airports infrastructure planning and investment. As an example, we know that the development of the new integrated terminal at Christchurch Airport is planned to be used during the RWC.

Hub and spoke shipping on page 34

51. The hub and spoke issue also applies to air transport. A critical aspect is that, given travellers' preference for direct air connections, there would be a significant impact on NZ tourism and economic development if international airlines increasingly route through airports on the East coast of Australia. Airports must retain international levels of capability, capacity and service quality to attract international carriers, or the tourism sector will suffer significantly.

Transport: Air Services – Background and History on page 35

52. There are a number of important trends under way in air transport and we suggest that a new paragraph be inserted outlining the following:

- The changing nature of air travel over time – originally a few flights for a limited number of people, which developed into widespread commercial operations undertaken by traditional carriers, to today's scenario where a mix of full-service and budget operators

⁶ *The Plan, 2030*, Wellington International Airport, 30 April 2009, available at www.wellingtonairport.co.nz

provide a range of air services that allow a large volume of people the opportunity to travel to a huge variety of destinations

- Airport operations have changed from an operational focus on the aircraft, to an emphasis on the passengers and their travel experience, and recognition of the different service levels that airlines require (e.g. low cost vs. full service)
- Airport ownership and management structures have changed throughout this evolution to reflect an increasingly commercial approach. This has presented challenges especially around infrastructure investment at smaller centres.

53. With regard to the national contribution of airports, we suggest that an additional sections could be inserted outlining the following:

- the tourism industry is New Zealand's largest industry and airports are a critical component of this in terms of providing quality infrastructure to enable future growth
- noting that domestic passenger movements are as important to the economy as international movements
- noting that long haul services currently only operate out of Auckland and Christchurch
- noting that airports are key infrastructure assets as demonstrated by Government policy positions on overseas ownership.

54. We have earlier pointed out that the paper makes no reference to the air navigation infrastructure. This infrastructure makes up the backbone of the aviation network – the equivalent of roads and railway lines. The National Plan should therefore include air navigation infrastructure and perform a similar stock take to that undertaken for all other infrastructure categories.

Assets on page 36

55. We think it would be helpful to illustrate the aircraft types that suit specific length runways. For example, long runways (AK) suit all aircraft types to all destinations. Shorter runway lengths result in operational constraints, limiting aircraft types and thus destinations and passenger capacity.

Institutional Arrangements on page 36

56. It is important to note that both Auckland and Wellington airport have public shareholders, with Wellington airport having issued \$100m retail bonds in December 2008.

Regulatory Issues on page 37

57. In addition to the Commerce and Airports Authorities Acts, airports are regulated by the Civil Aviation Act in terms of operational matters, Public Works Act in terms of land holdings, and the Resource Management Act and Local Government Act in terms of local planning matters. We think it is likely that airports have concerns regarding the operation of RMA processes and local planning, but we have not had the opportunity to canvass members.

58. Airports are currently very concerned about the private members Bill⁷ that would change well-established provisions of the Public Works Act affecting airport land, and are opposing the Bill. Runway and terminal developments are major long term investments, with considerable impacts on their communities and regions. Constraints inevitably lead to reduced efficiency, higher cost air travel, and reduced ability to accommodate new aviation technology and growth in passenger numbers. Certainty in relation to land holdings is therefore critical to airports, and uncertainty has the effect of discouraging the large investments that are required from time to time. Many New Zealand airports are built on land originally acquired for public works, and the airports have made extensive investments over the years on the basis of the existing provisions of the Act. It is essential that one of the things that New Zealand has done well in terms of international competitiveness, i.e. maintaining timely investment in airport infrastructure, is not put at risk by the provisions of the Bill.

Funding and Pricing on page 37

59. Not all airports price on a per passenger per flight basis, for example a number levy their charges based on Maximum Certified Take Off Weight (MCTOW) of aircraft. We would be able to collate further information from airports.
60. We have referred earlier to an emerging issue of funding essential air navigation infrastructure at regional airports. The air navigation infrastructure is government owned via Airways NZ, and when it comes to re-investments, funding and prioritisation, there may be valid reasons for assessing the upgrades alongside contestable funding for other transport infrastructure such as roads and rail.

Analysis on page 37

61. This section merits considerable improvement and, as a minimum, it should be brought in line with the sea ports analysis section.
62. Additional subheadings could read as follows:
- Financial performance
 - Operational performance
 - Access to and from airports
 - Role in regional development
 - Changes in international air movement patterns and volumes – and their flow on economic effects on New Zealand, particularly apparent during times of crisis such as 911, Swine Flu, Global recession etc.
 - Changing technology – such as new aircraft types
 - Operation modes – e.g. hub and spoke (airlines preferred mode) vs. point to point (passengers preferred mode)
 - Future air travel growth expectations– and the need for airports to respond to this growth, and the national economic benefits that will flow from growth

⁷ The Public Works (Offer Back of and Compensation for Acquired Land) Amendment Bill

- The need for NZ regional hub(s) vs. hubbing through East Coast Australia
63. The discussion paper (paragraph 155) suggests that NZ airports are relatively free from congestion, but we think that the National Plan should provide some additional commentary in this regard. In particular, Wellington is already at full utilisation at peak times and has an important network flow-on impact on other main trunk and regional routes. Auckland has a well-advanced major project to develop a second runway which has not been mentioned in the paper.

Planned investment on page 83

64. The table of airport infrastructure projects on page 83 is an incomplete picture. NZ Airports would be happy to facilitate the collation of more comprehensive information from members. For example we note that Wellington airport has invested \$200m in capital investment over the last 10 years and estimates further investment of \$450 million by 2030. (The Wellington Master Plan is available at www.wellingtonairport.co.nz)
65. We also note that Boeing has released worldwide growth forecasts of 5%, with the Asia Pacific region to grow fastest over the next 19 years.
66. Airports consider that timely investment in infrastructure is critical to enable future air travel growth, and increased competition will drive lower fares for the benefit of consumers and the economy. As mentioned above, this has been evidenced by the arrival of Pacific Blue and more recently Jetstar to New Zealand.
67. Capital investments in airports involve long lead times, typically take several years of planning followed by construction and long term passenger volume forecasts are an integral component of airport planning. For information we have included as Appendix 3 a description of infrastructure planning in the airport sector, known as master planning.
68. It is critical that road and other infrastructure links to airports are planned in a similar manner. These should include known bottlenecks to the airports. We would be happy to collate material from airports on this issue.

Appendix 1

Airport pulls back on new runway

NZ Herald

4:00AM Saturday Aug 29, 2009

By [Grant Bradley](#)

Auckland Airport is putting the brakes on building its northern runway to save \$9 million this year as it forecasts a weakening in underlying profit due to soft passenger numbers.

The company expects profit to range from \$93 million to \$100 million for the current financial year.

Yesterday it reported a 2.1 per cent lift in underlying profit to \$105.9 million, although a devaluation of its investment property portfolio as well as one-off restructuring costs saw actual net profit after tax down 63.1 per cent to \$41.7 million.

Revenue rose 5.2 per cent to \$369.2 million, helped by a strong second-half retail performance, some late property deals and extra charges to use the airport's expanded international terminal.

Passenger numbers declined 1.4 per cent to just over 13 million and total aircraft movements were down 1.8 per cent to 156,781.

The company said the operating environment was "brutal" and it was not certain whether the aviation sector was through the worst.

Chief executive Simon Moutter said he took the helm just as world markets collapsed but had finished the year in good shape.

While the current year's forecast profit was down with passenger volumes likely to remain subdued, the prospects for the 2011-2012 financial year were better.

"What we have indicated is that with some return to growth in passengers the outlook is very favourable."

Moutter said the northern runway would be deferred for 12 months to allow passenger volumes to catch up.

The first stage of the runway was due to be completed by 2011 but had no direct connection to providing Rugby World Cup infrastructure as it was a narrow 1200m runway suitable only for small commuter planes.

Construction began last spring and was well ahead of schedule and theoretically could be finished on schedule if passenger numbers picked up markedly against the trend.

"We must carefully ensure the additional infrastructure capacity is delivered on time to meet future tourism and trade demand - not ahead of or behind this demand."

The company would have to spend \$2 million preserving work already underway and demobilising the contractor. *The pause would also give the airport time to clarify with the Commerce Commission what valuation methodology would apply to the runway.**

The deferral for six months of some aeronautical charges for airlines would cost it \$2 million.

Moutter said the company was working with several more proactive airline customers to help drive the aviation market.

Air New Zealand, the company's biggest airline customer, and often its biggest critic, has praised the airport although it still has underlying issues with its cost structure.

The airline's chief executive, Rob Fyfe, said on Thursday the relationship with the airport was improving.

"In contrast to some other airports we're being treated more as a customer rather than a cow to be milked."

Moutter said although Pacific Blue and Jetstar had begun new international services during the past year, long-haul route development work took more than 18 months to show up in results.

The airport has come off a five-year intensive building programme costing \$500 million but had reduced spending over the last year to \$87.5 million, which had been invested in a range of airfield, terminal, retail and property projects.

Those included completion of Pier B of the international terminal, the opening of new off-terminal parking, ongoing work on the northern runway, and a start to first-floor redevelopment at the international terminal.

Forsyth Barr analyst Jeremy Simpson said the result was at the high end of market expectations.

"It was a good result, stronger than we were going for. It's a good number in a recessionary environment."

The airport says it will pay a fully imputed final dividend of 4.45c a share, bringing total ordinary dividends to 8.20c a share. Its share price finished up 1c at \$1.76.

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* Emphasis added.

Appendix 2:

Quality Service Monitoring for Specified Airport Companies

A joint working document produced by the NZ Airports Association, BARNZ 24 June 2009

It is proposed to monitor three types of service quality measures for specified airport companies through information disclosure:

2. **Passenger perception** – The quality of services and facilities provided by the airport to passengers will be monitored through surveys measuring passenger satisfaction on matters provided by the airport which contribute to the passenger's experience of identified airport activity facilities.
3. **Reliability of aeronautical services** – The reliability of identified airport activity services and facilities provided by the airport will be measured via two means:
 - o the withdrawal of material services by the airport;
 - o delays to on time departures resulting from withdrawal of identified airport activity services by the airport, that ought to have been reasonably expected by users.
4. **Capacity and utilisation** – The capacity of facilities is described at a high level in terms of physical dimensions, processing capacity or technical specifications (as most appropriate for the particular service or facility) augmented by analysis of peak hour utilisation of particular facilities.

It is proposed that the three identified airports will trial data collection for the 2008/09 Financial year (to the extent possible) in order to test the processes for data collection, identify any definitional issues which arise in practice and ascertain whether the measures will be useful and likely to drive improved processes, efficiency and investment decisions as well as informing interested persons.

1. Passenger perceptions

The perception by the end consumer of the quality of service received is most appropriately collected via surveys of airline passengers. Information should result in quantitative statistically robust outputs, based on qualitative inputs. This will then be able to be related to the outputs of the airport capacity and utilisation measures, so as to then have both qualitative and quantitative measures of quality of service to passengers.

Passenger perceptions of services provided by the airport	Domestic	International	Combined
Availability of baggage carts / trolleys	AKL	AKL	*
Ease of finding your way through airport	AKL	AKL	*
Flight information screens	AKL	AKL	*
Walking distance inside the terminal	AKL	AKL	*
Ease of making connections with other flights	AKL	AKL	*
Courtesy / helpfulness of airport staff	AKL	AKL	*
Availability of washrooms / toilets	AKL	AKL	*
Cleanliness of washrooms / toilets	AKL	AKL	*
Comfort waiting / gate areas	AKL	AKL	*
Cleanliness of airport terminal	AKL	AKL	*
Ambience of terminal	AKL	AKL	*

* Where international and domestic terminals are not separated (as at CHC and WLG) the airport can elect to report results for Domestic, International or combined

Methodology:

The airport can either undertake this survey itself or can utilise the services of an organisation which undertakes similar surveys (such as the ACI ASQ survey). In all cases robust and objectively independent sampling methods and data collection processes must be able to be demonstrated, and a statistically significant sample should be obtained. When designing its survey and means of data collection, the airport should strive to ensure that, as far as possible, the information is collected and disclosed in a means which is comparable with other identified airports.

The airport's disclosure should include:

- A description of the sampling methodology used
- The annual score across a number of services offered
- Any commentary which the airport wishes to provide regarding these statistics including steps undertaken during the year or planned to be undertaken to address any issues highlighted by the survey.

2. Reliability of Aeronautical Services

It is proposed to measure the quality of service delivered to airlines via two main types of metrics:

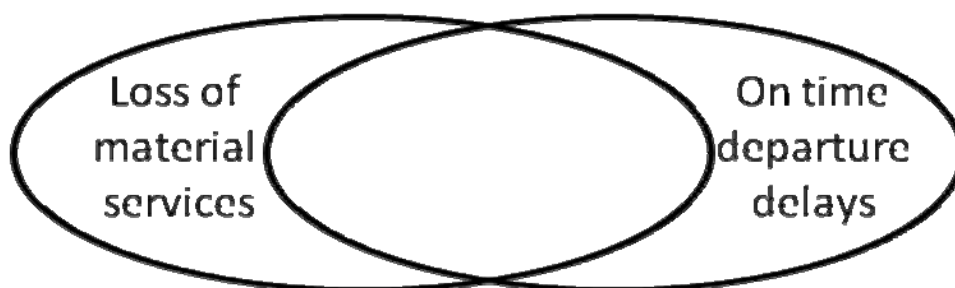
- Loss of material services
- On time departure delays

Loss of material services, measures the frequency and duration of the unavailability of facilities which can materially impact the inbound and outbound operation of aircraft and therefore passengers and freight.

On time departure delays, measures whether the unavailability of facilities provided by the airport (whether material services or not), caused an on time departure delay. On time departures is an important cost driver for airlines and is a measure that NZ Airport and BARNZ supports as a key indicator of airport operational efficiency.

When interpreting these metrics it is important to note that:

- Loss of material services and on time departure delays are not mutually exclusive
- Not all interruptions / loss of material service will result in an on time departure delay (as material services are both on arrival and on departures)
- Some on time departure delays will be caused by the loss of material services
- Some on time departure delays will be caused by services other than those listed under material.
- One withdrawal of a material service could result in more than one flight delay



Material services	Other services (examples)
<ul style="list-style-type: none"> Reliability metrics will be recorded for interruptions to all material services 	<ul style="list-style-type: none"> Reliability metrics will be recorded for interruptions to other services to the extent that they result in an on time departure delay
<ul style="list-style-type: none"> Runway Taxiway Contact stand and airbridge Remote stand and means of embarking or disembarking the aircraft Baggage sortation system (departing) Baggage reclaim. 	<ul style="list-style-type: none"> NIGs GPU PCA FIDs IT systems PA system Late allocation of gate A secure gate lounge Common use counters

Supporting process	Outside of Information Disclosure
Root cause analysis	All interruptions should where possible describe who was responsible and what the primary cause was. Where a party sub-contracts activities they remain responsible for those activities and therefore any interruptions to subcontracted activities.
On time departure delay root cause analysis	Airlines and airports to meet reasonably soon after the delay in on-time departure to determine if the interruption to service was due to airport, airline, security, or third party.
Operational Improvement Forums	Airlines and airports to meet regularly to identify any measures available either to reduce the likelihood of service losses which have caused loss of material services or on time departure delays from re-occurring or to better manage such losses of service or on time departure delays so as to reduce the impact. Airlines and airports to meet regularly to review passenger perception survey results (quarterly available) to identify areas where remedial action is required by the airport, airline or border agencies

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Supporting definitions and process	Within Information Disclosure
Interruption	<p>Interruption, in relation to a service provided by a specified airport company, -</p> <ul style="list-style-type: none"> • Means the withdrawal by the company of the service, during operational hours, for a period of 15 minutes or longer; but • Does not include an interruption to runway services due to weather conditions: • Does not include planned interruptions <p>Operational hours, in relation to a service provided by a specified airport company, means the periods when the service is normally made available</p> <p>Planned interruption, in relation to a service provided by a specified airport company, means an interruption of which the customers affected by it had 24 hours or more notice</p>
Scheduled operation	An aircraft was scheduled to arrive or depart and arrived or departed within 15 minutes of schedule
Airport	To include their subcontracted services
Process for Operational Improvement Forums	Airports should annually disclosure the process the airport has put in place for undertaking Operational Improvement Forums. Minutes of such meetings are to be available to the Commission upon request but are not to be included within the Disclosure.

Metrics for Information Disclosure – Airport Service to Airlines

Services	Loss of material services	# of interruptions	Duration of interruptions
Runway	<p><u>Interruption to runway services</u> A scheduled aircraft cannot land or depart due to closure of runway, e.g. a plane leaves debris on the runway which results in a closure affecting scheduled services. If there is no scheduled aircraft there is no loss of service. So long as scheduled operators can still land on the runway there is no loss of material service. E.g. if there is reduced length such that only 737s can land, there is no loss of service if no aircraft larger than a 737 are scheduled.</p>	#	00:00
Taxiway	<p><u>Interruption to taxiway services</u> For all practical purposes the taxiway is</p>	#	00:00

	unusable by scheduled aircraft and there is no alternative path reasonably available. E. g scheduled operator cannot use material portions of the taxiway.		
Remote stands and means of embarkation / disembarkation	<u>Interruptions to remote stands</u> A remote stand with bussing operations or walking to or from the terminal was scheduled, but the remote stand and/or means of passengers accessing the terminal was not available and no alternative was provided. The operator had to wait for another stand or for the means of passengers accessing the terminal.	#	00:00
Contact stands / airbridge	<u>Interruption to contact stands</u> A contact stand / airbridge was scheduled and no alternative contact stand / airbridge alternative was provided. The operator either had to use a remote stand alternative or wait. This would include interruptions due to another airline not using the equipment correctly, i.e. if a second airline was affected.	#	00:00
Baggage sortation system – departing baggage	<u>Interruption to baggage sortation system on departures</u> The baggage sortation system for departing bags was unavailable for more than 15 minutes, irrespective of where the breakdown was within the system	#	00:00
Baggage reclaim	<u>Interruption to baggage reclaim belts</u> The baggage reclaim unit scheduled was not available and no baggage reclaim unit alternative was available for use	#	00:00
On time departure delay	A scheduled service has been delayed by more than 15 minutes primarily as a result of unavailability of identified airport activity services or facilities e.g. a major IT outage affects check-in and FIDs and results in an OTDD	# of flights affected	Data quality to be assessed during trial

Note: On time departure delay is a new metric for which the data quality is yet to be assessed, particularly with regard to the duration of the departure delay. Airlines and airports are committed to trialling the inclusion of this statistic. This will require significant planning and is likely to require information provision by airlines and information technology solutions if it is to be collected efficiently. This will require a sufficient lead time.

3. Capacity and Utilisation

It is proposed to measure the capacity and utilisation of key infrastructure and facilities using standardised metrics which provide an overall picture of facilities which are transparent, readily applied at each airport and which should generate outcomes that are consistent over time.

The reporting of capacity is intended only to provide an ongoing description of each airport's facilities without judgment of whether these are fit for purpose at any particular point in time. The reporting of utilisation is to provide a summary of indicative utilisation of the facilities at peak hour without any particular judgments of meeting targets or acceptable standards.

The utilisation measures should be able to be compared as trends over time at each airport, but not between airports. It is recognised that comparisons across airports will be attempted. However there will be reasons why there will be differences between airports.

Capacity reporting

It is proposed the capacity reporting will cover the following:

Airfield

- Description of runway(s) including orientation, length of pavement, width, and runway code.
- Description of main taxiway(s) stating whether full length, single or dual
- Declared capacity by Airways or the Airport for each runway (aircraft movements per hour)
- Category of Instrument Landing System

Apron

- Number of aircraft parking stands, categorised by principal purpose (international, domestic, cargo), principal aircraft type (jet, turboprop), terminal access (airbridge, walkway, remote/bussed).

Terminal

- The specific terminal facilities to be described and the proposed method of measurement as follows:

Terminal functional area	Area Available	Notional Capacity	Categories
Check-in	<p>Overall functional floor space (m²) including areas utilised by passengers and staff in direct contact with passengers as part of the process – check-in counters, kiosks, help desks, service desks, ticketing counters, baggage scales, baggage injector feeds, takeaway baggage conveyors, bag drop belts, queuing zones, seating and waiting areas associated with the check-in area, and circulation areas directly associated with the function.</p> <p>Excludes airline and airport offices, unless used directly by passengers as part of normal processing and services.</p> <p>Excludes retail and concession areas and floor curtilage area of 1m width at entries/exits to retail/concessions and adjacent to shop-front window displays for retail/concessions.</p>	Not applicable	International, domestic, integrated
Outbound baggage system	Description of the type of baggage system(s) (manual or automated sortation).	Nominal (realistic) processing capacity of the system measured in bags/hour.	International, domestic, integrated
Baggage Make-up area	Overall functional floor space (m ²) of areas occupied by baggage make-up conveyors, loops and laterals, dolly circulation and staging, staff sorting and loading space and Hold Baggage Screening Equipment.	Not applicable	International, domestic, integrated

Landside circulation	<p>Overall functional floor space (m²) of areas providing general circulation to provide access for passengers to/from check-in, security and landside retail/concessions.</p> <p>Excludes retail and concession areas and floor curtilage area of 1m width at entries/exits to retail/concessions and adjacent to shop-front window displays for retail/concessions.</p>	Not applicable	International, domestic, integrated
Security screening	<p>Overall functional floor space (m²) of areas providing security screening services for passengers including the areas occupied by screening equipment and tables, and the staff operating the screening, queuing zones and an area up to 2m after the tables on the airside of the screening zone.</p> <p>Excludes Avsec offices.</p>	Notional (realistic) throughput capacity based on the number of screening stations and Avsec's advised sustainable processing rate (for domestic and international separately)	International, domestic, integrated
Passport control (outbound)	<p>Overall functional floor space (m²) of areas providing passport control for departing passengers including the areas occupied by counters, and the Customs staff operating the control point screening, queuing zones and an area up to 2m after the booths on the airside of the control point.</p> <p>Excludes Customs and Immigration offices.</p>	Notional (realistic) throughput capacity based on the number of Customs counters and Smartgate portals, and Customs' advised sustainable processing rates for each method separately.	International

Departure lounges	<p>Overall functional floor space (m²) of areas occupied by departure gate lounges including seating and waiting areas, and airline boarding control desks and areas occupied airline staff controlling boarding.</p> <p>Excludes retail and concession areas and floor curtilage area of 1m width at entries/exits to retail/concessions and adjacent to shopfront window displays for retail/concessions.</p> <p>Excludes airline lounges and pay-per-use lounges and facilities such as showers.</p>	Not applicable	Domestic and International
Airside circulation	<p>Overall functional floor space (m²) of areas providing general circulation, travelators and concourse areas that provide access for passengers to/from security screening, outbound and inbound passport control (for international), departure lounges , airbridge/terminal doorways (where passengers depart or arrive into corridors) and airside retail/concessions.</p> <p>Excludes retail and concession areas and floor curtilage area of 1m width at entries/exits to retail/concessions and adjacent to shopfront window displays for retail/concessions.</p>	Not applicable	International, domestic, integrated

<p>Passport control (inbound)</p>	<p>Overall functional floor space (m²) of areas providing passport control for arriving passengers including the areas occupied by counters, and the Customs staff operating the control point screening, queuing zones and an area up to 2m after the booths on the airside of the control point.</p> <p>Excludes Customs and Immigration offices.</p>	<p>Notional (realistic) throughput capacity based on the number of Customs counters and Smartgate portals, and Customs' advised sustainable processing rates for each method separately.</p>	<p>International</p>
<p>Baggage reclaim</p>	<p>Overall functional floor space (m²) of areas occupied by baggage reclaim belts, waiting areas, trolley storage areas, baggage service counters and areas occupied airline staff directly interfacing with passengers.</p> <p>Excludes areas in the baggage room such as the drop-off belt.</p>	<p>Notional (realistic) capacity of passengers and bags based on practical number of narrow-body jets per reclaim unit per hour for domestic, and of wide-body jets per reclaim unit per hour for international.</p>	<p>Domestic and International</p>
<p>Biosecurity screening and inspection and Customs secondary inspection</p>	<p>Overall functional floor space (m²) of areas providing biosecurity screening and inspection, Customs secondary inspection for arriving passengers including the areas occupied by counters, screening equipment, and the MAF and Customs staff operating the screening and inspection areas, queuing zones and an area up to 2m after the screening equipment or counters on the landside of the screening and inspection points.</p> <p>Excludes MAF and Customs offices and search rooms.</p>	<p>Notional (realistic) throughput capacity based on the number of MAF screening stations and MAF's advised sustainable processing rate</p>	<p>International</p>

Arrivals concourse	Overall functional floor space (m ²) of areas occupied by the landside public meeting areas including seating and waiting areas. Excludes retail and concession areas and floor curtilage area of 1m width at entries/exits to retail/concessions and adjacent to shopfront window displays for retail/concessions.	Not applicable	International, domestic, integrated
Passenger facilities	Overall functional floor space (m ²) of areas providing general facilities for passengers such as toilets, help desks, information desks, telephone and internet facilities etc. Excludes plant/services areas, cleaners rooms etc.	Not applicable	International, domestic, integrated
Total terminal functional areas	Aggregate of terminal functional floor space (m ²) of all areas described above (except outbound baggage system) providing facilities and service directly for passengers.	Notional capacity of the terminal, based on the limiting throughput capacity assessed for the various components described above.	International, domestic, integrated. Reported for total areas relating to departures and arrivals separately, and for the overall total of departures plus arrivals.

Utilisation reporting

It is proposed that the monitoring and reporting of utilisation will be in the following ways:

Runway

- Number of aircraft movements during the selected representative Busy Hour for runway activity for each airport, categorised by Arrivals, Departures, Total.

Aprons

- Averaged number of aircraft turnarounds for the selected representative Busy Day for each airport, for each of the categories reported in the capacity description (a turnaround is an arrival and departure of a particular aircraft).

Terminal

- Throughput of passengers per 100m² in the various selected busy hours for departing and arriving, domestic and international passengers, for each of the separate terminal functional areas identified above, and for the various aggregated areas described above.
- Estimated throughput of baggage through the inbound and outbound baggage systems in the selected busy hours for domestic passengers and the hour prior to the selected busy hour for international passengers, measured in bags per hour. For reclaim units and manual sortation outbound systems, this will be estimated using estimated numbers of bags per passenger. For automated outbound baggage systems, this may be able to be estimated by reference to historical records of actual bags processed through the system during the relevant hour.

Methodology	Definition
Busy period demand	<p>The busy hour for runway and terminal utilisation will be selected by an independent expert third party following a detailed analysis of various methodologies across each of the regulated airports. A trial will be necessary to determine the appropriate methodology which can then be included in the information disclosure requirement.</p> <p>It is also probable that there will be different busy hours identified for departing and arriving passengers, for both domestic and international.</p> <p>The selected historical busy day or hour should also be a day or period of normal busy activity during which capacity was not being affected by constraints such as poor weather or fog.</p>

Commonly used include busy hour definitions are:

- 90th Percentile Hour (or Day) – Ranked hour (or day) of the year, above which 10% of the ranked hours or days are busier
- 95th Percentile Hour (or Day) – Ranked hour (or day) of the year, above which 5% of the ranked hours or days are busier
- 30th Busy Hour (or Day) – Ranked hour (or day) of the year, above which 29 of the ranked hours or days are busier

- Alternatively the appropriate measure may be the busy hour on the busy day, which in turn can be assessed by these measures:
 - IATA Busy Day – defined as the second busiest day in an average week (excluding special events such as religious festivals, trade fairs and conventions, and sport events) during the peak month of the year.
 - Peak Month Average Day (PMAD) – FAA Method
 - Peak Month Average Weekday (PMAWD)
 - Busy Day Typical Week Peak Month (BDTWPM)

Appendix 3:

Airport Infrastructure Planning – Master Planning

The following is extracted from a paper prepared for NZ Airports by Peter D Smith⁸ in 2009.

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 20th 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

⁸ The author is a UK based independent consultant airport planner and engineer with over 35 years international experience of airport planning, design and development.

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.

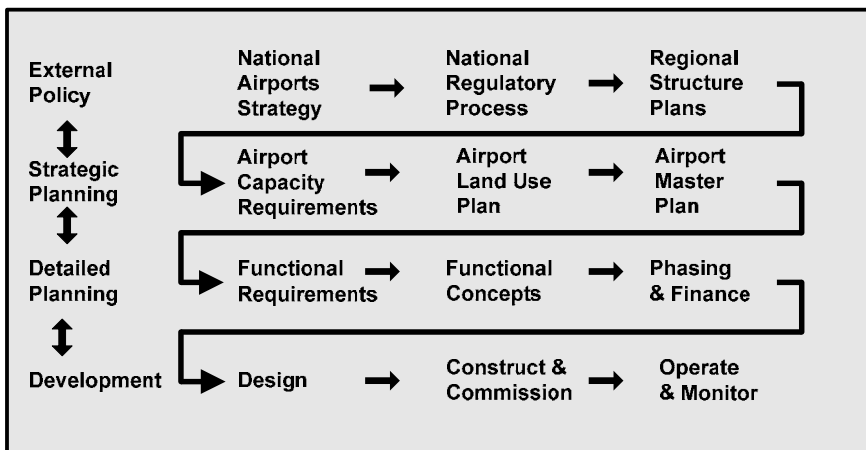
All of these stakeholders contribute to shaping and delivering airport services. The airport owner / operator has different statutory or contractual relationships with each party and different 'information sharing' relationships relating to their particular interests.

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.

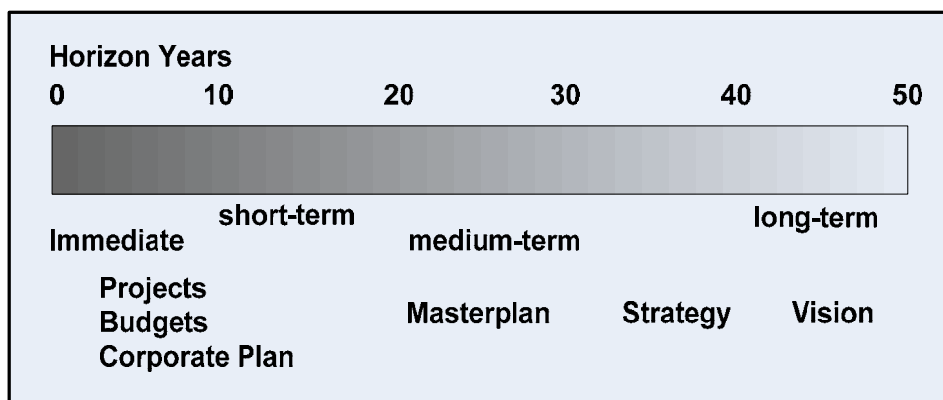
The dialogue between the airport operators and the governmental agencies addresses a range of public interests. In particular, public policy seeks to balance the national / regional social and economic benefits with the fair treatment of those locally impacted by the airport development and operations.

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. ...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.

The reasons asset management planning specified per master plans are more important for airports than day to day asset management practices is explained by the differences between airports and utility companies (which use Asset Management Plans):

- primary airport infrastructure and operations are subject to strict international rules and standards and compliance is regulated by the Civil Aviation Authority, This includes reviews of risk management and operational practices associated with all safety-related assets
- the primary services, passenger and freight operations, are provided to the end users by the airlines
- airport operators are landlords for multiple services provided by other businesses and government agencies
- airports provide the infrastructure and facilities for shared use by these businesses
- airports are land extensive, including the safeguarding of land for long-term capacity development (required in the public interest)

- airports have major economic, social and environmental impacts on the surrounding land use. These are resolved through master plan consultation with government agencies and local authorities and are reflected in regional plans and agreements governing those issues
- airports have multiple stakeholders with different interests in airport development plans and the delivery of airport services. All of these stakeholders contribute to shaping and delivering airport services. The airport operator has different statutory or contractual relationships with each party. The information sharing requirements of each relationship relate to their particular interests and many involve legitimate commercial sensitivities
- airport service standards and capacity involve complex dynamic measures that are not easily understood and easily misinterpreted. Direct comparisons between airports and over time will often mislead rather than inform. The agreement of development requirements are therefore more appropriately conducted between those with full insight of the dynamics and best practices of the industry
- airport investment / development planning involves extensive consultation with the concerned stakeholders from the strategies and concepts in the masterplan, through the scope and timing of particular projects, and the detailed facilities planning to refine the stakeholders operational requirements.

Other regulators have acknowledged the importance of master planning but do not require detailed asset management plans, for example the UK report of the independent panel on airport regulation, 2009 includes:

“The panel also recommends that [Tier 1 and Tier 2 airports] be subject to a licence condition requiring them to prepare and consult with the local community, passengers and airlines and others on a Master Plan for the airports development.”

The provision of master plans is also required for some Australian airports.

It is not appropriate for master plans to be updated annually. However, in order to assess material changes and progress with respect to asset developments, interested parties could be provided with annual commentaries in order to formulate their views on whether airport investment is being conducted in the long term interest of consumers.