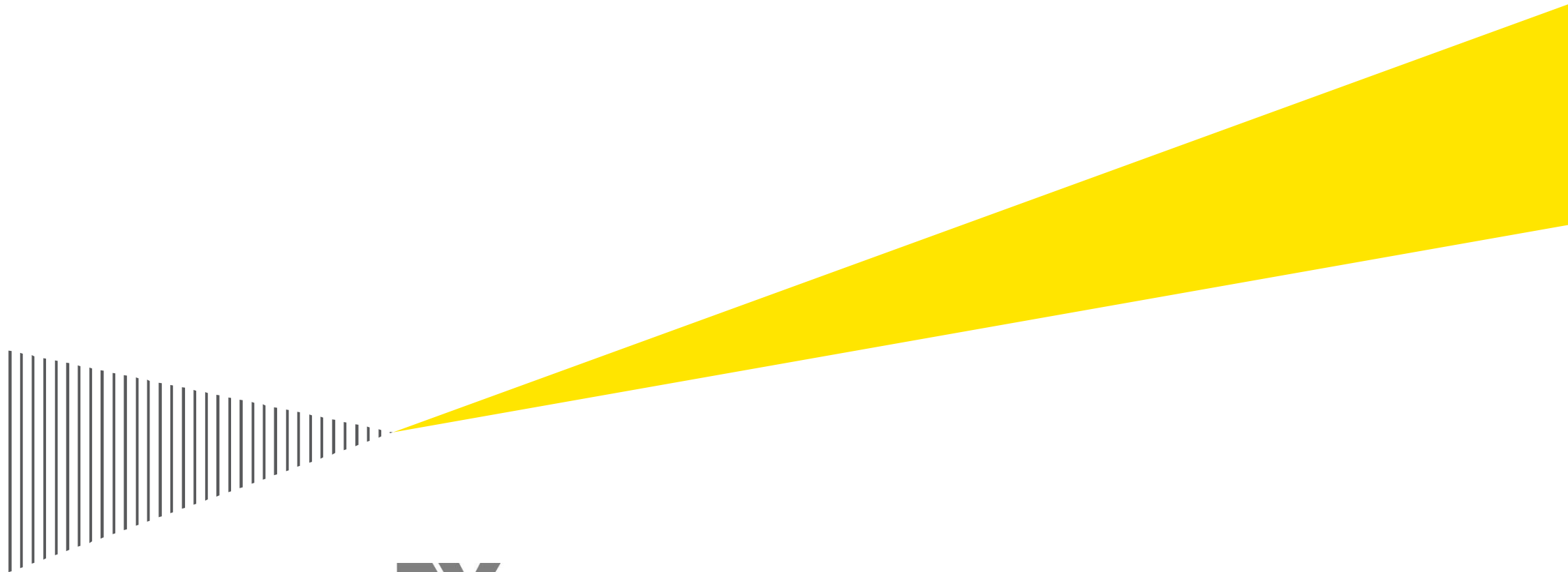


Technical Report 27

Ernst & Young – Economic Impact of the Proposed Runway
Extension

Wellington International Airport Limited

Economic impact of the proposed runway extension



Building a better
working world

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1	Executive Summary	1
2	Purpose of report	3
	2.1 Purpose of report	3
	2.2 Nature of report	3
	2.3 Disclaimer on demand scenarios	4
3	Introduction	5
	3.1 The role of airports in supporting economic and social development	5
	3.2 Airports play a particular role in the New Zealand economy	6
	3.3 Wellington's role in the New Zealand economy	6
	3.4 Wellington's role in New Zealand's tourism market	7
	3.5 Wellington's current long-haul market	8
4	Approach	12
	4.1 Scope of the analysis	12
	4.2 Assumptions to the analysis	12
	4.3 Limitations to the analysis	13
	4.4 Approach	13
	4.5 Economic impacts	18
5	Strategic Demand analysis	21
	5.1 Strategic demand analysis	21
6	Economic impact results	26
	6.1 Introduction	26
	6.2 Direct impacts – quantified	26
	6.3 Forms of economic benefits	28
	6.4 Qualitative benefits	29
	6.5 Indirect/induced impacts	32
7	Technical annex	33
	7.1 General assumptions	33
	7.2 Economic benefits assumptions	33

1. Executive Summary

This report assesses the economic benefits of an extension of the runway at Wellington International Airport. The analysis undertaken in this report was completed in February 2014. The purpose of this extension is to enhance the international connectivity of Wellington by providing the capacity for the airport to service

- ▶ direct long-haul international flights, and
- ▶ connecting long-haul flights serviced by larger aircraft via Australia (using 5th freedom air service rights).

Airports play a crucial role in a globally connected economy such as Wellington and New Zealand's. They enable the air transportation of people and goods; provide an important hub for business investment and economic development to occur around; and increase business competitiveness and attractiveness. New Zealand's economic geography makes this role even more crucial.

Wellington's economic structure and role as the capital city of New Zealand mean that constraints on the international connectedness of Wellington are a national issue, with the impacts of additional costs and foregone economic activity felt beyond the Wellington region. Section 3 sets this out in more detail.

Strategic demand analysis

In assessing the scale of net direct economic impact that would be realised within New Zealand and the Wellington region as a result of the runway extension, the demand for three distinct markets has been analysed:

- ▶ Direct service to an Asian hub
- ▶ Direct service to a North American hub
- ▶ Service via Australia from a long-haul carrier not currently servicing the Wellington market

These strategic routes were considered under low, medium and high demand scenarios. Sections 4.2 and 4.3 set out the assumptions and limitations to the analysis.

Without a runway extension, the option of long-haul flights directly from Wellington Airport does not exist and connecting via other airports adds time and cost to travel. Notwithstanding the current limitations, there is already a developed market for long-haul services in the region, with large numbers of passengers currently travelling internationally to/from Wellington through connecting to a long-haul service at another airport:

- ▶ 295,000 long-haul passengers fly to/from the Wellington region, and a further 167,000 fly to/from regions adjacent to Wellington per annum. This is 462,000¹ in total or, on average, 633 passengers per day travelling in each direction
- ▶ Every year, 161,000 passengers fly to/from Asia, 151,000 to/from Europe, 125,000 to/from the Americas, and 26,000 to/from the Middle East/Africa
- ▶ Typically, a daily long-haul service is viable with 80% load (i.e. approximately 220 passengers)
- ▶ International flights typically operate with load factors of around 80%²

Section 4.4 sets out the approach that was taken to the strategic demand analysis. The level of existing demand for indirect international services to and from Wellington gives confidence that there is significant demand for direct long-haul services.

New services make connections more efficient, where they were previously unavailable or complex. This stimulates the markets that the connections serve and generates economic growth. There are many examples where new connections have provided strong economic growth. For example, Hawaiian Airlines began direct services between Honolulu and Auckland in March 2013, in a market that was already served by Air New Zealand. Hawaiian visitors to New Zealand are 78% higher in the 12 months to December 2013 than they were in the 12 months to December 2012.³

Under all scenarios, services are likely to be commercially viable on Asian and North American routes from an extended runway becoming operational in 2020. The level of demand across these two strategic routes is sufficient to mean that initially, on average, a long-haul flight on one or the other of these routes would arrive/depart Wellington each day.

In the medium and high scenarios, there is sufficient demand to support additional long-haul capacity that operates via Australia.

¹ Statistics New Zealand migration statistics for NZ resident region, Sabre ADI for overseas visitor by point of origin for YE Aug13

² IATA July 2013 YTD International Global Passenger Load Factor 79.2% (Asia-Pacific 79.5%)

³ Statistics New Zealand Migration Data, Year Ending December 2013.

Over time, as a result of global demand growth for air-services, and as the impact of induced demand on the Wellington route begins to take effect, a steady growth in the number of international services that will be commercially viable through Wellington Airport is expected. This would see between 16 and 33 additional flights per week by 2060 in the low and high scenarios respectively.

Section 5 provides more detail on the strategic demand analysis.

Economic impacts

This study captures the direct economic impacts which are expected to occur to the Wellington region and New Zealand economies as a result of the induced aviation movements to Wellington enabled by the runway extension. The following economic impacts were quantified:

- ▶ International tourism - number of tourist nights and expenditure
- ▶ Business passengers – productivity savings from reduced travel times⁴
- ▶ International students – increased numbers of students and associated expenditure
- ▶ Freight – productivity improvements from reduced journey times
- ▶ Aviation and airports – economic gains to the airport and aviation industry, including retail operations

In addition, a range of other benefits were considered but not quantified. Section 4.5 sets out the approach taken to assessing the economic benefits and further detail can be found in the Technical Annex.

Section 6 sets out the level and nature of positive direct economic impacts that would be felt from 2020 when the runway construction is expected to be completed. The benefits from the first year of operation (2020) range from:

Table 1: Quantified economic benefits (value added)

Year	Distribution of benefits	Low	Mid-case	High
In 2020	Wellington regional economy	\$29m	\$35m	\$42m
	New Zealand economy	\$67m	\$99m	\$125m

⁴ Leisure travellers would also benefit from reduced travel times. This is a social benefit, so is not quantified in this economic analysis.

Year	Distribution of benefits	Low	Mid-case	High
In 2060	Wellington regional economy	\$55m	\$86m	\$120m
	New Zealand economy	\$72m	\$178m	\$259m

Over the 40 year assessment period in this report, assuming a 6% discount factor⁵, this gives a net present value of direct economic benefits of between \$714m and \$1,751m at a national level, and \$389m and \$684m at a regional level. Based on publicly available data relating to the multiplier effects of the direct economic impacts related to air services, the indirect and induced economic impact flowing from this increase in aviation and associated activity would, at least, equal the direct impact. This means that the Net Present Value of the total economic impact can be estimated to range between \$1,785m and \$4,379m at a national level and \$974m and \$1,709m at a regional level.

Additional international tourism expenditure is the greatest driver of the benefits to the New Zealand and Wellington economies, both in absolute terms (\$1,239m and \$289m respectively⁶) and as a proportion of total benefits (93% and 57% respectively). Increased international students and business productivity benefits contribute to the Wellington region, particularly. There is potential for freight productivity benefits but these are heavily curtailed by the lack of freight capacity available in passenger jets. The runway extension is not expected to support dedicated freight air services.

A range of additional qualitative benefits are likely to flow from enhancing the international connectivity at Wellington Airport through a runway extension. These include:

- ▶ Benefits to economic competitiveness and productivity, such as easier access to knowledge sharing through face-to-face meetings, an international labour market, customers, suppliers and knowledge sharing around the world.
- ▶ Investment attractiveness through improved connectivity and the higher profile of Wellington globally.

⁵ Source: NZ Transport Guidelines, published by NZTA

⁶ NPV GVA terms (40 year analysis period, 6% discount rate) Medium case estimate

2. Purpose of report

2.1. Purpose of report

Wellington International Airport Limited engaged EY to assess the economic benefits of an extension of the runway at Wellington International Airport. This infrastructure would enable airlines to operate to destinations further than Australia. This would provide enhanced international connectivity and result in the airport being able to service long-haul international flights.

The current physical constraints on the Wellington Airport site mean that wide-bodied jets, typically used for long-haul flights, are unable to land and take-off with full passenger loads when operating long-haul sectors. This means it is commercially unviable for airlines to provide direct international connections (beyond the Australian market) from Wellington. As a consequence, passengers travelling to/from the Wellington catchment must travel via an additional flight connection through another airport (typically domestically via Auckland) which in turn adds time and monetary costs and suppresses travel demand.

For the purposes of this study, EY has assumed that:

- ▶ an extended runway would remove the current physical constraints that prevent wide-bodied jets, typically used on long-haul flights from operating with viable payloads at Wellington Airport
- ▶ direct international services would only be provided to/from Wellington, if demand is sufficient to render the services commercially viable.

This report evaluates the economic impact to New Zealand and the Wellington region of such services under a range of potential demand scenarios

2.2. Nature of report

This report is an economic impact report. It measures the impacts of a change in infrastructure provision at Wellington Airport namely a runway extension as described above, in terms of economic activity. . “Economic impact” studies have been defined as follows⁷:

An “economic impact” should be reserved for the narrow results where an industry, event, or policy has the result of either: 1) bringing new revenues into the region that would otherwise not occur in the region or 2) keeping revenues in the region that would otherwise be lost to the region. Economic impacts are defined as the net changes to the economic base of a region that can be attributed to the industry, event, or policy that would otherwise not be there

This report is not a cost-benefit analysis. Cost benefit analysis (“CBA”) is an assessment tool used in determining whether a project provides a net benefit to society as a whole. The key principle of CBA is to convert the project’s costs and benefits into dollar terms and decisions over whether the project is desirable can be informed by whether the project delivers benefits that are over and above its costs. It includes a wider range of project benefits, including the social benefits (such as the time and cost reductions for leisure travellers) but some benefits that are included in an economic impact assessment are excluded. A CBA also includes an assessment of economic, social and environmental costs such as construction and whole-of-life operating costs; congestion and noise.

⁷Watson, Wilson, Thilmany and Winter (2007) “Determining Economic Contributions and Impacts: What is the difference and why do we care?” Journal of Regional Analysis and Policy 37 (2):140-146

2.3. Disclaimer on demand scenarios

This report presents a series of demand scenarios. The calculation of demand scenarios for long-haul services as a result of the runway extension has been based on inputs sourced from publicly available sources. The methodology applied within this analysis conforms to our understanding of market precedents. The results of this analysis are broadly consistent with international aviation demand and services provided globally.

This study relies on information and data from a range of sources, including:

- ▶ Current international passenger demand movements through Wellington airport (either via other New Zealand or Trans-Tasman airports)
- ▶ Projected increases in international movements to New Zealand as sourced from Statistics New Zealand Migration
- ▶ The calculation of the level of induced demand as a result of the provision of international services was supported by publicly available literature
- ▶ Quality of service index - InterVISTAS consulting group⁸
- ▶ Stimulated/induced demand - The International Air Transport Association (IATA)⁹ information collected as part of the stakeholder consultation process

The extrapolated growth in flight movements depends on a number of assumptions regarding:

- ▶ forecast economic conditions in Wellington, New Zealand and globally¹⁰
- ▶ passenger behaviour and preferences
- ▶ commercial factors affecting airlines and their choice of routes and services
- ▶ Wellington region's relative and changing attractiveness compared with other locations within New Zealand, and
- ▶ the types of services that would be operated at Wellington Airport (i.e.: low-cost or full business service offerings)

The demand scenarios are based on existing traffic data and forecast growth rates sourced from Statistics New Zealand and Sabre Airport Data Intelligence. The analysis has been prepared for economic impact assessment and should be viewed within the context and purposes of this study and should not be relied upon for any other purpose.

⁸ http://www.aci-na.org/sites/default/files/welch_qsi_fundamentals.pdf

⁹ <http://www.iata.org/ABOUT/Pages/index.aspx> and http://www.tourism.wa.gov.au/Publications%20Library/Infrastructure%20and%20Investment/Aviation/Connecting_Australias_North_West_Globally_via_Singapore.pdf

¹⁰ Sourced from Statistics New Zealand and OECD economic forecasts

3. Introduction

3.1. The role of airports in supporting economic and social development

Airports have long served as a popular and important mode of transportation, particularly for long distance and international travel. As the world's economy has become more inter-linked, demand for air transport has responded accordingly. This supports the growth of high-value service sectors that place a premium on face-to-face communications, as well as the timely movement of high-value freight. On average, air passenger numbers have doubled every 15 years since 1970 and are forecast to double again over the next 15 years.¹¹

But the economic and social impact of airports is much greater than simply providing a means to get from one location to another. Understanding this wider impact of airport development on a regional and national economy is crucial to appreciate the value of these investments.

Airports play a number of roles in the economic and social fabric of a country. These roles include:

- ▶ Enabling air transportation of people and goods both between domestic and international locations. These connections support tourism activity, including international students; international trade and business activity; and immigration. They also support vital social connections through allowing visits between friends and relatives.
- ▶ Providing an important hub around which business investment and economic development occurs. This includes firms located close to the airport because they have a clear relationship with the airport; firms and activities which are heavily dependent on air transport; and firms and activities who are located there because of the proximity to a range of other businesses.
- ▶ Increasing business competitiveness and investment attractiveness. Efficient provision of air services allows businesses to reduce their transaction costs in terms of operating, expanding into new markets and being able to access a wider pool of labour. The presence of a well-connected airport can be a critical factor in attracting international investment.

¹¹ Airbus Global Market forecast 2013-2032

Air services to and from Wellington Airport are currently limited by the length of the airport runway. At 1,945 metres, the operating length available to aircraft is insufficient to accommodate wide-body aircraft serving routes beyond Australia. Even for services to and from Australian airports, both narrow-body and wide-body aircraft face load restrictions which can affect the ability to operate economically viable services. A runway extension would reduce the restrictions in place, creating the potential for economically viable direct flights to a range of destinations to be operated.

This report evaluates the economic impact to New Zealand and the Wellington region of such services under a range of potential demand scenarios

Figure 1: Economic benefits of aviation



Investments in increasing the capacity of airports have resulted in significant economic benefits on a national basis internationally. An investment of C\$1,805 million at Vancouver airport was estimated to have led to a 5.4% increase in connectivity for Canada as a whole. As such, this raised Canada's long-term productivity by 0.04%. Assuming that the number of hours worked remains constant, this implies an annual boost to Canadian GDP of C\$348 million (an economic rate of return of 19.3%).

(Source: IATA)

3.2. Airports play a particular role in the New Zealand economy

The aviation industry is critically important in New Zealand for the national economy for domestic transport and to connect New Zealand with its global trading partners. This reflects the characteristics of New Zealand's economic and social geography, including:

- ▶ A long, thin, sparsely populated country. The population is highly urbanised and is concentrated in a small number of major cities distributed throughout the length of the country. There are few alternative transport choices available for inter-city domestic journeys.
- ▶ An island nation that is geographically isolated from other countries, including key trading partners.
- ▶ An open, export-oriented, economy, including exports of services such as education (international students) and tourism.
- ▶ A highly diverse and internationally mobile population, with business and immigration connections with the Asia-Pacific region as well as strong established and on-going ties to Australia and Europe.

Air transport is therefore the only viable passenger transport mode for most time-critical travel between major domestic destinations and for all international destinations. These services are crucial for New Zealand to compete in the global economy, be attractive as a business, tourist and migrant destination, and enhance the quality of life for its residents.

3.3. Wellington's role in the New Zealand economy

Wellington has particular characteristics and plays a unique role in the New Zealand economy:

- ▶ Wellington is the main gateway to the lower North Island and central New Zealand and is New Zealand's second largest city as measured by urban population¹²
- ▶ As the capital of New Zealand, it is the seat of central Government and the location of most consular representation in New Zealand, as well as the location of the New Zealand Stock Exchange

¹² Statistics New Zealand estimated resident population. Note – this is the latest release with an urban breakdown

The Wellington region is the second-largest regional contributor to the New Zealand economy (\$26.8bn or 14% of New Zealand's GDP in 2010), behind Auckland¹³

- ▶ Central New Zealand¹⁴ generates \$53.5bn in GDP, almost 30% of New Zealand's total. Over the period 2007-2010 (latest information available), GDP growth in central New Zealand was 30% higher than the New Zealand average and almost twice as high as the upper North Island.¹⁵
- ▶ Wellington's regional GDP per employee (a measure of productivity) is higher than the national average but productivity growth has been lower on average over the last decade.¹⁶ Median annual earnings and average annual earnings growth are higher than the national figures.
- ▶ 47% of the region's workforce is employed in knowledge intensive occupations (compared to a national average of just over 33%)¹⁷
- ▶ The Wellington region has significant tertiary education and research infrastructure, including four universities and three institutes of technology/polytechnics¹⁸

Wellington's airport itself is a major contributor to the regional economy – contributing around \$1.45 billion per year, employing about 1,500 people directly and sustaining nearly 9,990 full-time-equivalent jobs in the region.¹⁹

Reflecting the importance of Wellington to the New Zealand economy, constrained international connectivity in Wellington is a national issue. Additional costs and foregone economic activity, arising from the aviation constraints at Wellington will have adverse flow-on impacts beyond the Wellington region. In particular, the impacts will be felt in reduced or more costly mobility of people to and from regional areas that are within the catchment of Wellington airport and the flow-on effects that this has at a national level.

¹³ Statistics New Zealand

¹⁴ Taranaki/Hawkes Bay south to the top of the South Island

¹⁵ Statistics New Zealand Regional GDP

¹⁶ 2012 Wellington region – annual economic profile. Infometrics

<http://www.wrs.govt.nz/assets/WRS/Publications/Wellington-Region-Annual-Economic-Profile-2012-Infometrics.PDF>

¹⁷ Wellington Regional Strategy 2012 – Growing a Sustainable Economy Wellington Regional Strategy

¹⁸ Wellington Regional Strategy 2012 – Growing a Sustainable Economy Wellington Regional Strategy

¹⁹ 2030 The Master Plan, January 2010, Wellington Airport

3.4. Wellington's role in New Zealand's tourism market

Tourism (domestic and international) is a valuable sector that contributes \$1.4 billion each year to the Wellington region's economy²⁰.

- ▶ Wellington is New Zealand's most popular domestic destination²¹, and has experienced the highest growth in domestic tourism expenditure over the 2009-2012 period; domestic spending over that period increased by \$592m, of which \$227m occurred in the Wellington region²²
- ▶ Wellington has a large and culturally diverse population with New Zealand's second highest concentration of people who were born overseas (22.4%) behind Auckland (35%) and ahead of Canterbury (17.4%)²³. This characteristic generates a significant amount of visiting friends and relatives (VFR) inbound travel
- ▶ Wellington has 4.3 million international visitor nights per year and international visitors contribute \$536 million to the Wellington economy each year
- ▶ Wellington hosts around 11% of New Zealand's multi-day Australian conference delegates and 13% of non-Australian international delegates (the second highest region in New Zealand). Around 25% of non-Australian delegates are hosted at conferences within central New Zealand.²⁴
- ▶ Wellington's and New Zealand's top international visitor market is Australia. One third of Wellington's international visitors come from Australia and it is a market that continues to grow. Since September 2010, Australian visitors to Wellington airport have increased by 26%²⁵, four times as fast as the total increase in Australian visitors to New Zealand. Around 10% of Australian visitor electronic transactions occur in the Wellington region and this has been growing by, on average, 11% per annum since December 2008²⁶

- ▶ By contrast, less than 5% of Chinese visitor transactions currently occur in the Wellington region. Furthermore, while New Zealand has experienced transaction growth of 17.2% pa from December 2008 to September 2013 Wellington has only experienced growth of 3.2%pa over the same period.

There is potential for significant growth in Wellington's international tourism market, particularly from markets in Asia. These tourism markets continue to show steep growth driven by a growing middle class, increased disposable income and mobility, and increased freedom to travel. A range of diverse entry points to the New Zealand market provides the option of more choice of tourism offerings and the ability to provide a wider range of opportunities for visitors.

For example, the Chinese government recently announced their intentions to increase five-fold the number of residents travelling overseas from 82 million in 2012 to 400 million by 2018. This would mean an increase from around 200,000 Chinese visitors to New Zealand to 1 million visitors, if New Zealand holds its current market share. This is equivalent to an additional 80 return flights per week between New Zealand and China over current traffic levels. New Zealand's ability to capture these visitors will in part be related to the country's capability to offer diverse and accessible visitor experiences.

²⁰ Tourism Wellington

²¹ Colmar Brunton "Mood of the New Zealand Traveller" Survey Oct09-Dec12

²² Statistics New Zealand Tourism Expenditure

²³ 2006 Census (latest information)

²⁴ Ministry of Business Innovation & Employment Convention Activity Survey YE Sep13

²⁵ Statistics New Zealand migration data (YEspt 2010 vs YEspt13)

²⁶ Ministry of Business Innovation & Employment Regional Tourism Indicators to Sep13

Boeing forecast a long-term demand for 35,280 new airplanes between 2013 and 2032, valued at \$4.8 trillion.

They projected that:

- ▶ 14,350 of these new airplanes (41 percent of the total new deliveries) will replace older, less efficient airplanes, reducing the cost of air travel and decreasing carbon emissions.
- ▶ The remaining 20,930 airplanes will be for fleet growth, stimulating expansion in emerging markets and innovative airline business models.
- ▶ The number of wide-body aircraft in operation (suitable for long-haul flights) will increase significantly; particularly in the Asia-Pacific region from around 1,500 aircraft now to 4,000 in 30 years.
- ▶ The biggest increase will be seen in small wide-body aircraft (A330/B787/A350) which will increase from 600 in Asia-Pacific currently to over 2,000 in year 2032.
- ▶ Small wide-body aircraft are most suited to Wellington's long-haul markets. Boeing is forecasting a significant increase in these aircraft operating, with only a small proportion being identified for fleet replacement. There will be a large number of new aircraft suitable for an extended runway in Wellington that will be looking for new markets to operate in.

Source: Boeing 2013 market outlook

3.5. Wellington's current long-haul market

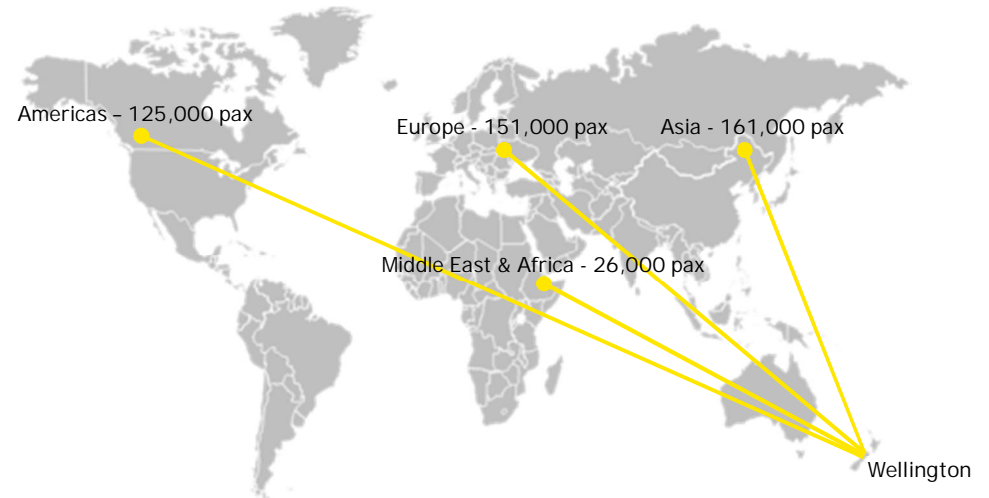
Wellington currently has a large and growing long-haul market. Statistics NZ migration data and airline booking information provide accurate estimates on the level of existing demand for air travel between the Wellington catchment and offshore destinations. Market size estimates for the year to August 2013 show 462,000 passengers travelling between central New Zealand and long-haul destinations²⁷.

Of these:

- ▶ 161,000 are travelling to/from Asia with the largest markets being China, Thailand, India, Japan, Singapore and Indonesia
- ▶ 151,000 to/from Europe; with the largest markets being UK, Germany, France, Italy
- ▶ 125,000 to/from the Americas; virtually entirely to the US and Canada
- ▶ 26,000 to/from Africa/Middle East

A typical long-haul aircraft of 275 seats carries around 220 passengers (at 80% load). This means the current long-haul market equates to around 633 passengers per day each way.

Figure 2: Current long-haul passenger demand from Wellington Airport



Wellington Airport's close proximity to the majority of its catchment demand, and excellent domestic air links to regional New Zealand gives a large potential market for long-haul services to access.

²⁷ Statistics New Zealand Migration Data, Sabre Adi

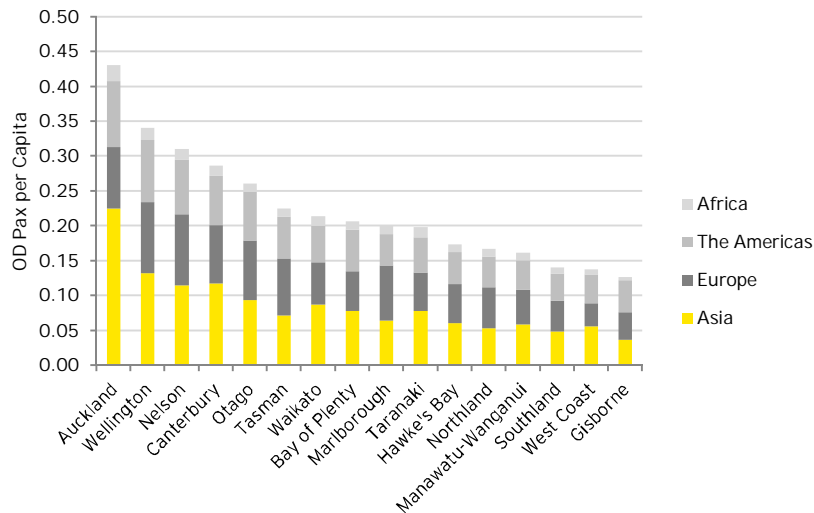
3.5.1. New Zealand Resident Travel

New Zealand residents have traditionally had a higher propensity to fly than many other countries as a result of a strong migrant population with European origins, relatively high incomes and productivity, strong links with Australia, and geographic isolation. Residents in central New Zealand already have a high propensity to travel to long-haul destinations and improved accessibility of these destinations would increase the number of trips made.

Figure 3 below shows that:

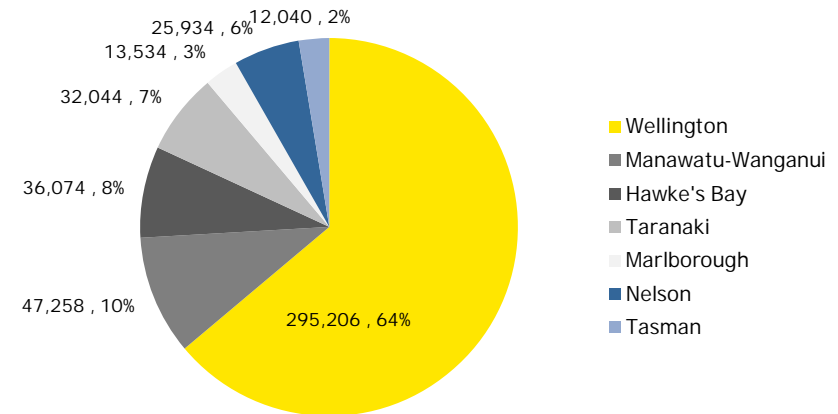
- residents from the Auckland region have the highest propensity to travel to long-haul destinations with around 430 long-haul trips for every 1,000 residents. This is likely to be due, in part, to the large number of long-haul destination options which residents in the region can access. It also reflects the large proportion of Auckland residents originally from Asia who will be visiting friends and relatives.
- Wellington (340 per 1,000) and Nelson (310 per 1,000) residents have the second and third highest propensities to travel long-haul, even though both regions currently have relatively poor connectivity to direct long-haul services.

Figure 3: Propensity for Long-Haul Travel by Region



Within the central New Zealand catchment, around 64% of the long-haul trips are to/from the Wellington region. The second largest generator of demand is Manawatu-Wanganui, contributing a further 10% of long-haul demand. 75% of the catchment market (342,000 passengers) is within two hours' drive of Wellington Airport.

Figure 4: Catchment of Wellington Airport's current long-haul passengers



Source: Statistics New Zealand Migration Data, Sabre ADI

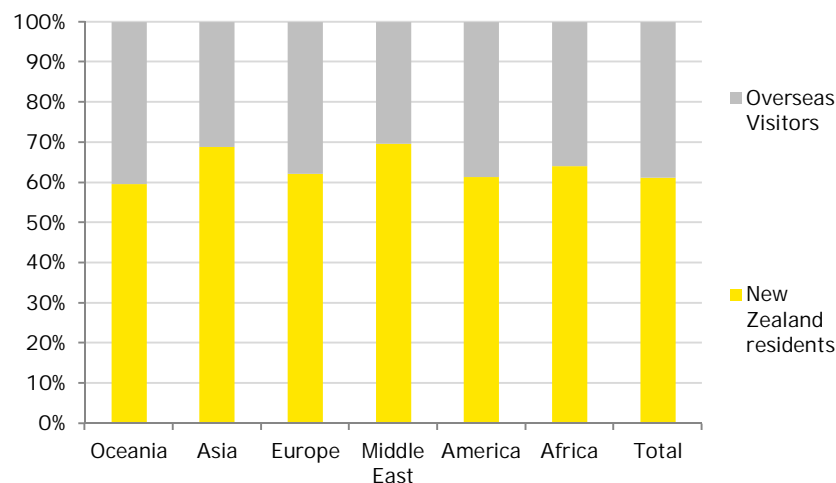
Currently more than 50% of residents from the Manawatu/Wanganui region (the second-largest generator of catchment long-haul demand) use Wellington for flights to Australia²⁸, even though half of the flights leave between 6-7am or arrive after 11pm with no connecting internal flights. The current timing of existing long-haul flights to/from New Zealand are primarily determined by schedules at an airline's primary hub. These services operate at times which would allow good connectivity with the Wellington catchment either via air or road.

²⁸ Statistics New Zealand Migration data

3.5.3. Visitor Travel

Wellington's current long-haul market has a higher proportion of resident than visitor travel. On average overseas visitors make up around 35% of Wellington's long-haul market (30% Asia, 40% Europe and 35% Americas). By contrast, the long-haul visitor proportion for New Zealand is 65%²⁹ (63% Asia, 69% Europe, and 60% Americas). This illustrates the high propensity for central New Zealand residents to travel, but a relatively undeveloped overseas visitor market.

Figure 5: Resident/Visitor split of international travel



Source: Statistics New Zealand Migration Data, Sabre ADI

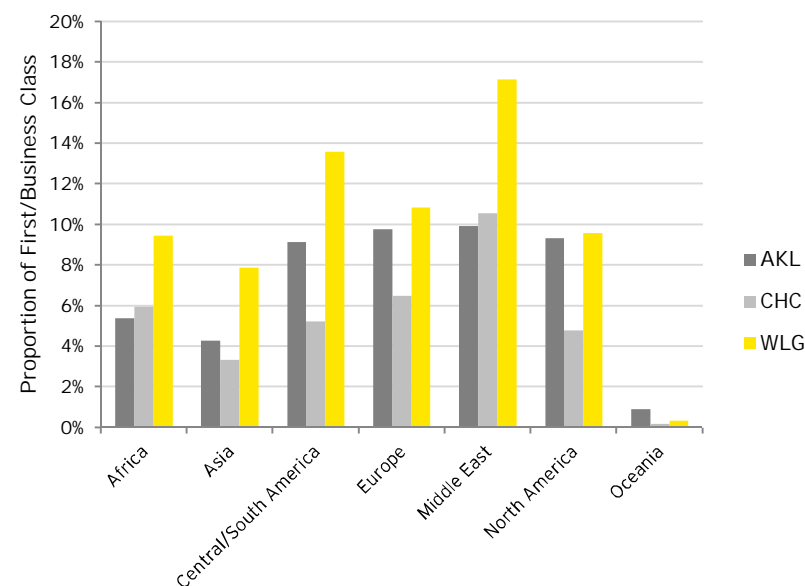
An improvement in international accessibility to central New Zealand, and the associated market development initiatives, would increase visitors to the region, with significant potential to bring the proportion of inbound visitors closer to the New Zealand average.

3.5.4.A High-Yielding Market

The Wellington market is high-yielding with a significant proportion of business/first class travellers. A market with a high proportion of premium travellers is attractive for an airline.

On average around 10% of long-haul travellers to/from central New Zealand are premium passengers, a higher proportion than Auckland and Christchurch.³⁰ The majority of these premium passengers fly economy between Auckland and Wellington, as the domestic air services market provides no other alternative. This can be an influencing factor for some high yielding passengers to choose not to fly through to Wellington.³¹ However, they may, in the future, contemplate a return journey to Wellington should a full business service offering be available.

Figure 6: Proportion of First/Business Class Travellers by New Zealand Airport and Region (2012)



Source: Sabre ADI

²⁹ Statistics New Zealand International Travel and Migration October 2013

³⁰ Sabre ADI

³¹ Source – informal discussions between Wellington airport and Wellington businesses.

3.5.5.Connectivity

Connectivity with overseas markets is a key driver for business activity. Table 2 shows the number of countries and population of these countries that are in direct and 1-stop access to New Zealand's largest cities.

Table 2: Countries and Population within 1-Stop of a New Zealand airport

City		Countries	Population (m)	% of world population
Auckland	Direct	18	2,275	32%
	Within 1 stop	56	5,222	74%
Christchurch	Direct	4	156	2%
	Within 1 stop	41	4,587	65%
Wellington	Direct	2	24	0%
	Within 1 stop	22	2,476	35%

Source: Statistics New Zealand Migration Data

- ▶ Businesses in Auckland have direct access to countries containing around 30% of the world's population and can travel 1-stop to around three-quarters of the world.
- ▶ By contrast, Wellington businesses have direct access to New Zealand's largest trading partner, Australia, and 1-stop access to around a third of the world's population.
- ▶ Christchurch's 1-stop access to 65% of the world's population illustrates the significant accessibility improvements that can be gained with a long-haul service to a large hub (in this case Singapore Airlines via the Singapore hub).

Passengers having to travel an additional domestic sector incur additional time and financial costs, which have the added impact of suppressing travel and constraining growth.

As shown in Table 2, currently the majority of Wellington's long-haul market must travel via another domestic airport (usually Auckland Airport) to leave New Zealand internationally. Table 3 shows that over 85% of central New Zealand's long-haul market does not leave from its closest international airport. By contrast, fewer than 1% of Auckland's catchment and around 55% of Christchurch's catchment use airports other than their closest.

Table 3: Proportion of long-haul flights where residents use their closest international airport

	Auckland	Wellington	Christchurch
Africa	99.3%	28.5%	73.8%
Asia	99.6%	15.9%	52.1%
Europe	99.5%	9.9%	60.3%
The Americas	99.8%	11.7%	11.3%
Total	99.6%	13.7%	45.2%

Source: Statistics New Zealand Migration Data

4. Approach

4.1. Scope of the analysis

This analysis assesses the net direct economic impact that would be realised within New Zealand and Wellington as a result of the enhanced international connectivity at Wellington Airport achieved through a runway extension.³² A high-level estimate of the likely scale of indirect and catalytic impacts is presented but has not been modelled.

Economic benefits of increased aviation movements

Direct – Employment and income generated as a result of the operations of the airport and airline services

Induced – “Offsite” organisations that support the operations and passenger flows as a result of the airport operations

Indirect – Income generated as a result of spending of incomes generated through the direct and induced economic activity

Catalytic – Income generated as a result of improved productivity and additional business activity attracted to the region.

In assessing the scale of impacts, we analysed the demand for three distinctive markets which would become accessible with an extended runway at Wellington Airport:

- ▶ Direct service to an Asian aviation hub
- ▶ Direct service to a North American hub
- ▶ Service via Australia from a long-haul provider not currently able to service the Wellington market

These strategic routes were considered under low, medium and high demand scenarios.

4.1.1. Wellington Airport catchment

Based on existing travel patterns (discussed in Section 3), Wellington Airport services a geographic area wider than the Wellington region, as defined by local

government boundaries. For the purposes of this study, EY defined a “Wellington catchment” which is a broader geographical area which can be understood as encompassing central New Zealand. Over 1.1 million residents live within this catchment including New Zealand’s second, fifth and eighth largest urban populations of Wellington/Kapiti, Napier/Hastings, and Palmerston North³³.

This catchment is an estimate of the area where Wellington Airport would be the closest airport with long-haul connectivity. As the location moves further away from Wellington Airport, EY has assumed that a decreasing proportion of potential passengers would use Wellington Airport as a long-haul gateway.

The scale of economic benefits has been calculated at the level of the Wellington region and the New Zealand economy.

4.2. Assumptions to the analysis

A number of assumptions have been incorporated into the analysis including:

- ▶ Long-haul international flights would not occur in Wellington in the absence of a runway extension
- ▶ The runway is operational at the existing Wellington Airport location from 2020 and long-haul services can begin immediately
- ▶ Increases in the number of international passengers travelling to Wellington will grow in line with projected increases in total increases in international passenger movements to New Zealand³⁴
- ▶ There is no material change in the technological advancement of aeroplanes (i.e. ability to operate with significantly shorter take-off and landing distances), or change in fleet other than that which is currently projected
- ▶ Diverted passenger movements from other New Zealand airports (i.e.: international passengers to/from Wellington who would have transited through Auckland or Christchurch) would not adversely impact on the viability of either the domestic or international services

³² “Direct economic impacts” includes direct impacts and induced impacts, as shown in the text box Economic benefits of increased aviation movements.

³³ Statistics New Zealand estimated resident population 2010 (latest with an urban breakdown)

³⁴ Tourism NZ

- ▶ There is no net difference in the expenditure or profits retained within New Zealand regardless of the airline an individual uses. In other words there is no net impact on New Zealand's economy with regards to which airline carrier provides the service (i.e. it does not take into account the benefit of Air New Zealand services over that of other service providers)
- ▶ Wellington is seen by the international tourist market as a distinct destination for induced aviation demand rather than purely a complementary service to Auckland/Christchurch – i.e.: improved connectivity to Wellington will induce international tourism. Over the last 3 years, Australian visitors to Wellington airport have increased by 26%, stimulated by increases in capacity on Wellington's only direct international services. This rate of increase is almost twice as fast as experienced at Auckland airport, and four times as fast as the total increase in Australian visitors to New Zealand.³⁵
- ▶ Airports and airlines operate in a competitive market with manageable barriers to market entry. The modelling assumes sufficient supply to meet projected demand based on market growth forecasts and the expected traffic capture rate of direct services.

4.3. Limitations to the analysis

The following limitations apply to the study:

- ▶ The study focuses on the economic impacts of services enabled by the runway extension and does not include an assessment of the economic impacts of the construction itself.
- ▶ There will be social impacts for neighbouring areas, including additional noise, from the runway extension and the additional traffic it generates. The detailed consideration of these effects was outside of the scope of this analysis. However, these wider impacts would be considered in detail through the resource management approvals processes.

4.4. Approach

In order to determine the economic impacts of enhancing international connectivity for the Wellington region, we had to understand:

- ▶ The level of demand for long-haul services (strategic demand) at the level of the catchment
- ▶ The economic benefits that would flow from long-haul services – these were assessed both quantitatively at the level of Wellington region and New Zealand and qualitatively (where quantification was not possible or likely to be inaccurate).
- ▶ The likely scale of indirect and induced benefits. These were not quantified in this study but a comparator with other studies provides an indication of the likely quantum of benefit

Our approach to the analysis for each of these stages is set out below. Further detail can be found in the technical annex.

³⁵ Statistics New Zealand migration data (YEspt 2010 vs YEspt13)

4.4.2. Strategic demand analysis

In order to assess the scale of economic benefits from a runway extension, it was necessary to analyse the likely response for the supply of and demand for long-haul air services to/from Wellington.

4.4.2.1. Passenger demand

Without a runway extension, the option of long-haul flights directly from Wellington Airport does not exist and the opportunity for 5th freedom services via Australia using larger aircraft is restricted. Yet there are already large numbers of passengers who travel internationally to/from Wellington and do so through connecting to a long-haul service at another airport – usually Auckland Airport, but also Christchurch, Melbourne, Brisbane and Sydney airports.

Figure 7 summarises the approach that was taken to assessing the likely level of demand for long-haul services. The methodology applied within this analysis conforms to our understanding of market precedents. Further discussion of this is set out in Section 5 of this report.

A critical assumption was the load-factor that would be required for viability.

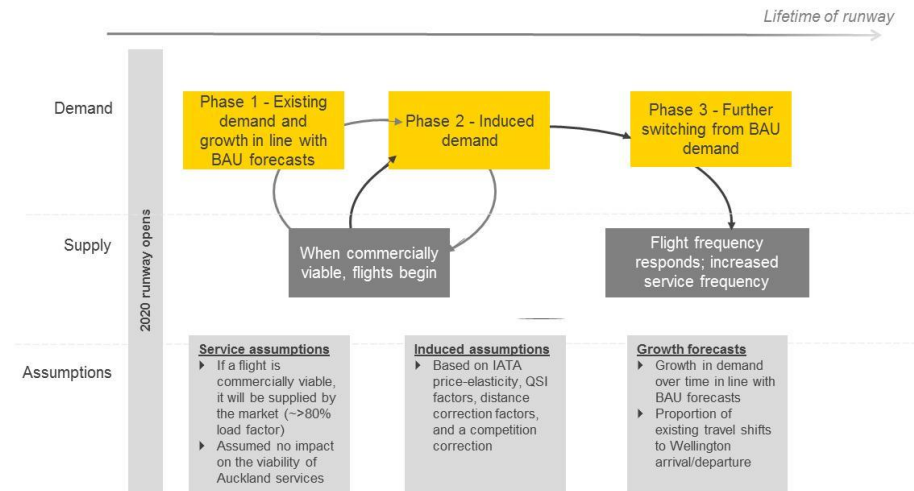
- ▶ Long-haul services: The number of long-haul international services that would be provided from Wellington airport to the proposed destinations was determined over the analysis period based on the above calculated level demand assuming that the service would require a loading greater than 80% to be commercially viable³⁶ (the equivalent of approximately 220 passengers on a 275-seat aircraft). Furthermore it was assumed that a minimum of three services per week would be required before a viable service would commence (i.e. a total of 660 passengers per week in each direction).

- ▶ Fifth-freedom services: Airlines schedule services to optimise connecting traffic through their hubs, and this can sometimes result in extended time on the ground in Australia allowing the airline to operate a service to New Zealand within their schedule. In these cases, the cost of flying the Tasman sector is primarily the incremental fuel and crew (the aircraft ownership/depreciation cost will have been apportioned to the Australian long-haul sector). This significantly reduces the break even cost of the incremental trans-Tasman service. An airline can choose to operate the route at lower fares and/or lower load factors relative to point-to point trans-Tasman services to still return a profit, and in turn significantly stimulate the short-haul and long-haul markets. An extended runway would enable most wide-bodied aircraft to connect to Wellington on Trans-Tasman sectors. We have assumed that this service would only require a 65% passenger loading to be commercially viable, consistent with existing fifth-freedom services³⁷.

³⁶ EY assumption based on industry consultation (known and widely used parameters)

³⁷ Australian Government – Bureau of Infrastructure, Transport and Regional Economics

Figure 7: Approach to assessing strategic demand



Phase 1: Levels of existing PAX demand and growth

- ▶ The base level of demand for international aviation services to and from Wellington to a range of international destinations was based on current demand (based on information from Statistics New Zealand and Sabre Airport Data Intelligence), and projected business-as-usual increases in demand, by New Zealand residents and international tourists (BAU). This base-level demand includes both people who would fly into/out of Wellington directly from overseas, as well as those who would continue to fly into Wellington from other parts of New Zealand.
 - ▶ To estimate the proportion of the base demand that could fly into/out of Wellington directly, a number of factors were considered including existing and induced demand for the service, competition, relative distance of a proposed route and the number of services being proposed to the relevant destination (on a weekly basis)

Phase 2: Induced PAX demand

- ▶ The provision of additional international aviation services and improving the connectivity (through reduced time and/or cost) between countries will induce a level of international tourism demand. The induced demand for aviation services for each route, and both primary and secondary

markets, was determined based on the International Air Transport Association (IATA) induced demand curve. This curve models the demand response to the introduction of a new service that connects markets with direct travel options in place of indirect flights. A number of factors underpin the historically observed demand response, including:

- ▶ Increased convenience of a direct or one-stop long-haul service compared with one-stop or two-stop services
- ▶ Increased profile as the direct destination in a source market. Much of this will happen by virtue of the route now existing as an option e.g. it will be more prevalent in internet searches; travel agent advice; departure boards at international airports. In addition, as part of route marketing, airlines servicing the destination are likely to actively promote it as a new destination and provide connectivity through large networks.
- ▶ The induced demand for a long-haul service via Australia was determined based on alternative price changes, and the relative price elasticity of passengers, which would result from increased competition on this route, as well as consideration of long-haul markets which would be more accessible with the service.
- ▶ In estimating the level of induced demand, competitive factors were also taken into account to reflect the reality that passengers would continue to have the choice of which route they choose to fly. This 'correction' took into account the relative competitiveness of a service to/from Wellington airport to an aviation hub in Asia or North America based on the relative connectivity between this service (number of stops, and total distance travelled) and alternatives to the final destination of the passenger. Furthermore, a 'cap' was placed on the proportion of the existing market that an airline could capture, given some passengers would have a preference to travel on connecting services, where these may be cheaper or provide alternative benefits that direct services may not.

Phase 3 -Further PAX switching/increased demand.

- ▶ Over time, we would expect to see increased frequency of services as supply increases in response to increasing levels of demand. A more frequent service would appeal to a wider range of passengers and provide increased attractiveness relative to connecting to an onward flight.

Induced demand – the evidence

All new routes stimulate the point-to-point markets they serve. In many cases they provide an air connection that was not physically available previously, or was perceived as being complex or unavailable. They bring new destinations into the catchment residents' set of choices which generates demand from new users. Passengers who travel occasionally within the market increase their propensity to travel as associated costs (time and monetary) are significantly reduced. New marketing initiatives by airlines and other tourism agencies bring awareness to the service and the new opportunity for travellers.

The stimulation effect varies from market to market, and it is different between network carriers and low cost airlines. Market stimulation percentages in the thousands of percent are frequently observed where low cost services are introduced on new point to point markets.

To model and predict growth expectations, the International Air Transport Association has developed a generic stimulation curve designed to predict the behaviour of markets to the introduction of a new operation. The curve is a culmination of an assessment of a multitude of new routes started from Munich Airport which tracked the market response to the introduction of new services using the IATA airline network. The curve illustrates the level of stimulation that a new route would be expected to attract, given the size of the existing indirect market. The smaller the indirect market prior to new service introduction, the larger the stimulation effect experienced when the direct service is introduced. The IATA curve indicates that small indirect markets can be stimulated by 300%, and even relatively sizeable markets of 20,000 can benefit from a stimulation of some 200%. Much larger markets such as ones over 100,000 indirect passengers tend to be stimulated by between 4% and 8%.

Analysis of new direct services to New Zealand shows a close correspondence to the IATA curve, and there are many examples where there has been significant increase in inbound travel as a result of new services, even when a market is served to New Zealand via another airport:

- ▶ Air Asia X commenced a 4/week service between Christchurch and Kuala Lumpur in April 2011. Malaysian visitors to New Zealand increased from 20,700 in 2010 to 33,300 in 2012 (+60%) - the market had remained flat over the previous 10 years. This growth in visitors occurred even though the New Zealand-Malaysia market was already served by direct services to Auckland and Christchurch also had good connectivity to Malaysia via Singapore.
- ▶ Hawaiian Airlines began direct services between Auckland and Honolulu in March 2013. The market was already being directly served by Air New Zealand, but a significant amount of stimulation has still occurred with a new airline offering differential products and appealing to a different set of (predominantly American based) loyal passengers. Since commencement, Hawaiian visitors to New Zealand have increased by 40% (Stats NZ migration data).
- ▶ China Southern began Auckland-Guangzhou in April 2011 – Chinese visitors to New Zealand have doubled from 115,000 in 2010 to 236,000 in the year to Sep13, and even visitors from Shanghai already served by Air New Zealand have been stimulated via connecting on the China Southern service.

City to city market impacts have experienced a much larger stimulation of visitors than shown here given their pre-stimulated market was a proportion of the New Zealand total.

Source: Statistics New Zealand Migration Data

4.4.2.2. Freight

Most aviation freight is carried on passenger services via direct routes to key trading partners in Asia and North America. The lack of wide-body aircraft servicing Wellington means that aviation freight within the central New Zealand area is typically trucked via road to/from Auckland, adding time and cost to, what is by its nature, time-critical cargo.

The total movement of export and import freight that is generated from the Wellington catchment area that could be exported via Wellington Airport (rather than Auckland airport) was calculated based on:

- ▶ the macro economic output within the Wellington airport catchment;
- ▶ the proportion of total expenditure nationally that is import/export related; and
- ▶ the proportion of exports/imports from New Zealand that are transported by aviation services to those areas that would be serviced with the introduction of long-haul services at Wellington Airport.

This analysis found that, from a macro economic sense, there would appear to be the potential to increase the amount of goods that are imported/exported to/from the region via air. The scale of benefits from air freight transportation is subject to the length of the runway extension, the types of aircraft that would be operated and the destinations they would be flying to. For example, New Zealand's largest trading partner, Australia, could be served by passenger aircraft that could carry a full freight payload (25 tonnes), or with dedicated freight aircraft that could carry more than twice this amount.

This analysis took a conservative approach and assumed that:

- ▶ approximately 10 tonnes of dedicated freight cargo capacity per flight would be available
- ▶ the provision of services would be in response to passenger demand (as discussed above)
- ▶ no operation of dedicated freight services

In this context, and given the projected number of flights, only marginal economic benefit would be provided to the region and wider catchment. However, a longer extension, better performing aircraft and closer destinations could significantly increase the freight capability.

While we recognise there are a range of other factors that would be taken into account in the demand for aviation freight services (including the scale, reliability and price of services), given the marginal benefit that this service will provide to the economy we have not undertaken further analysis.

4.4.2.3. Sensitivity testing

In order to understand the sensitivities around demand, a range of scenarios were considered – Low, Medium and High. The demand assumptions are the key variant in these scenarios.

4.5. Economic impacts

This analysis involved the measurement of all changes in direct, incremental expenditures (and productivity changes) to the Wellington and New Zealand economies which are expected to occur as a result of induced aviation movements to Wellington as a result of improving the international connectivity of the city. These direct impacts were captured in terms of both output and value-added (defined as the economic value of the additional output).

In order to determine the expenditure impacts of proceeding with the development and the associated increase of aviation capacity in the region beyond underlying growth expectations and existing expansion plans, the following economic impacts were quantified:

- ▶ International tourism (induced) – an increase in the number of tourists that visit New Zealand as a result of improved connectivity to New Zealand and increased expenditure in the Wellington region.
- ▶ Business passengers – productivity savings to existing business travellers based in the Wellington catchment as a result of reduced waiting and flying time from avoiding the need to transit through hubs such as Auckland
- ▶ International students (subset of international tourists) – an increase in the number of students that would choose to study in Wellington as a result of improved transport connectivity
- ▶ Freight – Productivity improvements realised by Wellington regional businesses as a result of more efficient access to international markets. These businesses would have otherwise had to truck goods to/from Auckland airport
- ▶ Aviation benefits – economic gains to the airport and aviation industry associated with greater induced demand for aviation and airline operations, including retail operations.

Different impacts from different passengers

The number of passengers that would use direct international services subsequent to the development of a runway extension can be divided into two categories:

Diverted travel movements – are those people that would have otherwise come to New Zealand and Wellington but now choose to do so via Wellington Airport (i.e.: would have otherwise have come to New Zealand via Auckland or Christchurch airports or an Australian airport)

Induced travel movements – are those persons that would have not travelled to New Zealand had it not been for the provision of direct international services to Wellington airport

Diverted travel movements will impact on the regional economic benefits but may not have a national impact (as these passengers would already have come to New Zealand).

Induced travel movements will impact on both regional and national economic benefits, as these passengers are bringing additional expenditure to the New Zealand economy.

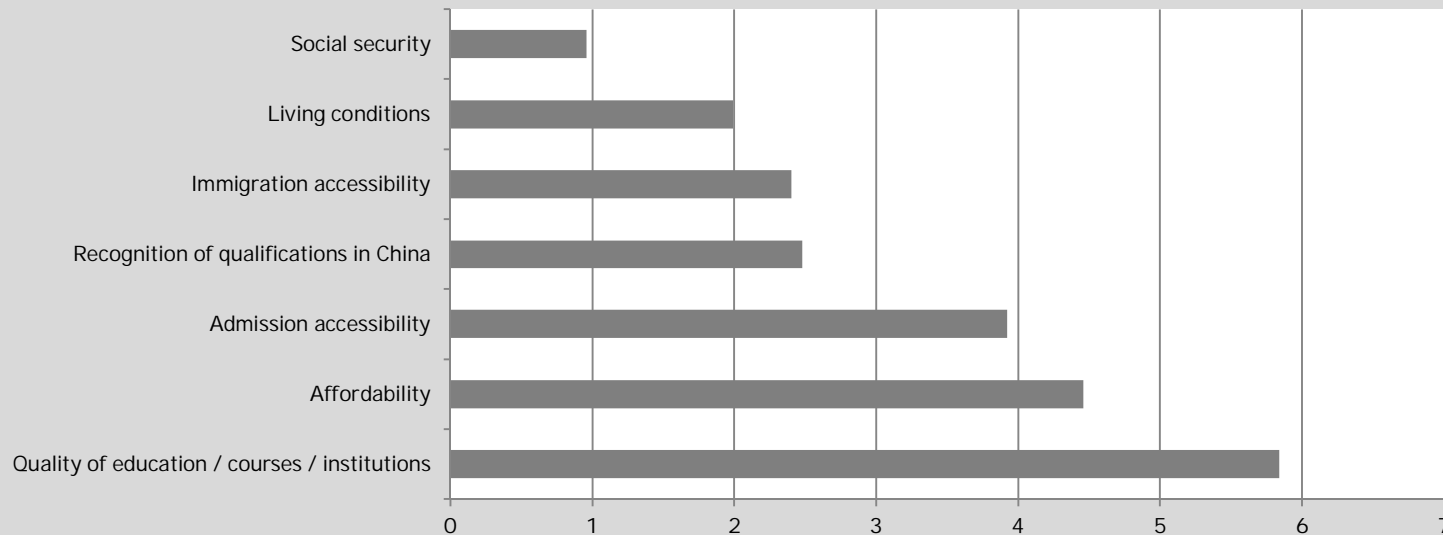
International students' decision-making

There is limited research into the impact of international connectivity on the decision-making processes that international students undertake when choosing where to study. A recent EY study of Chinese students undertaken for Education NZ (*Market Research on International Education of China*, EY for Education NZ, July 2013) provides recent market-based research of the decision-making process undertaken by Chinese students and their families in considering overseas study at a school, undergraduate and postgraduate level.

Key factors affecting choice of destination

The EYU study concluded that the balance between perceived value and cost are key drivers. A number of factors are taken into consideration when making the decision to study abroad, as set out in the figure below. Quality of education/courses/institutions and affordability are the most significant factors.

Figure 8: Key factors affecting your choice of education destination



Subject choices and Wellington's comparative advantage

The most popular fields of study for the Chinese students are economics, management, and finance majors, followed by engineering, architecture and IT. Students attach more importance to the choice of schools before they choose a major. The academic excellence and research capabilities in science related majors are not widely known by Chinese students.

Likely impact of improved connectivity

International connectivity/ease of travel does not come up but awareness and profile of countries and institutions are important. The study concludes that the Chinese, generally, have low awareness of NZ, especially as an education destination. The increased profile for Wellington from international connectivity will also impact positively on the profile of Wellington as a destination for study. Increased recognition of Wellington's tertiary institutions in international rankings will also be critical.

The table below highlights how these benefits are incorporated into the analysis of the net impacts of the runway extension to Wellington and New Zealand respectively. All sources and data used to calculate these benefits set out in the Technical Annex.

Table 4: Quantified economic benefits

Form of benefit	Benefit to Wellington region	Benefit to New Zealand
Tourism expenditure	Proportion of induced international PAX spend within region Diverted international PAX to region and additional nights/expenditure	Induced international PAX spend throughout NZ
Business productivity benefit	Reduced flying and waiting time for NZ business persons travelling internationally	Same as benefit to Wellington
Student tourism	Additional international students choosing to study in Wellington Expenditure on studies and living expenses over the year	A small proportion of the total number of international students that would switch to studying in Wellington would be from other destinations outside of New Zealand (i.e.: Australia). The expenditure of these students would represent a benefit to the New Zealand economy as they would be 'new' to New Zealand.
Freight productivity benefits	Effective reduced transportation time of freight within Wellington region Limited by the potential supply of freight related services	Same as benefit to Wellington

Form of benefit	Benefit to Wellington region	Benefit to New Zealand
Aviation related expenditure	Expenditure on aviation related services (airport and airlines) associated with additional PAX	Same as benefit to Wellington (assumed no net loss of PAX throughput and related aviation expenditure for Auckland or Christchurch)

In addition to those benefits that could be quantified, a wider range of benefits was also considered. These were either unable to have monetary values attached to them, or to do so would have been misleading and incorrect, given data limitations. These benefits were identified through a literature review and through informal stakeholder engagement carried out with a small number of Wellington stakeholders.³⁸

The other benefits that were considered include:

- ▶ Business competitiveness and investment
- ▶ Connectivity to new markets and opportunities
- ▶ Trade and investment in Wellington and New Zealand
- ▶ International promotion of the Wellington and New Zealand "brand"
- ▶ Migration to Wellington

³⁸ Stakeholders included Wellington City Council; Absolutely Positively Wellington; Wellington Regional Council; Grow Wellington and Wellington Employers' Chambers of Commerce.

5. Strategic demand analysis

5.1. Strategic Demand Analysis

In order to be viable, a long-haul air service would require 220 passengers per day to use the service in each direction. This passenger volume represents an industry average load factor of 80%³⁹ on a medium sized wide-body aircraft capable of accommodating 275 total passengers. Existing travel patterns show that the Wellington passenger market contains a high proportion of business travellers relative to other New Zealand centres, making it an attractive market from an airline profitability perspective. Given this economic incentive, the analysis assumes that services would be viable where market demand is sufficient to sustain a minimum service level of three flights per week at 80% load factors.

As set out in Section 2 of this report, this report considers a series of demand scenarios.

5.1.1. Application of methodology

Section 4 sets out the approach taken to the strategic demand analysis and some key results are set out below in Table 5. This shows that:

- ▶ By 2020, on current trends, approximately 104,000 passengers will be travelling to an Asian hub and a further 74,000 passengers to a North American hub.
- ▶ Assuming a load factor of 80% to be viable (equivalent to approximately 220 passengers), sufficient underlying demand exists in the Wellington catchment to support the provision of 4 flights per week to an Asian hub and 3 flights a week to a North American hub. In other words, the level of demand across these two strategic routes is sufficient to mean that, on average, a long-haul flight on one or the other of these routes would arrive/depart Wellington each day.

The induced demand that would be generated from the provision of an additional service provided by a long-haul carrier flown via an Australian airport was calculated based on the elasticity of price based on an assumed level of competition that would be realised in the market.

- ▶ As induced demand begins to grow, airlines are likely to respond by providing additional routes and/or service frequency.

5.1.2. Detailed analysis of services and capacity

Under all scenarios, services are commercially viable on Asian and North American routes from 2020, with at least a daily return service when the demand for combined strategic routes is assessed. In the medium and high scenarios, additional capacity is also viable on the Trans-Tasman route, assuming this route connects to onward long-haul services. Given the current airline operators within the Australasian market, this study assumed the Trans-Tasman capacity is provided through a new competitor to the Trans-Tasman market.

In the medium scenario, these additional services across all the routes would result in an additional capacity of 297,000 passengers per annum in 2020 with approximately 240,000 passengers utilising these direct services.

Over time, as a result of global demand growth for air-services, and as the impact of induced demand on the Wellington route begins to take effect, a steady growth in the number of international services that will be commercially viable through Wellington Airport is expected. This would see between 16 and 33 additional return flights per week by 2060 in the low and high scenarios respectively.

Christchurch Airport – an indicator of the sustainability of international services

Christchurch has a slightly smaller urban and catchment population than Wellington Airport, a smaller economic footprint, and is predominately a lower yielding leisure market. Conversely, Christchurch attracts more overseas visitors as the gateway to the (lower) South Island, partly due to the existence of long-haul services to Asia (Singapore Airlines, Emirates) and one-stop connections to Europe.

³⁹ IATA July 2013 YTD International Global Passenger Load Factor 79.2% (Asia-Pacific 79.5%)

Table 5: Additional Services and capacity for wide-bodied aircraft to/from Wellington airport

	Low scenario			Medium Scenario			High Scenario		
	2020	2040	2060	2020	2040	2060	2020	2040	2060
Total number of services (per week)									
Asia	4	7	10	4	8	12	4	9	15
Trans-Tasman	0	0	0	3	4	5	4	7	10
North America	3	4	6	3	5	7	3	5	8
TOTAL	7	11	16	10	17	24	11	21	33
Total capacity ('000 seats pa)									
Asia	119	207	296	119	237	356	119	267	445
Trans-Tasman	0	0	0	89	119	148	119	207	296
North America	89	119	178	89	148	207	89	148	237
TOTAL	208	326	474	297	504	711	327	622	978
Total demand ('000 PAX pa)									
Asia	104	177	255	105	191	289	107	219	357
Trans-Tasman	0	0	0	60	81	109	93	139	206
North America	74	105	154	75	121	178	76	124	193
TOTAL	178	282	359	240	393	576	276	482	756

Figure 8: Forecast number of services - Medium Scenario

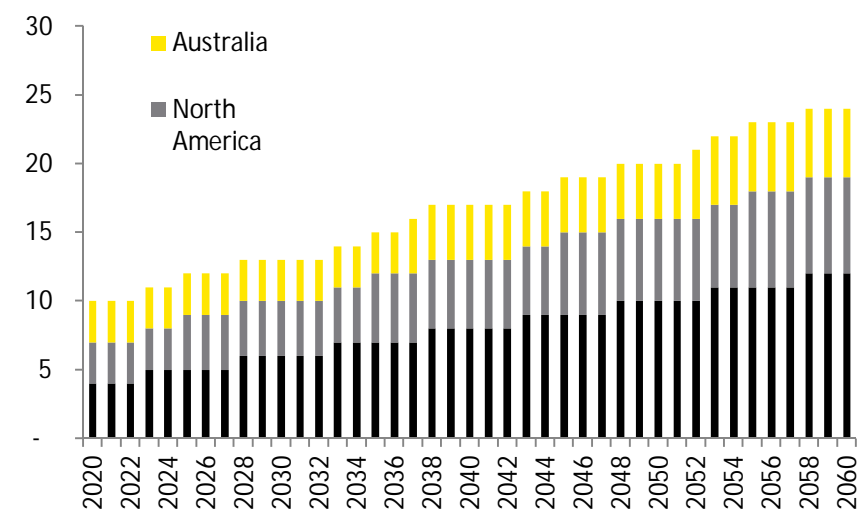
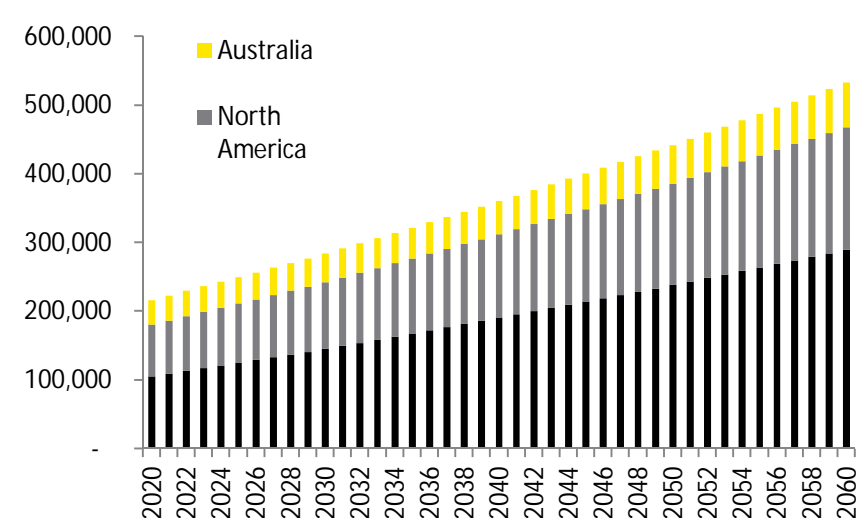


Figure 9: Forecast number of passengers - Medium Scenario



5.1.3. Australasian comparators for passenger demand

As indicated in Section 4, we consider that the methodology applied within this analysis conforms to our understanding of market precedents. The results of this analysis are broadly consistent with international aviation demand and services provided globally.

Table 6 sets out the passenger throughput and growth in international passengers of a number of Australasian airports of a similar size to Wellington Airport.

Table 6: Passenger throughput at comparably-sized Australasian airports

Airport	Domestic PAX ('000)	International PAX ('000)	Total	International PAX growth in last 10 years
Adelaide	6461	709	7171	243%
Gold Coast	4993	882	5805	649%
Cairns	3640	516	4156	-31%
Darwin	1612	313	1925	251%
Christchurch	4156	1324	5481	30%
Wellington	4640	727	5367	63%

This table supports the contention that international services can be successfully supported with similar levels of total passenger throughputs as seen in Wellington.

Furthermore the demand for these services has shown continued and significant growth over the last 10 years (with the exception of Cairns as a result of the

sharp decline in Japanese air capacity and passenger travel experienced in 2009).

Canberra International Airport – expansion of international services

Canberra Airport has recently completed the development of a new international terminal which will soon commence operations.

The airport, servicing the predominantly public serviced based population of just over 350,000 people currently realises just over 3 million passenger flights per annum with around 163,000 people visiting the ACT from overseas each year, a significant portion of whom are international students from south-east Asia studying in Canberra.

The airport operator, in conjunction with the State Government, has invested heavily to lobby for international flights in and out of Canberra, with their first goal to secure six return flights to New Zealand each week by the time the airport's western concourse is open, which is intended to be followed by flights between Canberra and Singapore.

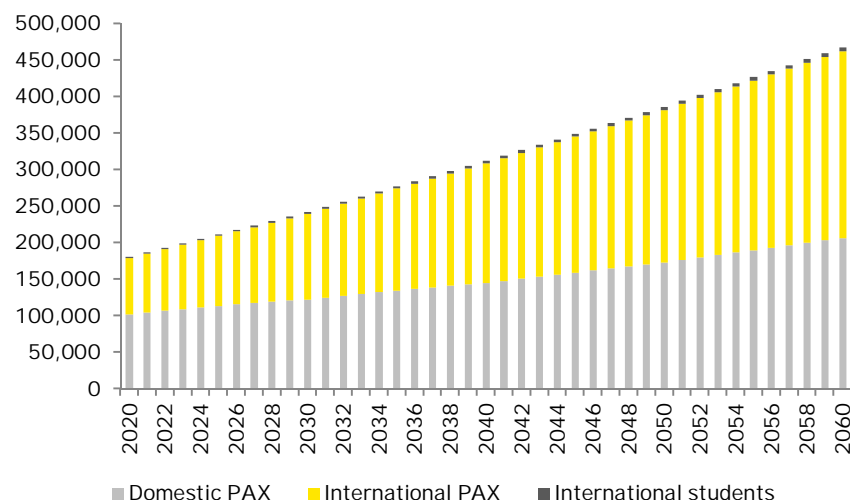
"Direct access from Singapore would not only provide the opportunity to grow the value of the education market to the ACT, but also make it easier for visiting friends and relatives of students to access Canberra."

ACT Minister for Economic Development; The Honourable Andrew Barr

5.1.4 Passenger types

Over the analysis period, as a result of increased international tourism, the proportion of international tourist movements relative to total movements would change dramatically. Currently approximately only 40% of international aviation movements to/from the Wellington catchment are from international tourists⁴⁰. This is expected to rise to around 50% by 2030 and to around 60% in 2060.

Figure 10: Passenger demand by type from Asian and North American service- medium demand scenario



Of these passenger movements, in 2020 approximately 77,000 would be international tourists. Of these, approximately 1,500 of these movements would be undertaken by international students.

5.1.5. Freight demand

The strategic freight analysis found that there was sufficient demand from exporters/importers within the region to exceed the level of supply that would be provided by additional long-haul flights.

It was estimated that with the level of supply of long-haul services into and out of Wellington conservatively (see Section 4.4.2.2) result in up to 7,000 tonnes of goods exported/imported annually in 2020 rising to 25,000 tonnes per annum by 2060.⁴¹ 25,000 tonnes is equivalent to 3,800 truck movements (at average load of 6.6 tonnes⁴² which could be served via Wellington, rather than travelling further with longer time/higher cost to/from Auckland.

Freight assessment

Wellington airport currently underserves the region's businesses with the movement of imports and exports.

As can be seen in the table below Central New Zealand¹ currently contributes to approximately 30% of GDP, whilst the ports in the region move only 7% of the exports and imports out of the country with only negligible international freight movements (notably to Australia)

Table 7: New Zealand freight characteristics

Region	Proportion of GDP	Proportion of exports via port	Proportion of exports via air
Northern	51%	85%	82%
Central	29%	7%	0%
Southern	20%	9%	18%

Source: Stats NZ

Note: 2010 GDP estimates, 2012 export/import estimates

By not providing the necessary infrastructure to support the export industry would have wide ranging impacts on industries within the region (i.e.: cost of goods transported via land to Auckland)

Notably failure to provide a sufficient service could result in an increase in the cost of production and thus will be negatively impacting on the international competitiveness of the products produced within the region. Furthermore this will also increase the cost of living within the region.

⁴⁰ Statistics New Zealand Migration Data, Sabre ADI

⁴¹ Medium case estimate

⁴² Booz Allen Hamilton, Development of National Freight Matrix, Land Transport Research Project 2005)

6. Economic Impact Results

6.1. Introduction

This section sets out the economic impact arising from the demand scenarios set out in the section above.

6.2. Direct Impacts - quantified

Positive economic impacts will be felt from 2020 when the runway is constructed. Table 6 summarises the scale of impacts.

Gross value add: A productivity metric that measures the difference between output and intermediate consumption. Gross value added provides a dollar value for the amount of goods and services that have been produced, less the cost of all inputs and raw materials that are directly attributable to that production. The sum of value-add in an economy is equivalent to GDP. In other words the value of the economic inputs of labour, capital and some indirect taxes.

Expenditure: A measurement of the size of the economy based on the value of final goods and services consumed by households, government and the rest of world (exports), plus spending on investment goods and changes in the value of inventories.

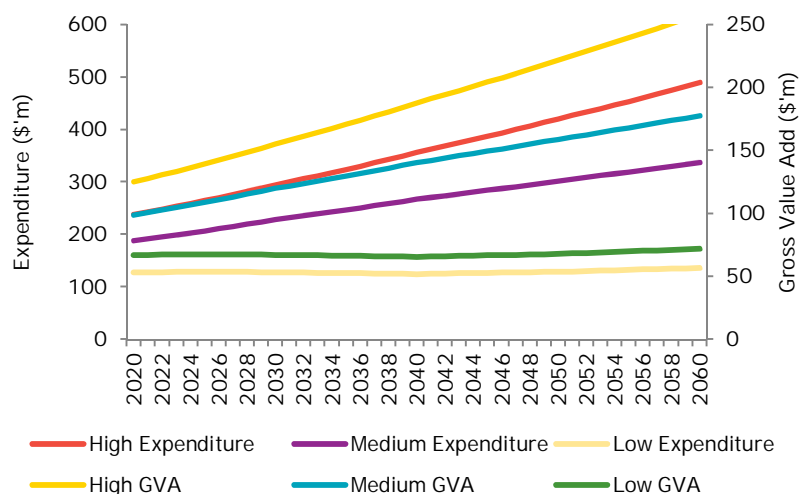
Table 8: Estimated direct economic impact of runway extension (\$m 2013)

	2020	2040	2060	NPV
Expenditure				
<i>Low</i>				
Wellington region	51	70	94	676
New Zealand	127	124	136	1,358
<i>Medium</i>				
Wellington region	63	107	154	959
New Zealand	188	267	337	2,523
<i>High</i>				
Wellington region	76	139	214	1,225
New Zealand	238	357	490	3,323
Gross value add				
<i>Low</i>				
Wellington region	29	40	55	389
New Zealand	67	65	72	714
<i>Medium</i>				
Wellington region	35	60	86	534
New Zealand	99	140	178	1,327
<i>High</i>				
Wellington region	42	78	120	684
New Zealand	125	188	259	1,751

6.2.1. National economic impacts

At a national level, increased international connectivity to Wellington will result in between \$127m and \$238m additional expenditure in the national economy in 2020 and between \$67m and \$125m additional Gross Value Add in the national economy in 2020. Over the analysis period, this is expected to increase to between \$136m and \$490m in expenditure and \$72m and \$259m in Gross Value Add.

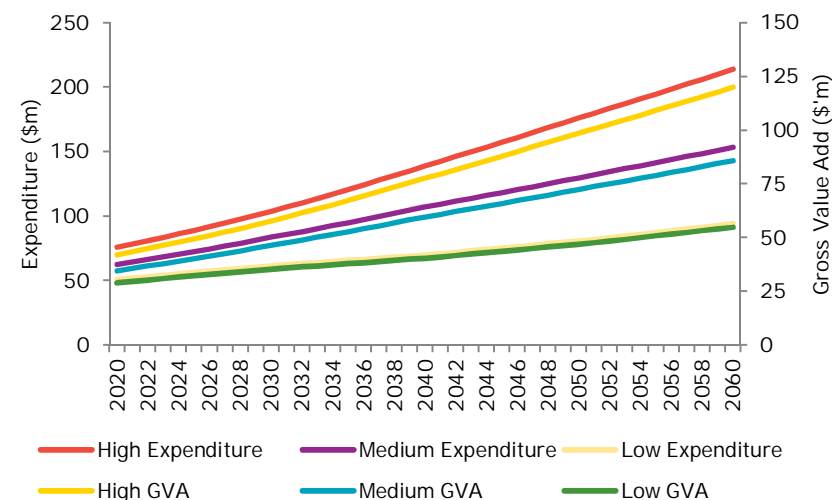
Figure 11: New Zealand economic impacts



6.2.2. Regional economic impacts

The development of the runway is expected to result in between \$51m and \$76m additional expenditure in the Wellington regional economy in 2020. This is expected to increase to between \$94m and \$214m by 2060. This will result in between \$29m and \$42m Gross Value Add retained in the region by 2020 and increase to between \$55m and \$120m by 2060.⁴³

Figure 12: Wellington runway extension economic impacts



Over the 40 year assessment period in this report, assuming a 6% discount factor⁴⁴, this gives a net present value of Gross Value Add between \$714m and \$1,751m at a national level, and \$389m and \$684m at a regional level.

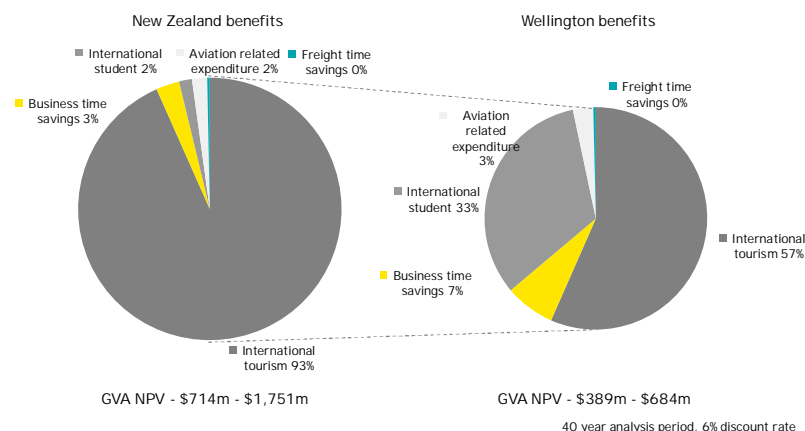
⁴³ All values are in 2013 dollar terms

⁴⁴ Source: NZ Transport Guidelines, published by NZTA

6.3. Forms of Economic Benefits

As the previous section has established, the runway extension brings economic benefits to both the Wellington regional economy, as well as the national economy. However, the forms of benefits and proportional impact play out differently at a regional and national level.

Figure 13: Forms of economic benefits for New Zealand and the Wellington Region



Additional international tourism expenditure is the greatest driver of the benefits to the New Zealand and Wellington economies, both in absolute terms (\$1,239m and \$289m respectively⁴⁵) and as a proportion of total benefits (93% and 57% respectively).

- ▶ The greater share of tourism benefits accrues nationally, rather than to the Wellington region, because, on average, tourists will spend the majority of the time and expenditure outside of the Wellington region (approximately 80%)⁴⁶. Wellington will be the gateway for these tourists to enter New Zealand. With increased ease of access to the Wellington region than previously available, international tourists will be more likely to spend more days and, as a consequence a greater proportion of their

⁴⁵ NPV GVA terms (40 year analysis period, 6% discount rate) Medium case estimate

⁴⁶ New Zealand Tourism

expenditure, within the region than if they entered the country via Auckland or Christchurch).

- ▶ Clearly, international visitors can already visit Wellington via onward connections from other airports and many already do, with Wellington already capturing 4.3 million international visitor nights per year. However, the existence of direct services to Wellington will induce more tourist traffic than if the only option remained a connecting flight. Direct flights open up the opportunity of new itineraries throughout central New Zealand that provide a different/ more accessible tourism experience than currently available. And the opportunity to provide full business services through to Wellington and reduced travel time will also increase its relative attractiveness.
- ▶ Wellington also benefits significantly from attracting more international students to the region.
 - ▶ There is limited research into the impact of international connectivity on the decision-making processes that international students undertake when choosing where to study.
 - ▶ For the purposes of this study, EY has assumed that, of those students who choose to study in Wellington because of the enhanced international connectivity, a large proportion of these would be diverted from elsewhere within New Zealand. In other words, these students would have studied in New Zealand anyway, but the relative attractiveness of Wellington over Christchurch or Auckland has increased. The expenditure of these students would not be of additional benefit to New Zealand but would be of regional benefit.
 - ▶ We have assumed that there would be a small uplift in the total number of students that are newly attracted to New Zealand to study (i.e. net impact at a national level), drawn particularly through the increased profile of Wellington as a destination. This will be realised through the increased competitiveness of Wellington and its Universities as a place to study but also increasing the available international student placements that would be made available at other Universities across New Zealand

- ▶ Given the significance of international students to the regional economy and the national goals to increase international student numbers, this is an area where further primary research into the drivers of students' decision-making would be valuable.
- ▶ As highlighted above, there is clearly a level of unmet demand for aviation freight services within the Wellington catchment. The length of the runway extension and the destinations served by large aircraft will determine the extent to which this freight demand can be satisfied. Notwithstanding this, additional international airfreight will be able to be transported via passenger services which will go some way to supporting the international competitiveness of high value export businesses within Wellington.
- ▶ The activity of Wellington businesses in overseas markets is currently restricted by poor accessibility and a lack of connectedness, although it is not possible to quantify the scale or impact of these restrictions. This report does not attempt to quantify the benefits of enhanced connectivity to business, but improved connectivity to world markets (particularly the growing economies in Asia) would be expected to enhance the opportunities for New Zealand businesses overseas and for investment in central New Zealand.
- ▶ Countries with less than 1% of the world's population can fly directly to Wellington (compared with 32% to Auckland), and only 35% are within 1-stop of Wellington (via Auckland or Sydney).
- ▶ A direct service to Singapore would double the proportion of the world's population that can access Wellington in one-stop (from 35% to 65%),
- ▶ A direct service to China would have direct links to countries forming 20% of the world's population.

Table 9: Countries and population within one-stop of New Zealand airports

		Countries	Population (m)	% of world population
Auckland	Direct	18	2,275	32%
	Within 1 stop	56	5,222	74%
Christchurch	Direct	4	156	2%
	Within 1 stop	41	4,587	65%
Wellington (current)	Direct	2	24	0%
	Within 1 stop	22	2,476	35%
Wellington (Singapore service)	Direct	3	29	0%
	Within 1 stop	41	4,587	65%
Wellington (China service)	Direct	3	1,374	20%
	Within 1 stop	32	4,296	61%

6.4. Qualitative benefits

A range of additional benefits are likely to flow from enhancing the international connectivity at Wellington Airport through a runway extension. Many of these relate to the role that airports play in supporting particular types of economic activity – particularly those that are dependent on aviation services. Although these benefits may be viewed as generic to increasing aviation capacity anywhere, they are likely to be particularly pertinent the Wellington context. In particular:

- ▶ Through enhancing international connectivity, the runway extension enables a distinctly new level of air service, including the potential for business class service for the full long-haul journey, and an increased degree of connectivity than previously available to/from Wellington. However, this needs to be considered in the context that international connectivity already exists but is limited, or more costly, due to the need to include a short additional connecting flight as part of an itinerary
- ▶ The structural make-up of the Wellington economy, with a high proportion of knowledge-intensive industries, means it is well-placed to benefit from enhanced international connectivity
- ▶ New Zealand already has a strong presence in the global tourism and international student markets. Wellington's 'brand' is weaker than other New Zealand destinations (particularly Auckland and Queenstown) so

has a level of untapped potential that greater promotion of a direct link to the city could exploit.

- ▶ An economically stronger and more internationally connected Wellington is of benefit to the New Zealand economy. It helps to provide increased economic resilience and reduces some of the pressures on the infrastructure and capacity of Auckland.

Economic competitiveness and productivity

Integrated transport networks help businesses to access larger markets. Aviation is a key driver in the sharply increasing globalisation of the services sectors globally.

There are also a range of qualitative benefits that enhanced international connectivity allows businesses to benefit from. These include:

- ▶ Knowledge sharing benefits through increased ease of knowledge transfer through face-to-face meetings
- ▶ Access to an international labour market
- ▶ Access to customers, suppliers and knowledge-sharing around the world
- ▶ Attractiveness to investment

Quantifying these benefits was outside of the scope of this study.

The benefits of international connectivity are most important for sectors characterised by internationalised, high-value products and services which are dependent on mobile workforces and face-to-face relations. These include high-tech sectors, such as the digital and film industry, and financial and business services, as well as government. These all have a strong presence in the Wellington regional economy.

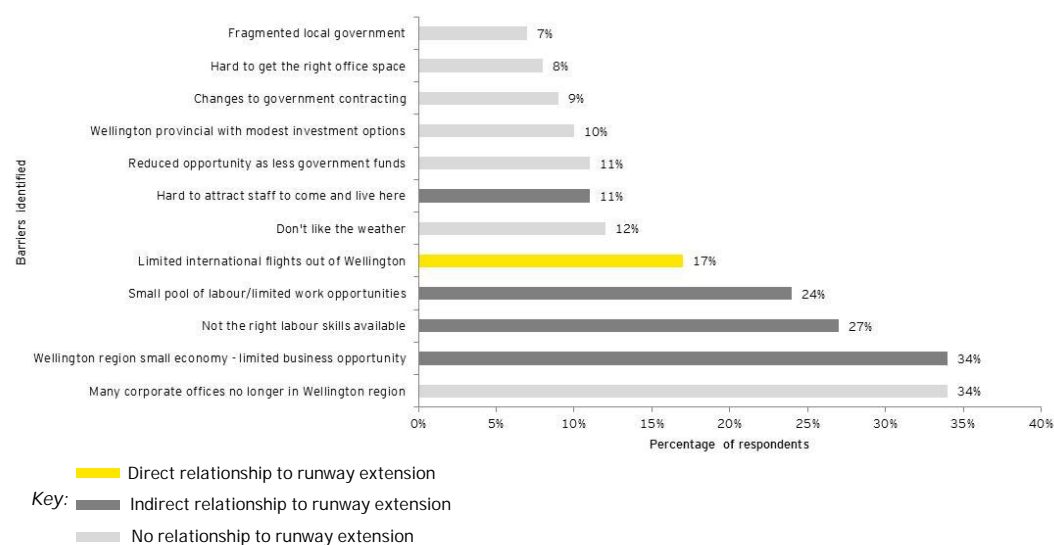
For sectors such as these, the ability to hold face to face meetings with overseas contacts is crucial to doing business effectively. A number of studies have concluded that developments in communication technology, such as video conferencing, have not replaced the perceived importance of developing strong personal relationships with clients for firms.⁴⁷

A detailed study for the International Air Transport Association by Oxford Economic Forecasting⁴⁸ demonstrates the importance that businesses place on air services:

- ▶ Nearly 85 per cent of firms reported air services were important for their sales
- ▶ More than half of the firms surveyed believed their ability to compete internationally would be very severely or moderately affected by constraints on the availability of air transport.

In a recent study of knowledge-intensive Wellington businesses⁴⁹, 17% of those interviewed identified a shortage of international connections as a barrier to doing business effectively. Figure 14 sets out the main challenges that were identified.

Figure 14: Three top barriers to doing business in Wellington



Source: *Strategic issues for employment and design of work in the Wellington region - early results*. Report prepared for Victoria University by Judy Oaken.

⁴⁷ Cited in analysis undertaken for Mayor of London, "A new airport for London Part 1", January 2011.

⁴⁸ Oxford Economic Forecasting, *The Economic Contribution of the Aviation Industry in the UK*, October 2006

⁴⁹ *Strategic issues for employment and design of work in the Wellington region*

Extending the runway to allow for long-haul flights, directly addresses this barrier. However, in addition to this direct impact, the study identified a range of other factors which enhanced international connectivity is likely to help to address through opening Wellington up more directly to international labour and economic markets:

- ▶ Limits on business opportunity from the small size of the Wellington regional economy
- ▶ Not the right labour skills available
- ▶ Small pool of labour/ limited work opportunities
- ▶ Hard to attract staff to come and live here

The Wellington Employers' Chambers of Commerce regularly carries out surveys of its members seeking their views on what's holding Wellington back. These surveys support the findings of the study discussed above. For example, in the August survey in 2013, 16% mentioned the runway extension/direct flights to Asia/long-haul flights as a factor (192 respondents to survey).

Investment and connectivity

Connectivity and the quality of transport infrastructure are often identified as a key driver of investment attractiveness

- ▶ The *Globalization and World Cities Research Network*⁵⁰ research ranks cities based on their level of connectivity. Unsurprisingly, Auckland is ranked as New Zealand's most connected city. Wellington ranks a level lower than Adelaide – a city with a similar sized population but less significant role in the national economy. The level of international aviation services expected from the runway extension in Wellington is likely to be at least the level of international connectivity that Adelaide currently has.
- ▶ There are a range of significant investments planned in the Wellington region over the medium term. These include a Convention Centre and a film school. The runway extension will not be the critical factor to justify investment in these initiatives. However, should Wellington have greater international connectivity, this is likely to increase the benefits that these other investments will deliver, and the investments themselves may help to contribute to the demand for long-haul flights and the

consequent economic benefits that will flow from the additional passenger traffic.

- ▶ Constraints to international connectivity can damage the competitive position of individual companies based in Wellington and reduce the attractiveness of Wellington for foreign direct investment. Firms make location decisions based on accessibility to domestic and international destinations. High-profile domestic examples, such as the clothing design and retail firm Icebreaker's decision to relocate its marketing department to Auckland have been attributed to the better connectivity of Auckland.⁵¹
- ▶ From a global perspective, New Zealand is a small market. Globalisation through improved connectivity and the reduction of tariffs and trade barriers has allowed New Zealand business to expand into larger fast growing markets particularly in Asia. International connectivity is becoming increasingly important, and Wellington's relatively poor connectivity puts it at a disadvantage relative to New Zealand's other main centres and international competitors when seeking to attract business/investment from overseas and vice versa.

⁵⁰ <http://www.lboro.ac.uk/gawc/>

⁵¹ <http://www.stuff.co.nz/dominion-post/business/8628082/icebreaker-team-leaving-Wellington>

6.5. Indirect/induced impacts

As part of this analysis, EY also analysed publically available data of the multiplier effects of the direct economic impacts of a number of airports, both international and domestic.

Table 10 indicates the extent of the direct impacts of each airport and how the airport also contributes to the economy through indirect and induced impacts, adding to the total impact that an airport has on the economy.

Table 10: The multiplier effects of airports

Airport	PAX (millions)	Direct Economic Impact per annum (\$ billions)	Total Economic Impact per annum (\$ billions)	Indirect Multiplier Effect
North America				
Phoenix	40.6	8.2	33.0	4.0
Houston	40.2	7.4	22.4	3.0
Kansas	10.2	1.1	5.5	5.0
Sacramento,	8.7	0.5	3.2	6.2
John Wayne	8.6	1.1	5.6	5.1
Florida	7.5	2.3	3.8	1.7
Europe				
BRUSSELS	18.8	0.6	1.9	3.0
Budapest	8.9	0.4	1.7	4.5
Asia & Middle East				
Dubai, AE	51.0	6.2	22.0	3.5
NEW DELHI	35.0	3.7	9.1	2.5
Australasian				
SYDNEY	32.2	8.0	16.5	2.1
BRISBANE	20.4	3.2	5.4	1.7
PERTH	9.4	1.4	2.9	2.1
Auckland	12		19	
Wellington	5	0.75	1.4	1.9
Christchurch	5.5		1.7	

Source: Compiled by EY from York Aviation Study (2004) and publicly available documents

- ▶ The data summarised in Table 10 supports the conclusion that there is a positive relationship between passenger throughput at an airport and that airports directly and indirectly contribute to the wider economy. An average airport will have a total economic impact of approximately three to four times the size of its direct economic impact due to indirect and induced effects.
- ▶ Based on the above information, it is difficult to draw any firm conclusions regarding the precise multiplier regarding the level of induced and indirect economic impacts of airports. There seems to be a large degree of variability in terms of the size of the indirect/induced effects between different airports. Australasian experience suggests slightly lower indirect effects of around double the direct economic benefits.
- ▶ In the context of Wellington airport, this means that an indicative estimate of the scale of induced and indirect economic impacts from the enhanced international connectivity opened up by the runway extension is likely to be in the region of \$970m to \$1,700m in addition to the direct benefits.⁵²

⁵² Applying a conservative indirect multiplier of 1.5

7. Technical annex

7.1. General assumptions

Date of commencement

Long-haul Commercial flights would commence in 2020 once the runway extension was completed. This assumes a level of existing demand in line with current travel patterns and expected growth, as contained in Tourism NZ forecasts.

Evaluation period

In accordance with NZTA transport economic evaluation guidelines a 40 year analysis period was taken into account (from the commencement of operations)

Discount rate

In accordance with NZTA transport economic evaluation guidelines a 6% discount rate was applied to this analysis to determine the net present value of benefits over the analysis period.

Prices

All values within this evaluation are presented in real 2013 New Zealand dollar terms. No real increases in the value of expenditure over the analysis period have been included within this analysis.

Scope of evaluation

Only those benefits that would be achieved as a result of the operations of long-haul flights were taken into account within this evaluation (i.e.: the economic impacts of construction were excluded).

7.2. Economic benefits assumptions

The methodology for the calculation of the economic impacts for each of the market segments analysed is described in detail below.

7.2.1. International Tourism

Additional expenditure within the Wellington and New Zealand economies as a result of additional tourist visits will benefit the wider economy. The methodology to calculate the number of induced tourists to New Zealand is set out in section 5 of the report.

The direct benefit that would be realised by the national economy would be as a result of an induced tourism activity i.e. those that would not have travelled to New Zealand before they had the option to travel to Wellington. The Wellington economy will realise the benefits both from those that are induced to travel as well as those that have transferred their existing travel from elsewhere within New Zealand or Australia (i.e.: will spend more time in the region rather than elsewhere within New Zealand as a result of direct access).⁵³

The economic benefit of these additional tourists has been calculated using the Tourism NZ expenditure per tourist by their airport of origin data, as set out in the table below.

Table 11: Tourist spend in New Zealand by origin

Tourist expenditure by origin	Total expenditure per person
Africa	\$3,600
Canada	\$4,400
China	\$3,400
Japan	\$3,300
Korea	\$2,700
Middle East	\$3,600
Other America	\$3,600
Other Asia	\$3,500
Other Europe	\$4,000
UK	\$3,500
US	\$3,300

Source: Tourism New Zealand – International Visitor Survey ((December 2013)

⁵³ Note that the total number of international student movements has been removed from the calculated movement of international tourists to exclude double counting.

An average spend per passenger for each of the three alternative routes was calculated by EY based on the Tourism New Zealand International Visitor Survey (as outlined above) and the origin of those tourists which was calculated using the 2030 medium demand scenario.

Table 12: Total expenditure by service

Tourist expenditure by origin	Total expenditure per person
Asia	\$ 3,600
Middle East via Australia	\$ 2,400
US	\$ 3,400

Source: EY assumption based on Tourism New Zealand – International Visitor Survey (December 2013)

It has been assumed that based on Tourism New Zealand information that 18% of total expenditure by those induced international tourists that enter New Zealand via Wellington Airport will be realised within the Wellington region (i.e.: the remaining 82% will be spent elsewhere within New Zealand).

With regards to those international tourists that would have travelled to New Zealand regardless of direct access at Wellington airport it has been assumed that the provision of direct services to the region will result in these tourists spending more time (and thus money) within the region at the expense of expenditure elsewhere within New Zealand. Therefore this benefit is only realised within the Wellington economy and there is no net impact on the national economy.

It is assumed that in the medium case, these tourists will spend an additional 10% (7.5% and 12.5% in the low and high case respectively) of their total trip in New Zealand within the Wellington region.⁵⁴ This is the equivalent of between 1 and 2.5 additional days spent in the region, consistent with travel patterns at other New Zealand entry/exit points.

International Students

It has been assumed that the provision of direct international aviation services will impact on the choice of city that international students make. This analysis has assumed that the provision of a direct international service from Wellington

would result in a higher proportion than currently of international students choosing to study in Wellington, in preference to another New Zealand city.⁵⁵

Currently 1.3% of total international passenger movements to Wellington are for educational purposes.⁵⁶ Given that a number of international students travelling to Wellington would do so via Auckland it has been assumed that a total of 2% of passenger movements would be undertaken by international students.⁵⁷ Furthermore it is assumed that an international student will make 2 trips per year back to their home country.⁵⁸

We have also assumed a small increase in 'new to New Zealand' students. This analysis assumes that 10% of the total increase in students studying in Wellington (2% as stated above) would have otherwise undertaken their studies outside of New Zealand.

The Wellington regional economy would benefit through the additional expenditure by these students over the year, through school fees and living expenses. It has been calculated from the Infometrics report⁵⁹ that the average international student within New Zealand spends approximately \$25,000 per annum. Within this analysis it has been assumed that student expenditure within a given year would be \$27,500 and \$22,500 within the high and low cases respectively.

Local business travel time savings

The productivity benefit that would be achieved by reducing the effective travel time (effective wait and transfer and additional in air time in Auckland/Christchurch on international flights to/from Wellington as well as the return) of domestic business travellers would result in a benefit to Wellington and New Zealand as a whole. The 'effective time' is the time spent on-ground waiting for the connection, including transfer times, as well as additional in flight time on Auckland/Christchurch on domestic flights to/from Wellington.

It has been assumed within this analysis that 15% of total domestic based international passenger movements that originate from Wellington are primarily for business reasons.⁶⁰ Furthermore it has been assumed that an international passenger would realise up to 2 hours (1 and 3 hours in the low and high

⁵⁵ It is assumed that 90% of students that would transfer to Wellington as a result of improved connectivity would have studied elsewhere within New Zealand, and 10% from other international destinations (e.g.: Australia)

⁵⁶ Statistics New Zealand

⁵⁷ EY assumption

⁵⁸ EY assumption based on unpublished Infometrics work

⁵⁹ The Economic Impact of Foreign Fee -Paying Students (2013)

⁶⁰ Statistics New Zealand

⁵⁴ EY assumption based on discussion with stakeholders

scenarios) in waiting/transfer time savings per international trip and approximately 50 minutes of in air time (difference between direct services and connecting services air-travel time) as a result of a direct service.⁶¹ Given that this benefit is only included in this evaluation for New Zealand based business travellers flying internationally it has been assumed that all of those persons would be within close proximity to Wellington City.

A business value of time of \$32.25 per hour was calculated based on the Australian CASA aviation business value of time (both on-ground and in-air) converted into New Zealand 2013 dollars.⁶²

Aviation related expenditure

The increased movement of passengers and freight through Wellington airport will have a direct benefit to the region through increased expenditure at the airport (i.e. landing charges and ground support services) and via the airlines.

It has been assumed that there will be a direct benefit to the economy associated with aviation related services of \$40 per passenger over the evaluation period.⁶³

It has been assumed that the majority⁶⁴ of this expenditure, supporting the operations of Wellington airport and associated airlines, would be realised within the Wellington region.

The estimated split of expenditure that would be realised within the Wellington economy rather than the wider NZ economy as a result of increased aviation movements has been based on the New Horizons report on the Aviation industry for NZ Trade & Enterprise.⁶⁵

Freight productivity improvements

Improving the flow of import/export freight movements within New Zealand would result in a productivity gain that would benefit the country as a whole. It has been assumed within this evaluation that the provision of international freight services from Wellington airport would result in a diversion of the movement of aviation export/import freight from Auckland or Christchurch.

The benefit associated with the improvement of freight has been calculated from the effective reduction in travel time of transporting export freight to Wellington Airport rather than Auckland (or Christchurch) and vice versa for imports.

The following assumptions have been incorporated within this analysis:

- ▶ Trucks transporting this freight can carry up to 12.5 tonnes and would travel an average of 50km per hour
- ▶ There is no change in wait or processing time of freight at Wellington airport compared to the alternative airports of Auckland or Christchurch.
- ▶ The value of time of freight would be \$45 per tonne per hour, based on the NZTA economic evaluation guidelines taking into account the differential in the value of freight that is transport via land and that which is transported via air.⁶⁶

⁶¹ EY assumption

⁶² EY calculation based on Australia's Civil Aviation Safety Authority economic evaluation guidelines

⁶³ EY calculation based on BERL estimate of the aviation operation economic benefit of Wellington Airport – Wellington Airport Masterplan (2010)

⁶⁴ 90% - EY assumption

⁶⁵ "New Horizons, A report on New Zealand's Aviation Industry", New Zealand Trade & Enterprise, 2010

⁶⁶ Sydney Aviation Capacity Study (2012)

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