ACCESS ECONOMICS

# An Evaluation of the Proposed Residential Development at South Jerrabomberra

3 December 2009

Report by Access Economics Pty Limited for

Village Building Co

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# Glossary

| | |
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| ABS | Australian Bureau of Statistics |
| ACT | Australian Capital Territory |
| ACT-QCC | The geographical and economic region defined by the boundaries of the ACT and the QCC local government area. |
| ANEF | Australian Noise Exposure Forecast |
| CPRS | Carbon Pollution Reduction Scheme |
| GRP | Gross Regional Product (for the ACT plus QCC local govt area) |
| LDA | Land Development Agency (an ACT government agency) |
| NSW | New South Wales |
| QCC | Queanbeyan City Council |
| SJ | South Jerrabomberra |

# Executive Summary

Residential development at South Jerrabomberra (SJ) and curfew-free aviation operations at Canberra Airport are not mutually exclusive. The two can coexist.

Using the Airport's own worst-case noise forecasts, the residential components of the SJ development are located in zones defined as 'acceptable' and 'conditionally acceptable' for aircraft noise intrusion under the current Australian Standard, which is one of the most stringent aircraft noise Standards in the world. It is also more stringent than NSW Planning's draft guidelines for noise attenuation near major roads and railways.

For houses in the 'conditionally acceptable' zone of SJ, the proposed noise attenuation measures ensure that the conditions are met for these houses to be 'acceptable'.

Furthermore, this worst-case noise exposure is highly unlikely to ever be generated. Expected improvements in aircraft and air navigation technologies, and a future where there is a price on carbon, will combine to ensure that noise from other suburban sources *other than aircraft* will predominate over aircraft noise for people living at SJ.

In the absence of residential development at SJ, there is expected to be a shortage of affordable housing in the ACT-Queanbeyan region – and particularly in the south-eastern part of that region – over the coming decade.

Median new house prices in the region are estimated to be $40,000 lower over the coming decade (in today's dollars) if residential development goes ahead at SJ, than if it does not. Without SJ, it could add $100,462 in mortgage repayments and mortgage insurance over a 30 year loan, for the median house buyer in the region.

If SJ does not proceed, the resulting constraint on population growth in the region is expected to trim $1.25 billion per annum from Gross Regional Product by 2020.

If the proposed residential development at SJ does proceed, the associated construction activity is expected to generate 3,300 person-years of additional full time employment over the coming decade.

SJ also has other advantages over the alternatives: it achieves a more compact urban form; it provides a major new land release in the south-eastern part of the region, to balance the heavily north-west focus of upcoming ACT land releases; it utilises existing underground services; it reduces overall commuting time, vehicle kilometres and carbon emissions; and, it can do this without impinging on operations at Canberra Airport.

If purchasers of land at SJ are (prior to purchase) fully informed that they will experience aircraft noise, there is a negligible likelihood of the SJ community being able to later successfully lobby for operational restrictions to be placed on the airport.

**Access Economics recommends that South Jerrabomberra be rezoned for residential development, with appropriate measures taken to ensure the purchasers of land at SJ are aware (prior to purchase) that SJ experiences aircraft noise.**

# Summary Report

The Queanbeyan City Council and NSW Department of Planning are soon to decide whether to rezone South Jerrabomberra (SJ) for residential development. This development would provide an important supply of affordable land in the decade ahead for the ACT-QCC region. If SJ do not go ahead, it would create a significant monopoly on land release for the ACT's Land Development Agency. While the ACT LDA has released some affordable land in northern Canberra, these are now mostly sold or over subscribed. The upcoming land releases in the ACT in areas such as Molonglo are likely to have insufficient affordable lots to meet demand.

The impact on house prices could be significant. If residential development at SJ does not go ahead, the resulting lack of supply, competition and variety in land sales, could see median new house prices $40,000 higher than they need to be. This will severely constrain the growth of the ACT-QCC economy and negatively impact on the standard of living of those people looking to enter the housing market over the next decade.

Extracting higher prices for the sale of crown land in the ACT certainly benefits rate payers, at the expense of low income households and first home owners, but it is a highly regressive revenue source.[1] It is questionable whether first home owners and low income households buying in outer suburbs should pay more so that rate payers in inner suburbs can pay less to fund overall ACT Government services.

With the First Home Owners Bonus being wound back and lack of affordable housing lots being released in the ACT-QCC region, 2010 to 2020 is looming as a decade of expensive housing and slow growth for the ACT-QCC economy. SJ is a key part of the solution to affordability issues.

The choices faced by home buyers seeking new house and land packages in reasonable proximity to employment opportunities in the ACT-QCC region, as new land releases become substantially more costly over the next decade, are:

- Borrow more money (if they can), resulting in more 'dead money' spent on higher interest payments and mortgage insurance, or
- Delay their entry into the property market, resulting in more years of 'dead money' spent on rent until they can save the higher deposit needed – all the more difficult as land prices continue to accrue capital gains, so their savings target keeps growing while they are renting, or
- Live further out (if a suitable house can be found further out), thereby going against the principles of holistic urban area planning, incurring greater servicing costs, longer commuting costs, higher vehicle running costs, and higher carbon emissions, or
- Decide to settle in another city where housing is more affordable. Even though the ACT-QCC region may still offer 'cheaper' housing in an absolute sense compared to the inner areas of larger metropolitan cities, the relationship between the housing prices in an area and the opportunities afforded by that area – a major determinant to where people live – will be detrimentally affected when house prices rise only because of housing

[1] While the ACT Government has recently adopted the proper accounting treatment used in the rest of Australia – where land sales are (strictly speaking) a balance sheet item rather than a revenue item – in practice, land sales still generate cash flow for the Government and contribute to the funding of recurrent expenditures.

supply shortage. While Canberra has a relatively high *average* household income, it is important to consider the *median* and bottom *quartile* of household incomes when assessing housing affordability – the majority of households in the ACT-QCC region earn less than the *average* income.

The costs imposed on a low income or first home owner household from having to pay $40,000 more for the median new house than they should have, due to a lack of competition in land supply and a lack of affordable housing over the next decade, are:

- $273.68 more per month in mortgage repayments, for the life of a 30 year loan at an average interest rate of 7.28% – a total of $58,525 in bank interest plus $40,000 paid in monopoly profits to the ACT Government over the life of the loan. That is, $40,000 extra up front ends up costing $98,525 over the life of the loan.

- And, pay mortgage insurance at the rate of around $1,937 per annum for around an additional twelve months (because it takes longer for equity to build up to 20% of the property's value), a total impost of $100,462 over the life of the loan.

Or, if the household does not have the capacity to borrow the additional $40,000, they may have to pursue some other options available in the face of less affordable housing:

- Rent for longer to save the required deposit. For a typical household saving for a home, it could take around 18 months, or nearly $30,000 of 'dead money' spent on rent, before the higher deposit needed (ie $4,000, being 10% of $40,000) can be saved. This is on top of the $100,462 in additional mortgage payments and mortgage insurance once they are in the house, as noted above. The total additional outlay for this household to purchase a home is around $130,000 over the 31.5 year timeframe for renting then paying off their mortgage.

- Live further out – assuming a suitable property can be found further out – resulting in 54 hours, worth $2,355 per annum, in additional commuting costs (including the cost of fuel, time and carbon emitted), given the proximity of other affordable land releases to employment areas, relative to SJ.

- Move away from the ACT-QCC region to a region with more competitive land supply and more affordable housing.

The last of the options in the above box is the most concerning for the broader community and the economic prosperity of the ACT-QCC region.

If residential development at SJ does not go ahead, BIS Shrapnel estimates that population growth in the ACT-QCC region would be 0.4% per annum slower and that employment growth would be 0.5% per annum slower, across the decade 2010 to 2020. Access Economics has reviewed the BIS Shrapnel analysis and concurs with its findings. Running the BIS Shrapnel results through Access Economics' General Equilibrium Model shows that the gross regional product (GRP) of the ACT-QCC area would be around 3.6% lower by 2020 if SJ does not go ahead, compared with a scenario where residential development at SJ does go ahead. In

today's dollars, constraining the release of affordable housing over the next decade could cause a loss of GRP in the ACT-QCC region of around $1.25 billion per annum by 2020.

The scale of construction at SJ – some half a billion over the next decade – would take away the Cotter Dam Enlargement's title as the biggest project since New Parliament House. The person-years of employment created by SJ would be 3,300 over the coming decade.

The proposed development at SJ has other important benefits in:

- bringing about competition in land supply to reduce the ACT LDA monopoly on land release in the ACT-QCC region,
- providing a greater variety of land in more locations in the ACT-QCC region, other than just northern Gungahlin and Molonglo, and
- ensuring the QCC local area is not constrained in its growth.

In addition to these benefits, the proposed development at SJ makes a sense from a holistic planning perspective. It is:

- close to existing road networks, underground services and employment areas,
- close to community facilities, shops and schools, and
- a density-increasing infill between Jerrabomberra in NSW and Chisholm/ Gilmore in the ACT (rather that further sprawl on outer edges of the ACT-QCC regions).

With those factors in its favour, approval of the rezoning of SJ would appear to be straightforward. However, the NSW Planning and QCC rezoning process for SJ – now into its eight year – has been the subject of numerous delays and reviews due to a single issue: aircraft noise.

Canberra Airport is concerned that residential development at SJ will result in operational restrictions on its business and the wider aviation industry, such as a curfew. Interestingly, the imposition of a curfew is unlikely to ever pass a cost-benefit analysis test. Even though the impact of a curfew on the aviation industry would be small in net present value terms (due to the distant horizon for when the airport's traffic forecasts will be achieved), the noise impacts on residents at SJ are also expected to be small (due to the worst-case assumptions used by the Airport in the creation of the ANEF contours being unlikely to be achieved in practice). The ability of SJ residents to lobby for a curfew is further diminished because the airport pre-dates development at SJ. So, while the Airport's fears (of SJ causing a curfew) seem unfounded, it has pursued a long running and colourful campaign against residential development at SJ.

The residential component of the development at SJ is more than 10km from the airport and are in zones deemed 'acceptable' and 'conditionally acceptable' by the current Australian Standard for noise intrusion by aircraft (AS2021-2000). The first tranche of SJ development, at South Tralee, is largely in the zone deemed 'acceptable', with only a small component in the 'conditionally acceptable' zone. The noise attenuation measures proposed for houses in SJ ensure that houses in the 'conditionally acceptable' areas meet the conditions required to be 'acceptable'. According to the current standard, homes in SJ will be located in an area where '*noise from other sources other than aircraft tends to predominate over aircraft noise'* – or in other words, passing motor vehicles and other normal suburban noise are likely to be more

noticeable than aircraft noise for people living in SJ, based on Canberra Airport's own (and hence worst-case) projection.

The Australia Standard for aircraft noise is already one of the more stringent in the world. The relevant standards in Canada, the United States, France and much of Germany (among others) allow residential development in higher noise contours than the proposed SJ development.

The level of noise attenuation required for aircraft noise is also greater than the applicable draft guidelines by NSW Planning for noise attenuation in houses located near major roads and railways.[2]

Society builds houses near infrastructure all the time even where that infrastructure imposes some negative externality cost on nearby residents, be it though impacts such as noise, shading, radiation or negative aesthetic impacts. There are many houses in Australia that are near a main road, railway, power line or pipeline. Provided the buffer zones for these are clearly defined and the property rights of the infrastructure owner are clear, a family choosing to move into a house near such infrastructure knows that the encumbrance exists and that it will not be moved.

In the case of airports, the relevant buffer zone is defined by the Australian Noise Exposure Forecast (ANEF) system as defined in the Australian Standard AS2021-2000. While the ANEF system ensures that aircraft noise is taken into account in the design and location of buildings near airports, Canberra Airport is concerned that people buying land in SJ will later exert pressure on politicians to have flight paths altered or for a curfew to be imposed.

This concern about the lack of permanency of its flight paths and curfew-free operations has resulted in Canberra Airport objecting to residential development at SJ and proposals from Canberra Airport to prevent residential development in an even larger area, which it refers to as the 'High Noise Corridor'.

Rather than moving away from the well-established and scientifically-based ANEF system, the crux of the issue and the core of Canberra Airport's concerns can be addressed by ensuring that purchasers of land at SJ are fully informed (prior to purchase) of the ANEF contours, the noise attenuation requirements and the airport's operations.

If SJ residents are aware of aircraft noise issues and noise attenuation requirements prior to purchase, there is a negligible likelihood of the SJ community later successfully lobbying for changes to aircraft flight paths or curfews. More drastic solutions – such as Canberra Airport's proposal to prevent residential development in its 'High Noise Corridor' – are excessive, given that a more nuanced and targeted solution to this issue is available.

Even with these measures in place, decision makers could still be motivated to disallow development at SJ, due to a desire to 'protect' people from aircraft noise. Any such paternalistic concerns can be put to rest for the following reasons:

- As noted above, SJ will result in more affordable housing, in an attractive location – far outweighing any negatives from aircraft noise intrusion.
- The Airport's estimates of noise exposure at SJ are a worse-case scenario of noise in the year 2050 to 2060 based on year 2000 technology. There is a

[2] Based on advice from Wilkinson Murray, a firm of acoustic specialists, dated 2 November 2009.

very high likelihood that aircraft construction, navigation and air traffic control technologies over the next four decades will ensure actual noise is much lower than the Airport's worst case modelling.

- Much of the noise exposure is driven by the Airport's night freight hub proposal and Sydney overflow aspirations. There is considerable doubt that the Airport's aspirations of a five-fold increase in large aircraft movements will ever be achieved. Even if the Airport is successful in achieving these, the noise exposure at SJ remains in the 'acceptable' and 'conditionally acceptable' zones under the current Standard for buildings subject to aircraft noise.
- By 2050 there will be a carbon price (of some form) in the Australian economy. The air traffic projections by the Airport do not factor in a carbon price or a realistic world oil price. Only in a cheap-oil, free-carbon world will the Airport's aspirations be achieved.

As a result, potential home buyers at SJ can sign a sale contract – fully aware of the airport's flight paths and curfew-free operations – safe in the knowledge that there is a very low probability of noise ever being a significant concern for residents at SJ. There is no need for a paternalistic policy approach in relation to SJ. While there are some people in the community that may have a heightened sensitivity to noise, provided the issues are clearly spelt out in advance, those people can make a well-informed decision about whether living at SJ is right for them. For a good many people, the noise issue is unlikely to have much impact on their decision to live in SJ, nor their quality of life once there. Few people are fortunate enough to buy into an area where every conceivable attribute is perfect, and, in reality, most locational decision making involves trade-offs reflecting people's judgements. That is, people can 'self select' whether the various benefits of living at SJ (and living with some aircraft noise) is the right package for them.

The aviation industry is an important part of the economy, but is also something that has to be balanced with issues of affordability and economic growth in the rest of the economy, to decide whether rezoning of SJ is for the greater good.

Canberra Airport's less flexible proposal – that residential development should not occur anywhere in its self-proclaimed 'High Noise Corridor' – has no scientific basis or verification by an independent source. This proposal doesn't balance the issue of aircraft noise with the many other issues relevant to land use decisions.

The Commonwealth Department for Infrastructure, Transport, Regional Services and Local Government in its paper 'Safeguards for Airports and the communities around them', have proposed its Minister should have a veto over development near airports. This approach would not pass a cost-benefit test, particularly when other avenues are available to protect and entrench the rights of aircraft to use the southern approach to Canberra Airport, free from operational restrictions, while still creating competition in the market for land supply and thus more affordable housing in the ACT-QCC region. If this proposed policy was consistently applied elsewhere around Australia, it would see vast tracts of urban Sydney, Brisbane, Perth, Adelaide and Melbourne ruled out for any further greenfield development, infill or density increase. If similar aircraft noise standards were applied to the noise generated by major roads and railways, an even larger amount of land would become unavailable for residential development. The inconsistent approach to policy in relation to noise intrusion appears to treat SJ more severely than developments near any other airports, main roads or railways.

There are few alternatives available to the Queanbeyan City Council for large scale new residential development that is as well located as SJ. As well as providing large new tracts of residential land, the SJ development also provides employment land, recreational land and a high school. A blanket ban on development in the Airport's 'High Noise Corridor' would sterilise a vast area of well-located land within the QCC boundaries. To have a wholesale ban on development in this area would cause thousands of people to live further from work, spend more on interest payments and mortgage insurance, or simply move away from the ACT-QCC region. In particular, preventing SJ from being developed would severely constrain the growth of Queanbeyan and the wider ACT-QCC region.

The immense cost and economic impact of not allowing development in the Airport's 'High Noise Corridor' would far outweigh any impacts on the aviation industry – particularly if those impacts can be avoided by ensuring purchasers of land at SJ are informed of aircraft noise issues in advance.

## Conclusion

There are significant negative economic consequences for the ACT-QCC region if development at South Jerrabomberra does not proceed. There is scope for the development at SJ to occur without impacting on the right of aircraft to use existing flight paths, as embodied in Canberra Airport's 2008 ANEF contours. Canberra Airport and South Jerrabomberra can coexist, and it would be for the greater good. After all, the Airport has found a way for an on-airport child care centre located on the ANEF 30 contour to coexist with airport operations, so residential developments some 10 kilometres away, and outside the ANEF 25 contour, should be able to coexist with the airport.

A blanket ban on residential development in areas south of Canberra Airport is an excessive response to the issues at hand. Access Economics recommends that Queanbeyan City Council and the NSW Department of Planning approve the rezoning of South Jerrabomberra for residential development, and ensure purchasers of land are fully informed of aircraft noise issues prior to purchase.

**Access Economics, December 2009**

# 1 Background

The Village Building Company commissioned Access Economics to evaluate the proposed rezoning of South Jerrabomberra for residential development.

The NSW Department of Planning and the Queanbeyan City Council are soon to decide on this rezoning. This is an important decision in the context of the future growth and prosperity of Queanbeyan. The decision also has consequences for the amount of competition in land release and the volume of affordable land release in the broad ACT-QCC region. The proposed development also includes employment land, recreational facilities and a high school.

Access Economics has no financial interest – and no success fee or the like – in the rezoning outcome. This report is our independent assessment of the impacts of the rezoning and related issues.

In recent years Access Economics has worked for:

- Canberra Airport on issues of airport pricing calculations and the regulatory framework for airport pricing.
- ACT Tourism on the scope for direct flights between Canberra and Singapore.
- Village Building Co on issues relating to South Jerrabomberra, including cross-border fiscal impacts, airport traffic and Canberra Airport's Master Plan.
- The Commonwealth Department for Infrastructure, Transport, Regional Services and Local Government in relation to the Sydney Airport Master Plan.

In working on different issues in the past for all sides of this current debate we have strived to provide independent rigorous analysis, and always on a fee-for-service basis. Access Economics is not on any on-going retainer or commission-type arrangement with any organisation involved in the debate surrounding South Jerrabomberra.

# 2 Affordable housing

This section explores the potential impacts of the South Jerrabomberra development on affordable housing in the Australian Capital Territory and Queanbeyan City Council (ACT-QCC) region. For further detail on methodology and model assumptions, please refer to Appendix A. Ensuring competition in the supply of land in the ACT-QCC region is of crucial importance, not only to maintain a healthy discipline on the land release policies of the ACT Government, but to increase the amount and variety of land for sale and to provide additional flexibility in responding to fluctuations over time in the demand for new land releases.

In the absence of residential development at South Jerrabomberra (SJ), the ACT Government will have a virtual monopoly on well-located residential land release in the ACT-QCC region. The existing residential zoned land at Jerrabomberra (in NSW) is now built out, but during the 1990s Jerrabomberra was an important competitor to the highly priced and scarce new land offerings in the ACT. The same impact can be expected through the release of residential land in SJ. Most planned land releases in the ACT over the next decade are in the northern and western parts of the ACT – SJ and Googong provide choice in the south eastern parts of the ACT-QCC region. Googong (alone) would not supply a sufficient volume of affordable lots to meet demand, so Googong is not a substitute or replacement for SJ. Googong and SJ are complementary and both of these development fronts are needed to ensure adequate affordable housing over the coming decade.

More recently, median house prices in the ACT have increased by 85 percent over the 6 years to December 2008 (ABS 6416.0). The sheer size of mortgage repayments in a typical household budget creates a direct link between competitive land release and the living standards achieved over a family's lifecycle.

## 2.1 Housing affordability

Housing affordability is a crucial factor in life-time home attainment and living standard outcomes for low income households. The availability of affordable housing allows low income households to enter the housing market sooner and at lower cost. These ideas have been explored through an analysis of a typical household looking to purchase a home in the 'affordable housing' segment of the real estate market.

This analysis draws on the work by BIS Shrapnel on measuring the impact of SJ on median land prices in the ACT-QCC region. BIS Shrapnel found that the median land price would be $40,000 lower over the period 2010 to 2020 (in today's dollars) if SJ goes ahead, than if it does not. Access Economics has reviewed the analysis by BIS Shrapnel and agrees that it is a reasonable representation of the likely impact of less competition in the supply of land (and hence house-and-land packages) and a lower overall volume of affordable land releases.

**With SJ Scenario** – in a competitive market for affordable housing, median new house prices in the ACT-QCC region would be around $410,000 over the period 2010 to 2020 in today's dollars.

**Without SJ Scenario** – in a less competitive market for affordable new housing, median new house prices would be around $450,000 from 2010 to 2020 in today's dollars.

The question analysed here is: if SJ does not go ahead, how would a household respond when faced with the additional $40,000 cost to buy a median-priced new house?

**Response 1** - the household could respond by borrowing $40,000 more (if they have the capacity to do so) to enter the real estate market when a lack of affordable land releases pushes up median house prices. As well as borrowing more, the household would also have to carry mortgage insurance for a longer period. Mortgage insurance is typically required until the amount of equity in the home rises to 20%. It takes longer to build up to 20% equity when the amount borrowed in $40,000 higher, resulting in more 'dead money' spent on mortgage insurance, as well as bank interest.

**Response 2** - the household could respond by renting for a longer period in order to save the higher deposit needed to enter the more expensive real estate market. The standard 10% deposit required to enter the housing market (plus fees and stamp duty) rises by $4,000, ie from $41,000 to $45,000, in the ACT-QCC region if SJ does not go ahead.

**Response 3** - the household could respond by purchasing a house lower down the cost curve (such as a home further away from employment zones), provided a suitable house further out can be found. This results in higher commuting costs due to living further out.

**Response 4** - the household could respond by moving elsewhere, to a different city where hosing is more affordable. An exodus of households from the ACT-QCC due to a lack of affordable land releases over the period 2010 to 2020 would result in slower population growth and slower overall economic growth in the ACT-QCC region.

## 2.2 The impacts on a typical household

As shown above, a typical household has some options of how they respond to this cost impost. However, none of these options are particularly palatable, and have serious impacts on the living standards of that household and the broader region.

In reality, we are likely to see a combination of all these responses as the various households make different decisions of how to cope with the lack of affordable land releases.

### Impact of response 1 ('borrow more and pay mortgage insurance for longer')

At an average future mortgage interest rate of 7.28%, the household would pay $273.68 more per month in mortgage repayments, for the life of a 30 year loan - a total of $58,525 in bank interest plus $40,000 paid in monopoly profits to the ACT Government over the life of the loan. That is, $40,000 extra up front ends up costing $98,525 over the life of the loan.

And, pay mortgage insurance at the rate of around $1,937 per annum for around an additional twelve months (because it takes longer for equity to build up to 20% of the property's value).

To avoid mortgage stress (defined as when repayments account for 30% or more of household income), the repayment increase of $435 per month inclusive of mortgage insurance would require $1,450 more in income to service it. This increase would put housing out of the reach of many low income households, or place them into a situation of mortgage stress.

The impact on overall lifetime living standards for a low to middle income family from paying an estimated $100,462 more in mortgage repayments and mortgage insurance is clearly

significant. Due to the impact of compounding mortgage interest, $40,000 more up front turns into $100,462 over the life of the loan.

### Impact of response 2 ('rent for longer')

For a typical low to middle income household saving for a home, it may not be possible it borrow more, so they may also need to continue renting and saving for the larger deposit required. Our estimates suggest it could take around 18 months, or nearly $30,000 of 'dead money' spent on rent, before the higher deposit needed (ie $4,000, being 10% of $40,000) can be saved for a typical household facing typical income and living costs.

The household would still need to also borrow the extra funds and mortgage insurance described in 'Response 1'. As a result, a household that needs to rent for longer before entering the real estate market could pay a total of around $130,000 more than it needs to over the life of a 30 year loan.

### Impact of response 3 ('live further out')

Live further out – assuming a suitable property can be found further out – resulting in 54 hours, worth $2,355 per annum, in additional commuting costs (including the cost of fuel, time and carbon emitted), given the proximity of other affordable land releases to employment areas, relative to SJ.

There will also be knock-on effects on the prices of houses further out – in new land releases in northern Canberra – if SJ does not go ahead, adding to the commuting costs.

### Impact of response 4 ('moving away from ACT-QCC')

This scenario has more wide-reaching impacts on the entire ACT-QCC regional economy. If residential development at SJ does not go ahead, BIS Shrapnel estimates that population growth in the ACT-QCC region would be 0.4% per annum slower and that employment growth would be 0.5% per annum slower, across the decade 2010 to 2020. Access Economics has reviewed the BIS Shrapnel analysis and concurs with its findings. Running the BIS Shrapnel results through Access Economics' General Equilibrium Model shows that the gross regional product (GRP) of the ACT-QCC area would be around 3.6% lower by 2020 if SJ does not go ahead, compared with a scenario where residential development at SJ does go ahead. In today's dollars, constraining the release of affordable housing over the next decade could cause a loss of GRP in the ACT-QCC region of around $1.25 billion per annum by 2020.

Due to the high import content in the ACT economy, the $1.25 billion impact on production is accompanied by a significantly higher impact on final demand (as reported by BIS Shrapnel). The various data sources and parameters used in this analysis are described in Appendix A.

## 2.3 Economic and social impact of South Jerrabomberra development

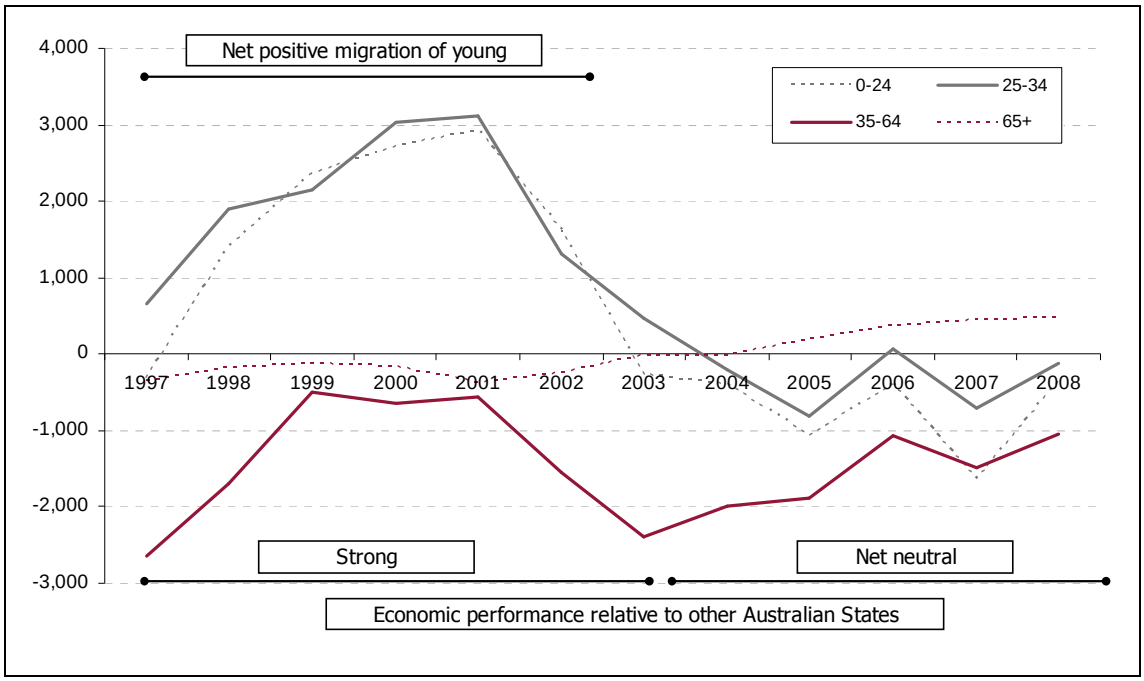
Additional to the improvements on household home attainment, lifestyle and associated costs, there are broader economic and social impact issues involved in releasing more affordable housing developments (and, more specifically, releasing the development in South Jerrabomberra). From a whole-of-economy point of view, increased employment opportunities during the construction phase, strong sustainable population growth

management, and improved social standing/inclusion are all positive impacts of wider housing choices. While there may be some negative influences, for example environmental or ecological damage, these would be expected to be minimised to the greatest extent possible during the planning process.

The sheer volume of construction activity at SJ over the next decade is likely to be the equivalent of five to six times the amount of construction activity of the Cotter Dam enlargement – around half a billion dollars of construction spread over a decade. While the Cotter Dam enlargement has been billed as the largest building project in the region since the New Parliament House, in fact, SJ would take that title by a considerable margin. The SJ construction activity is estimated to generate 3,300 person-years of full time employment over the coming decade.

The release of new affordable housing developments is not only beneficial to managing and sustaining underlying population growth, but also to stabilising interstate population migration trends. While economic performance (and, ultimately employment opportunities) relative to other Australian states tends to be the most common impetus for working age interstate migration, a secondary cause is the availability of affordable housing options. If the development in South Jerrabomberra is allowed to proceed, this can be expected to attract to some degree of permanent interstate arrivals.

**Chart 2.1: Net interstate migration by Age, Victoria**




The combined impact of these factors on net migration in Victoria is shown in Chart 2.1. From 2000, the Victorian government proactively implemented affordable housing initiatives. With other factors also in the mix, it is impossible to measure the precise impact of those initiatives on net interstate migration, but it is indicative of housing affordability programs boosting net interstate movements in Victoria over the last few years.

# 3 Attributes of the proposed residential development at South Jerrabomberra

This section examines the attributes of the proposed South Jerrabomberra (SJ) residential development from a holistic planning perspective.

A great deal of the focus in the ongoing debate between Canberra Airport and the proponents of residential development at SJ (to date) has focussed on the issue of aircraft noise, in particular the nuisance problems caused by aircraft noise at certain hours and nearby residential areas. Clearly this is an issue, as it is with any land (or air) use that creates loud noises in the vicinity of residential developments. We discuss later how this particular issue can be managed better.

Our key interest in this Section is to highlight that noise is only one issue when it comes to land use planning, and there are many other attributes of SJ that make it suited to a residential development from a more holistic urban planning perspective, rather than the single issue (noise) perspective that has dominated the debate thus far. Any residential location faces trade-offs in attributes, and it is exceedingly rare to find a location that is perfectly suited to residential dwellings in every way. The presence of one particular type of negative externality (in this case aircraft noise) in an area should not mean the area is deemed unsuitable for residential development, if the mix of other attributes is superior to other sites for development.

In several ways the development is more consistent with holistic urban planning principles than alternative sites for Greenfield developments around Canberra, including the very objectives articulated by the Canberra Spatial Plan. We focus in particular on two of those attributes: housing affordability and proximity to employment and services (and hence commuting mode and time) elsewhere in this report, but in summary those principles, and how the SJ development is consistent with them, include:

- **Create a more compact city** – the development at SJ is located closer to the existing urban fringe than most alternative greenfield development sites surrounding Canberra, including Googong. The Canberra Spatial plan states that "Canberra will be a city where growth has been largely contained within a 15 kilometre radius of the city centre". The proposed development sits approximately on or within this 15km radius (see Figure 3.1), and between the existing urban boundaries of southern Canberra (approximately 1km) and Queanbeyan (approximately 3km). Conversely, a development at Googong, which is approximately 20km from the Canberra CBD, will push the effective urban boundary of the overall Canberra-Queanbeyan urban area significantly further south-east away from the CBD than it currently is. The Googong site is approximately 8km to the southern urban fringe of Canberra. In some metropolitan areas this growth corridor-like expansion to the urban fringe is justified on the grounds of development around key transport or infrastructure links, especially the desire to develop around key public transport corridors in more contemporary times, but this does not hold true for Googong which is not located on any existing transport corridors of note.
- Arterial road access – the proposed development is located just over 1km from the Monaro Highway, one of Canberra's main arterial roads to the south with existing bus

public transport infrastructure. Conversely, Googong is over 8km from that same highway, its closest major arterial road.

- Proximity to employment (total) – based on 2006 census data, there are approximately 2,600 existing employment positions within 7km of the proposed South Jerrabomberra development, significantly more than the same figure within 7km of Googong (which is largely rural). Not only does employment within this range lead to lower private vehicular commuting times, but it also opens up the possibility of non private vehicular modes of transport, most notably cycling and walking. Once this range is extended to 11km the employment positions increases to over 40,000 surrounding the South Jerrabomberra development, largely through the regional employment hubs of centres of Woden, Phillip, Hume, Fyshwick and Greenway. There are no equivalently close existing employment opportunities as close to Googong.
- Proximity to range of proximate employment options. Within the same 7km radius defined above, there is a mix of employment options, with the area proportionately strong (relative to the economic mix in the total economy) in Education and Training (comprising 26.25 % of the regional employment, versus the equivalent national figure of 7.94%), health care (15.02%) and retail trade (12%).
- Proximity to shopping, schools and health care facilities. The fact that these three industries above (retail trade, education and training and health care) are the largest proportional employers within close proximity to the development are significant in an urban planning context, for they are the indicate close proximity of facilities and services required on a day to day basis, most notably shops, schools and health care facilities. Local shopping opportunities are mostly provided in the retail centres of Jerrabomberra, Calwell and Chisholm Village.
- A range of affordable housing options – see Section 2.
- SJ provides an option for households looking for affordable housing in southern and eastern parts of the ACT-QCC region. The other planned land releases in this region over the next decade are all in the northern and western parts of the region, with very little on offer for households looking for new, affordable land releases near the southern employment zones of Tuggeranong Town Centre and Hume.

**Figure 3.1: Location of South Jerrabomberra**


Note: Spatial boundaries ©Commonwealth of Australia

# 4 Airport traffic and freight hub

Prior to discussing the details of future traffic and freight at Canberra Airport, it is important to put to rest some claims by Canberra Airport management, which have said in media reports that Access Economics has misconstrued figures relating to the airport's noise forecasts. This is not the case. Rather, it reflects the manner in which the Airport has created and presented its forecasts:

- Canberra Airport has produced a noise forecast based on the 'Practical Ultimate Capacity' of the airport. (Though 'practical' in this case does not, in our view, adequately factor in some practical considerations such as fog or bad weather.)
- Canberra Airport has also said in its Master Plan that it expects this level of traffic to be reached 'between 2050 and 2060'. Hence, Canberra Airport has attempted to link its assessment of ultimate capacity with its expectations of demand.
- At other public hearings and forums, Airport management have distanced themselves from the 'Practical Ultimate Capacity', by saying it is a measure of capacity and not a level of traffic they expect to achieve in the foreseeable future and certainly not in the life of the current 20 year Master Plan. As such, Canberra Airport changes its view – depending on the context and the audience – as to whether its noise forecasts will ever be achieved or are achievable, or whether it relates to capacity versus demand.
- In reality, the noise forecasts produced by the airport are a theoretical construction that will never be achieved in practice. The contours are the outer envelope of three sets of noise contours – based on three different aircraft navigation patterns – of which only one can be true at any one time.
- While the guidelines for producing noise forecast do raise the option of using a 'Practical Ultimate Capacity' forecast, the guidelines appear to intend this in the context of the capacity of a new major development (such the noise generated once a new parallel runway was built and traffic ramped up to a mature level), and was presumably not envisaged to be a far-reaching forecast beyond 2050 for an existing runway.
- The noise projections have only been assessed for technical accuracy (ie that the computations were correct) by Airservices Australia. The underlying assumptions in the noise forecasts have never been independently reviewed and endorsed to the usual professional standards that would apply in any normal peer review process. It was assessed against a 'legal bare minimum' standard, not against professional norms.

Due to the complexity of these issues of demand versus capacity versus 2029 Master Plan versus post-2050 demand levels, it can be confusing to a lay reader to determine what the noise forecasts in the Canberra Airport Master plan actually relate to and how to interpret these.

Access Economics has called for greater clarity in the following areas:

- A noise forecast should be produced for 2029 so that it matches the timescale of the Master Plan. A noise forecast that will not be reached until after 2050 is too far into the future and too uncertain to be a useful tool for decision making.
- The noise forecasts should be independently assessed by a competent organisation. The current noise forecasts are implausible and are based on many dubious assumptions.

- The noise forecasts should be based on reasonable expectations of future aircraft technologies and aircraft types.

Access Economics has a deep appreciation of the various definitions and assumptions used by Canberra Airport in creating its noise forecasts. Claims by the management of Canberra Airport that Access Economics has 'misconstrued' their noise forecasts is only an attempt to dismiss the valid criticisms by Access Economics of Canberra Airport's approach to informing the community in relation to when, where and to what extent future noise exposures will occur.

## 4.1 Airport traffic

As discussed above, the proposed development at SJ and the Canberra Airport can coexist. People living in SJ will experience aircraft noise intrusion that is 'acceptable' or 'conditionally acceptable' according to the current Australian Standard (AS2021-2000) and the Airport's own (and hence worst-case) forecasts. The proposed noise attenuation measures for housing in SJ will ensure the conditions are met to make housing in the 'conditionally acceptable' zone become 'acceptable'. By 'acceptable' the Standard explains that other sources of suburban noise would predominate over aircraft noise.

The first tranche of SJ development at South Tralee is largely inside the 'acceptable' zone with a small component in the 'conditionally acceptable' zone.

That noted, there are several reasons why the level of noise experienced in SJ will be lower than projected by Canberra Airport.

Firstly, in accepting the Airport's master plan, the Commonwealth Minister for Infrastructure, Transport, Regional Development and Local Government specifically noted that Canberra Airport's aspirations to be an overflow for Sydney Airport was not accepted and would be the subject of a subsequent review and decision by the Minister.

The Freight Hub component of the Airport's aspirations has a low probability of occurring. Canberra is far from a natural location for an air freight hub (Brisbane or Melbourne would be more likely, as Sydney hits capacity). There are insufficient locally-originating exports, or locally-destined imports, for Canberra to be a logical location for a major freight facility.

Freight Hub proposals are far from unique in inland NSW and the ACT. Virtually every inland town in NSW has aspirations to be a freight hub. The list of aspiring freight hubs include: Parkes; Dubbo; Wagga Wagga; Gunnegah, Tamworth, Glen Innes and Albury. Like Canberra Airport's master plan, all of these towns claim to be the natural hub location at the centre of spokes to Melbourne, Sydney, Adelaide and Brisbane.

The freight hub proposal by Canberra Airport fails to explain why bringing a lot of freight to Canberra, unloading it, reloading and flying it back out to somewhere else will be a cheaper way of getting that freight to where it needs to go. Rather, flying the freight directly from Point A to Point B is almost always the cheapest way of getting it there. Detouring via Canberra is rarely going to be a cheaper way of moving freight from Point A to Point B (regardless of where those end points are located).

The most expensive part of aircraft operations are the takeoff, landing, unloading and reloading. Once in the air, cruising is very economical. Compared with flying direct, hubbing through Canberra will require an additional landing, unloading, reloading and takeoff for each aircraft full of freight. This is not only true of non-talking cargo, but as Qantas, Virgin Blue and JetStar have shown in the case of their talking cargo, flying direct is always best. The number of new hub-busting routes that bypass Sydney (like Canberra-Perth, Brisbane-LA, Adelaide-Auckland, Canberra-Gold Coast and many more) are clear proof that as the aviation industry matures – generating sufficient demand for direct services – that indirect (or 'hubbing') services tend to reduce as a proportion of total traffic.

Hubbing was a transitory phase in the aviation industry. It was a necessary 'second-best' solution when there was not enough demand to support direct services, so transiting through Sydney was necessary to aggregate demand into a viable service. As the industry has grown, connecting traffic has declined as a share of total traffic and direct services have increased as a share of total traffic. Whenever demand is sufficient to support direct services, point-to-point services are the 'first-best' outcome, from the perspective of cost, carbon emissions and total time-in-transit. ACT-QCC residents have been major beneficiaries of the growth in direct services, which has lessened the proportion of times they have to connect through Sydney, compared with a few decades ago.

As such, the Freight Hub aspirations should be heavily discounted in any rigorous evaluation of development at SJ. It has a very low probability of succeeding. And even if an inland air freight hub does develop (against the odds) it could be at Parkes, or elsewhere, rather than at Canberra Airport.

For the people of the Canberra region, it is future direct (or 'point-to-point') flights like Canberra-Singapore and Canberra-Auckland that will generate the most benefit to the local community. There is little to be gained by the local community from handling large volumes of connecting traffic.

Even if the Airport's freight hub proposal and Sydney overflow proposal proceed, it takes 50 years for the full noise impacts to be reached and even then, SJ is still located in the 'acceptable' and 'conditionally acceptable' noise zones according to the already stringent Australian Standard.

The Australia Standard for aircraft noise is already one of the more stringent in the world. The relevant standards in Canada, the United States, France and much of Germany (among others) currently allow residential development much closer to airports (as measured by higher ANEF contours) than the current Australian Standard.[3] So, by the Standards of other developed nations, let alone Australia's own Standard, SJ houses (with attenuation measures in place in the conditionally acceptable parts of SJ) are well within an acceptable zone for residential development.

Additionally, the noise standard for aircraft noise intrusion is more stringent than the relevant NSW Planning draft guidelines for buildings subject to noise intrusion from roads and railways. That is, a lower degree of noise attenuation is required for houses located near roads and railways, than for an equally 'noisy' house located near an airport.

[3] See for example http://www.infrastructure.gov.au/aviation/nap/files/GILLESPIE_D.pdf

As shown in Section 2, the employment benefits from the construction activity at SJ are significant and outweigh the likely employment benefits of any night time freight operations, which would have local employment impacts in the tens or hundreds, not thousands. The cost to the economy of not proceeding with SJ amounts to $1.25 billion per annum in Gross Regional Product. If the development goes ahead, the associated construction activity would generate 3,300 person-years of full time employment. Missing out on these benefits of SJ is also unnecessary, because SJ and the Freight Hub can coexist.

# 5 Review of approval process

The Queanbeyan City Council (QCC) and NSW Department of Planning are currently processing the rezoning application for SJ. This type of rezoning would normally be uncontroversial and straightforward, were it not for objections by Canberra Airport. The Commonwealth Government has also intervened, proposing a (constitutionally uncertain, and possibly paternalistic) Commonwealth veto over new residential developments near aircraft flight paths. The debate about SJ has been colourful – from the Airport's mail out of earplugs, billboards, ACT government objections about water and the fiscal impacts of NSW residents using ACT services. The decision about rezoning SJ is now into its eighth year. It is now time for an evidence-based decision to be made, based on a dispassionate, objective review of the facts.

At the core of the debate is Canberra Airport's concern that the SJ development would result in a curfew or other such operational restrictions on the airport's growth. The proposed residential component of the development is located in an area 10 to 12 kilometres from the airport and is in an area defined as 'acceptable' and 'conditionally acceptable' under the current Australia Standard for aircraft noise intrusion and attenuation. As discussed in Section 4, the actual noise exposure is likely to be considerably smaller than the worst-case projections of Canberra Airport. Provided the new residents of SJ are fully informed in advance of the potential noise impacts and noise attenuation requirements, they can judge for themselves whether living in SJ will be right for them.

For example, the ACT Government recently released new land at East O'Malley, close to the Hindmarsh Drive road corridor – a busy six-lane main road in Canberra. Noise attenuation requirements were specified in the development conditions for some houses on Wallangara Street (the O'Malley street closest to Hindmarsh Drive). Development was able to proceed and the new houses now coexist with Hindmarsh Drive.

## 5.1 Insecure property rights and the political process

The lack of security over property rights, and inconsistent processes for how issues of noise externalities from aircraft are dealt with in planning law, are the main underlying reasons behind the ongoing tension between Canberra Airport and the proposed development at SJ.

The debate over aircraft noise is often clouded by emotion and unjustified fears, however the actual underlying problem with aircraft noise over residential areas is simply one of negative externalities, of which there are many equivalent examples throughout urban land use. A range of infrastructure assets generate negative externalities, including roads, railways and power lines. Buyers of land near such infrastructure know the infrastructure exists and that it cannot be moved through political lobbying, either at the time of buying or in the future. Depending on their personal preferences, their willingness to pay for that land may change accordingly and, aggregated across the preferences of many potential buyers and sellers, the value of the land may be lower. Sympathetic development can occur nearby, but the infrastructure remains. This gives both the property owner and the infrastructure owner certainty.

Most importantly, the planning principle of 'agent of change' should remain firm in the case of SJ. In summary, this principle applied to residential housing states that the responsibility for removing negative externalities on residential housing only rests with those who cause it if they move to an area where residential housing already occurs (as was the case with the parallel runway at Sydney Airport – the new runway came *after* the surrounding residential development, hence a curfew was imposed). The owners of the residential housing have no claim to compensation or the externality being removed (or removed without adequate compensation to the infrastructure owner) if they move in to an area already subject to that externality, rather than the externality being imposed on them after they moved in.

Canberra Airport's fear is that these normal planning processes, and the principle of 'agent of change' won't hold in perpetuity in the case of a residential development at SJ. In short, the airports sole fear of residential development at SJ is that what is essentially their rights to the airspace and flight paths as embodied in their 2008 ANEF zones are not secure – that if residential development occurs now at SJ, residents at some point in the future will seek to use political power to change the rules over which the airlines and airport has to operate (and reverse the normal planning principle, where the 'agent of change' pays the cost). To avoid this future potential, they (the Airport) seek to prevent any residential development occurring in the flight paths now, at great cost to others and with a significant negative economic impact on the ACT-QCC region.

With Canberra Airport's flight paths and operations already embodied in the contours generated by the ANEF system, and provided buyers of land at SJ are fully informed of this prior to purchase, there appears to be an extremely remote probability that development at SJ could ever impact on the Airport's operations.

By ensuring all parties are fully informed prior to purchase, and by ensuring the 'agent of change' principle holds firm, the Airport and SJ can coexist.

## 5.2 Issues with the process

The above discussion has highlighted problems with the process for rezoning land near airports for residential development – and some possible solutions.

There are other issues with process: the current system provides no incentives for airports and airlines to invest in better technology to reduce their noise impacts. Rather, they are allowed to continue emitting noise without any target path or incentive for noise emission reduction. Would enforceable targets for reducing noise emissions per passenger carried by (say) 20% by 2020 result in a better outcome for society as a whole?

In a society where people are trying to reduce their carbon emissions, reduce their water usage, increase their recycling and so forth, it is curious that the aviation industry is able to not only emit noise unabated, but have carte blanche over the amount of noise it will emit in the future. Of course, any such reduction policies need to be carefully assessed and evidence-based, as the Productivity Commission noted in its critique of 'Zero Waste' initiatives. If the evidence supports it, there may be a need for the aviation industry to face incentives to improve (and possibly penalties if it does not improve) its noise emission performance, just as every other industry faces – or will face over coming decades – incentives to improve (and penalties if they do not improve) their performance in relation to carbon emissions, water usage and the like.

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# Appendix A: Model assumptions and data

## Table A.1: Housing affordability and commuting costs model assumptions

| Variable | Model Input | Basis | Source |
|---|---|---|---|
| **Indexing (per annum):** | | | |
| Nominal discount rate | 5.51% | 10 year government bond, 40 day average | Reserve Bank of Australia (www.rba.gov.au) |
| Average inflation rate | 2.36% | 10 year government linked bond, 40 day average | Reserve Bank of Australia (www.rba.gov.au) |
| Average mortgage interest rate | 7.28% | RBA standard bank variable home loan rate, 10 year average to July 2009 | Reserve Bank of Australia (www.rba.gov.au) |
| **Real capital growth rates (per annum):** | | | |
| Inner suburbs | 1.00% | Assumption | |
| Urban fringe | 0.50% | Assumption | |
| **Loan parameters:** | | | |
| Term length (years) | 30 | Assumption | |
| Typical min deposit, excl fees & duty (% of capital value) | 10% | Minimum deposit required | http://www.loanmarket.com.au/home-loans/deposit/ |
| Min equity (% of capital value) to avoid mortgage insurance | 20% | Minimum equity required to avoid mortgage insurance | http://www.loanmarket.com.au/home-loans/deposit/ |
| Savings as at 1-Dec-09 | $41,000 | Assumption (10% deposit on assumed value of 'affordable' house in urban fringe) | |
| Legal fees | $800 | Standard fees | www.allhomes.com.au |
| Loan application fees | $655 | Standard fees | www.allhomes.com.au |
| **Capital (property) values:** | | | |
| Competitive market, urban fringe | $410,000 | Assumption relative to uncompetitive market | BIS Shrapnel, www.allhomes.com.au |
| Uncompetitive market, urban fringe | $450,000 | Low end price of house and land package in Casey (new Gungahlin estate) | www.allhomes.com.au |
| Inner suburbs | $572,000 | Median non-unit property price in Curtin, 2009 | www.allhomes.com.au |
| **Rental costs ($/week):** | | | |
| 2 bedroom house | $340 | Median rent in Kambah (central suburb), 2009 | www.allhomes.com.au |
| 3 bedroom house | $380 | Median rent in Kambah (central suburb), 2009 | www.allhomes.com.au |
| **Household income and expense:** | | | |
| Minimum wage ($/hr) | $14.31 | 2009 federal minimum wage | Australian Fair Pay Commision (http://www.fairpay.gov.au/) |
| Hours worked per week | 38 | Standard full time worker assumption | |
| Hours worked per week - part time worker with dependent children, eldest 5 to 14 | 25 | Assumption | |
| Hours worked per week - part time worker with dependent children, eldest under 5 | 15 | Assumption | |
| Weekly expenses | | Variable dependent on family composition | ABS Cat. No. 6530.0 Household Expenditure Survey, 2003-04 |
| Mean equivalised disposable income | | Variable dependent on family composition | ABS Cat No. 6523.0, Household Income and Income Distribution, 2007-08 |
| **Travel time related assumptions:** | | | |
| Commuting costs ($/km) | $0.74 | Average maintenance costs for ordinary car - 1.6L to 2.6L - 2008-09 tax year | Australian Taxation Office (http://www.ato.gov.au/individuals/content.asp?doc=/content/33874.htm) |
| Carbon cost ($/km) | $0.012 | Cost of carbon-equivalent emissions based on current CPRS targets | Australian Greenhouse Office, AE modelling of carbon cost in 2030 of $50/t |
| Value of travel time savings ($/hr) | $23.54 | 60% of male total average weekly earnings - excludes part-timers, includes overtime | Refer Appendix B (VTTS literature) |

**Table A.2: Stamp duty schedule**

| Value of Property | | Duty | | |
|---|---|---|---|---|
| Minimum | Maximum | Base payment | Rate (% property value) | Minimum |
| $0 | $100,000 | | 2.00% | $20 |
| $100,001 | $200,000 | $2,000 | 3.50% | |
| $200,001 | $300,000 | $5,500 | 4.00% | |
| $300,001 | $500,000 | $9,500 | 5.50% | |
| $500,001 | $1,000,000 | $20,500 | 5.75% | |
| $1,000,001 | | $49,250 | 6.75% | |

Source: ACT revenue office - http://www.revenue.act.gov.au/duties/land_and_improvements

**Table A.3: Home buyer concession**

| Dutiable Value | | Duty | |
|---|---|---|---|
| Minimum | Maximum | Rate (% property value) | Minimum |
| $0 | $339,500 | | $20 |
| $339,501 | $415,000 | 20.95% | $20 |

| Dependent children | Income Threshold |
|---|---|
| 0 | $120,000 |
| 1 | $123,330 |
| 2 | $126,660 |
| 3 | $129,990 |
| 4 | $133,320 |
| 5 or more | $136,650 |

Source:http://www.revenue.act.gov.au/home_buyer_assistance/home_buyer_duty_concession/1_july_2009_-_31_december_2009

The home buyer concession is applicable to households whose combined income over the one year time period prior to the home buyer concession grant date is below the relevant income threshold and whose property value is within the dutiable value thresholds

## Access Economics in-house forecasting models

Forecast data on key income series, and interest and inflation rate indices are taken from Access Economics in house macroeconomic forecasting model (AEM). The model is based on historical ABS data and forecasts Australian macroeconomic quarterly indicators to June 2020. Average long term rates, as presented in the assumptions table are used to expand the series thereafter.

## Value of Time Travel Savings (VTTS)

The VTTS has been extensively researched and documented over the past 30 years. Over this time, a range of quantitative theories and empirical ideas have entered the debate. Most studies, however, that develop estimates of the VTTS for car travel assume that a mean VTTS relating to the driver of the vehicle is the relevant measure of the worth of time savings.

A study conducted at the University of Sydney (ITLS 2006) found that the overall mean VTTS varies with the number of passengers (from $19.99 to $13.22 per person hour), declining as the number of passengers increases. Although passengers may well value their own time

savings, the evidence and quantitative analysis for this is limited. Another arm of the debate is the idea that people value consistent time savings more highly than variable time savings. In other words, if the time spent travelling from point A to point B tends to have large deviations either side of the mean then travel time saved is valued less as the individual would still have to leave home at the same time to ensure on-time arrival.

A study at the Queensland University of Technology (QUT 2002), reviewed a wide range of the existing literature on VTTS. The results suggested 40% to 50% of average wage rates seems to be widely accepted for non-business trips (where 'business' trips are those made during employers' time, thus driving to and from work is technically a non-business trip). Business trips tend to be valued more highly at 80% to 100% of the wage rate. The Transport model used by the University for the analysis uses a single value of time of $12/hr (significantly lower then the ITLS study).

> For the purposes of this cost analysis, Access Economics has assumed that the value of travel time savings is 60% of the Male Total Average Weekly Earnings (MTAWE – a commonly accepted estimate for full-time wages) or $23.54/hr in 2009 dollars.

## Commuting Costs

Calculated commuting costs are a function of annual (additional and/or total) distance travelled and time taken driving between the workplace and home, and the assumed unit cost for each measure, indexed over time.

$$Distance\ Costs_t = D \times UC_t \times (1+f)^t$$

$$Where, t = time\ index\ (t = 0\ at\ 2009)$$

$$D = distance\ travelled\ per\ annum\ (kms)$$

$$UC = Unit\ Cost\ of\ distance\ travelled\ (\$/km)$$

$$f = inflation\ rate\ per\ annum$$

And

$$Travel\ Time\ Costs_t = TT \times UC_t \times (1+f)^t$$

$$Where, t = time\ index\ (t = 0\ at\ 2009)$$

$$TT = Travel\ time\ per\ annum\ (hours)$$

$$UC = Unit\ Cost\ of\ time\ spent\ travelling\ (\$/hr)$$

$$f = inflation\ rate\ per\ annum$$

## Commuting – carbon costs

The carbon cost added to the direct cost of operating a car is based on the amount of carbon equivalent emissions (ie carbon, nitrous oxide and methane), using the methods in the Australian Greenhouse Office *National Greenhouse Accounts (NGA) Factors*.

The data shows that a car releases around 2.3kg of $CO_{2\text{-}e}$ per litre of petrol consumed. For an average car using 10 litres per 100km, that is 230 grams of $CO_{2\text{-}e}$ per kilometre. Access Economics modelling of carbon costs in 2030 based on the current Carbon Pollution Reduction Scheme is a cost of $50 per tonne of $CO_{2\text{-}e}$.

Hence, a car emits $0.012 per kilometre worth of carbon-equivalents.

# Appendix B: Review of Canberra Airport Master Plan

The attached document provides a detailed review of the issues with the Canberra Airport Master Plan and the reasons why the noise levels experienced by residents of South Jerrabomberra are likely to be lower than predicted in the ANEF maps in the Canberra Airport Master Plan.

That noted, even if aircraft noise is similar to the worst case scenario provided by Canberra Airport, the development at SJ is still in the zones considered 'acceptable' and 'conditionally acceptable' under the current Australian Standard for buildings subject to aircraft noise intrusion (AS2021-2000). The proposed noise attenuation measures for houses in SJ ensure the conditions in the Standard are met for houses in the 'conditionally acceptable' zone to be deemed 'acceptable'.