

# The Impact of Aircraft Noise on Brisbane Residential Property Sectors: 1988-2015

2015 BRISBANE RESIDENTIAL PROPERTY  
INVESTMENT PERFORMANCE UPDATE

QUT, School of Civil Engineering and Built Environment



[qut.edu.au](http://qut.edu.au)

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# 1. Introduction

The following Tables present the 2015 update for the various suburbs covered in the original 2013 analysis of the Brisbane residential property market. Again, this updated analysis compares the investment performance for a range of suburbs in Brisbane with varying affectation by aircraft noise as well as suburbs that have no aircraft noise impact or could be subject to aircraft noise when the new parallel runway commences operations.

With the addition of the 2015 residential property sales transactions, the investment performance analysis now covers the years 1988 to 2015, a 28-year period. Over these twenty-eight years, the Brisbane residential property sector has been subject to periods of housing booms and recessions; therefore, the results reflect an accurate overview of the investment performance of each of the suburbs in the study.

This updated analysis covers the 36 suburbs classified as High Noise Complaints (HNC), Moderate Noise Complaints (MNC) and No Noise Complaints (NNC), and again the middle socioeconomic suburbs in the HNC locations are compared to the middle socio-economic suburbs in the MNC and NNC suburb locations.

Results are also updated for a residential home units/townhouses located in the 36 HNC, MNC and NNC suburbs.

In addition to the investment performance analysis based on suburb exposure to aircraft noise, the update also compares the investment performance for individual suburbs located under the current south and north flight paths, suburbs that will be subject to flight paths when the new runway operations commence and suburbs that are currently not affected by aircraft noise and will remain so when the new runway opens.

In all cases the analysis is based on both the annual median house price and the annual average house price for each of the suburbs analysed. The investment performance analysis comprises:

- » 2015 capital return (median house price)
- » 2015 capital return (average house price)
- » 1988-2015 capital return (median house price)
- » 1988-2015 capital return (average house price)
- » 2015 capital return (median unit price)
- » 2015 capital return (average unit price)
- » 1988-2015 capital return (median unit price)
- » 1988-2015 capital return (average unit price)
- » Average annual volatility (median and average house and unit price)
- » Risk/Return Ratio

The base data for the years 1988 to 2013 can be found in the full QUT/BAC report released in 2014, with the 2014 data update available in a separate report dated November 2015. Both of these reports are available for download from the Brisbane Airport website, [bne.com.au](http://bne.com.au).

# 2 Suburb Comparison (High, Moderate and Minimal/ No noise complaints)

**Table 1: Capital Return and Investment Performance: Median Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%)1988-2015	Average Annual Volatility (%)	Risk return Ratio
High Noise	4.49	8.57	9.16	1.07
Moderate Noise	5.29	8.92	8.98	1.01
No/Low Noise	5.18	7.51	8.32	1.11
Brisbane LGA	2.94	7.29	8.18	1.12

As per the 1988-2013 analysis, the suburbs in the HNC and MNC classification have continued to outperform the NNC suburbs, as well as the Brisbane median house price. The 2015 capital return of 4.49% and 5.29% were both well

above the Brisbane average of 2.94%, This has resulted in a continuing trend of increasing returns for these suburbs over the full 28 year period, compared to the Brisbane Median.

**Table 2: Capital Return and Investment Performance: Average Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%)1988-2015	Average Annual Volatility (%)	Risk return Ratio
High Noise	2.65	8.60	9.41	1.09
Moderate Noise	5.71	8.56	10.08	1.18
No/Low Noise	3.47	7.32	8.049	1.16
Brisbane LGA	2.94	7.29	8.18	1.12

The 2015 annual capital return for residential property in the HNC and NNC suburbs based on average prices was lower than the median house price returns. In the MNC suburbs the average price returns were slightly higher at

5.71%. Risk/Return ratios remain at similar levels to the previous two reports for both median and average house prices (Refer to Tables 1 and 2).

# 3 Suburb Comparison: Houses (High Noise Complaint Suburbs v Middle Socio Economic Suburbs)

**Table 3: Capital Return and Investment Performance:  
Median Price 1989-2015: HNC v Middle Socio-economic suburbs**

Location	2015 Capital Return (%)	Average Annual Capital Return (%) 1988-2015	Average Annual Volatility (%)	Risk return Ratio
High Noise Suburbs	4.49	8.57	9.16	1.07
Middle socio Economic Suburbs	3.40	8.22	9.23	1.12
Brisbane LGA	2.94	7.29	8.18	1.12

Table 3 shows the investment performance of the middle socio-economic suburbs in the HNC classification compared to similar value suburbs in the MNC and NNC classifications. From this Table it can be seen that when

similar value suburbs are compared, the suburbs subject to high levels of aircraft noise and under existing Brisbane Airport flight paths have returned higher capital returns for 2015 as well as the period 1988-2015.

**Table 4: Capital Return and Investment Performance:  
Average Price 1990-2014: HNC v Middle Socio-economic suburbs**

Location	2014 Capital Return (%)	Average Annual Capital Return (%) 1988-2015	Average Annual Volatility (%)	Risk return Ratio
High Noise Suburbs	2.65	8.56	9.38	1.10
Middle socio Economic Suburbs	-1.18	7.27	8.09	1.20
Brisbane LGA	2.94	7.29	8.18	1.12

These returns for 2015 are significantly greater than the returns for the less and no noise affected middle socio-economic suburbs. These HNC suburbs have also shown a better risk/return ratio of 1.07, lower than both the other suburbs analysed and the Brisbane median price average. This difference between the higher returns for the HNC middle value suburbs is also repeated when the analysis is based on average house prices (Refer to Table 4).

Table 5 shows the percentage difference between average annual house prices for the middle value HNC suburbs and the middle value MNC and NNC suburbs based on median and average house prices. This table shows that the trend of higher median and average house prices for the HNC suburbs has continued when compared to the two previous reports. The higher capital return for HNC houses in 2015 has now resulted in the average annual percentage difference from 1988 to 2015 being positive for both median and average house prices. In 2014, this figure was slightly negative based on average house prices.

**Table 5: Annual % Variation between HNC Suburbs and Middle Socio-economic suburbs: Median Price and Average Price: 1988-2014**

Year	Median Price Comparison (%)	Year	Average Price Comparison (%)
1988	-1.23	1988	-19.27
1989	3.06	1989	-12.88
1990	-2.54	1990	-10.79
1991	-6.92	1991	-8.90
1992	-3.70	1992	-4.76
1993	1.45	1993	3.40
1994	0.69	1994	2.55
1995	2.13	1995	0.00
1996	-6.00	1996	-11.05
1997	4.83	1997	3.73
1998	-4.91	1998	-5.46
1999	0.00	1999	-1.10
2000	7.27	2000	0.00
2001	7.50	2001	5.86
2002	7.69	2002	8.57
2003	6.81	2003	9.57
2004	3.54	2004	3.41
2005	3.51	2005	6.31
2006	2.50	2006	2.48
2007	7.37	2007	5.50
2008	3.70	2008	4.53
2009	1.89	2009	-2.46
2010	3.15	2010	2.54
2011	3.88	2011	2.52
2012	4.70	2012	2.00
2013	4.46	2013	2.04
2014	6.78	2014	6.22
2015	7.58	2015	9.38
Average Annual Difference	+2.47	Average Annual Difference	0.14

# 4 Suburb Comparison: Units (High moderate and minimal/no noise complaints)

**Table 6: Capital Return and Investment Performance: Median Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%)1988-2015	Average Annual Volatility (%)	Risk return Ratio
High Noise	2.30	6.53	8.22	1.26
Moderate Noise	3.21	6.42	7.26	1.13
No/Low Noise	-3.00	6.41	9.23	1.44
Brisbane LGA	-5.49	5.85	9.17	1.57

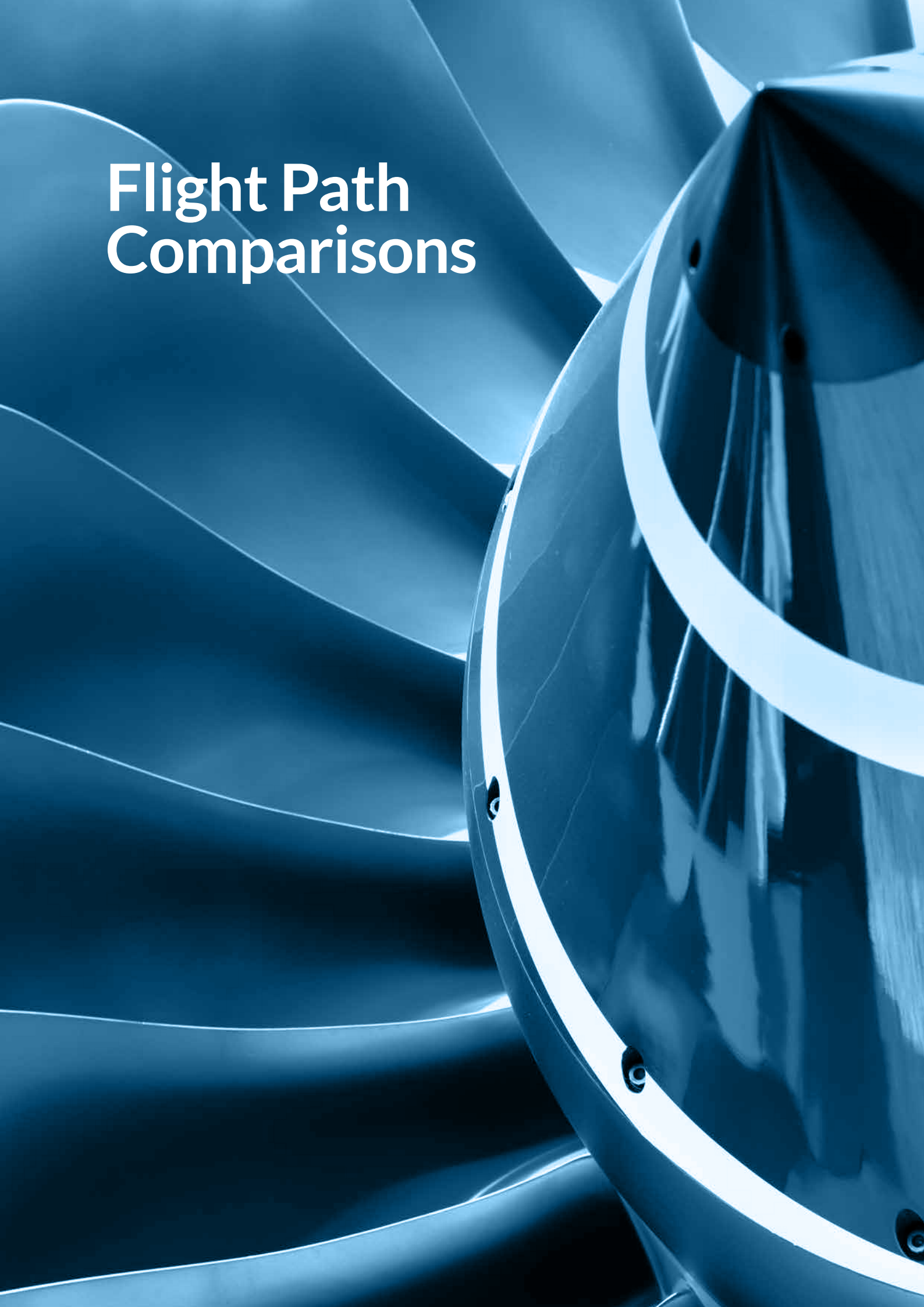
**Table 7: Capital Return and Investment Performance: Average Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%)1988-2015	Average Annual Volatility (%)	Risk return Ratio
High Noise	7.64	6.33	6.41	1.01
Moderate Noise	3.33	6.13	6.29	1.03
No/Low Noise	6.18	5.31	13.18	2.48
Brisbane LGA	-5.49	5.85	9.17	1.57

Units in the HNC suburbs still continue to outperform units in the MNC, NNC suburbs and the Brisbane median and average unit based on average annual capital returns. Although the capital return for HNC units in 2015 was

lower than the MNC suburbs based on median price, this was not the case when the analysis is carried out with average unit prices.

# Flight Path Comparisons

A blue-tinted close-up photograph of a jet engine fan. The fan blades are visible, and a white, glowing flight path is overlaid on the right side of the image, curving around the engine's structure. The text "Flight Path Comparisons" is written in white in the upper left corner.

# 5 Suburb Street Comparison: Southern Flight Path: Varying Distances

The following tables represent the investment performance for individual suburbs based on their location under and away from existing and proposed aircraft flight paths. These suburbs range from lower socio-economic

suburbs in the middle and outer rings of Brisbane to the upper middle and high socio-economic suburbs in the inner ring locations of Brisbane.

**Table 8: Capital Return and Investment Performance: Median Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%)1988-2015	Average Annual Volatility (%)	Risk return Ratio
Camp Hill	-1.01	9.39	13.62	1.42
Coorparoo	6.39	9.40	13.14	1.40
Tarragindi	6.92	8.76	10.17	1.16
Mt Gravatt East	5.27	8.14	9.41	1.16
Brisbane LGA	2.94	7.29	8.18	1.12

Based on median house prices, the capital return for houses in Coorparoo, Taragindi and Mount Gravatt East ranged from 5.27% to 6.92%, with both Taragindi and Coorparoo being under the south flight path and HNC suburbs. When average house prices for 2015 are

compared all these suburbs under the southern flight path had significant capital growth of 4.80% (Camp Hill) to 14.36% (Coorparoo). All suburbs in this section of the analysis recorded 2015 returns greater than the Brisbane average.

**Table 9: Capital Return and Investment Performance: Average Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%)1988-2015	Average Annual Volatility (%)	Risk return Ratio
Camp Hill	4.80	9.34	12.80	1.37
Coorparoo	14.36	9.52	14.32	1.44
Tarragindi	10.90	8.92	10.39	1.17
Mt Gravatt East	9.98	8.18	10.09	1.23
Brisbane LGA	2.94	7.29	8.18	1.12



# 6 Suburb Street Comparison: Northern Flight Path: Varying Distances

Tables 10 and 11 show the investment performance analysis for a range of suburbs under the existing Brisbane Airport northern flight paths. These tables show that in 2015 the higher value suburbs of Bulimba, Gordon Park

and Bardon had a negative or low capital return for both median and average house prices. This followed similar positive gains in 2014.

**Table 10: Capital Return and Investment Performance: Median Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%)1988-2015	Average Annual Volatility (%)	Risk return Ratio
Bulimba	-21.25	11.78	20.55	1.74
Gordon Park	-8.70	9.39	10.74	1.14
Albion	7.51	10.51	20.36	1.94
Chermside West	0.95	6.41	11.54	1.80
Ashgrove	4.43	8.64	9.55	1.10
Bardon	-0.47	8.73	11.05	1.27
Brisbane LGA	2.94	7.29	8.18	1.12

**Table 11: Capital Return and Investment Performance: Average Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%)1988-2015	Average Annual Volatility (%)	Risk return Ratio
Bulimba	-23.77	10.978	18.84	1.72
Gordon Park	-1.17	9.35	9.60	1.03
Albion	17.38	10.29	18.34	1.78
Chermside West	3.79	6.47	10.85	1.68
Ashgrove	0.55	8.64	10.00	1.16
Bardon	1.56	8.81	10.88	1.24
Brisbane LGA	2.94	7.29	8.18	1.12

# 7 Suburb Street Comparison: Proposed New Flight Path

The variation in capital returns and investment performance are also evident in 2015 in the suburbs that will be under a flight path when the new runway is operational. These suburbs have no aircraft noise

at present and in the case of both Hamilton and Stafford have shown negative capital returns for 2015, with Annerley recording a low capital return in 2015 of 1.86%.

**Table 12: Capital Return and Investment Performance: Median Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%) 1988-2015	Average Annual Volatility (%)	Risk return Ratio
Hamilton	-2.99	11.00	22.65	2.06
Stafford	-2.63	8.32	11.08	1.33
Annerley	1.86	8.41	10.22	1.21
Brisbane LGA	2.94	7.29	8.18	1.12

On an average house price basis, only Stafford recorded an negative 2015 capital return (-5.98%). Annerley had a more significant capital return based on average house prices of 6.19%. As was the case in the 1998-2013 and

2014 analysis, these annual returns are more in line with the socio-economic status and location of the suburbs to schools, transport etc rather than location under flight paths.

**Table 13: Capital Return and Investment Performance: Average Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%) 1988-2015	Average Annual Volatility (%)	Risk return Ratio
Hamilton	2.11	9.56	18.35	1.92
Stafford	-5.98	8.55	11.44	1.34
Annerley	6.19	8.82	12.70	1.44
Brisbane LGA	2.94	7.29	8.18	1.12

# 8 Suburb Street Comparison: No Flight Path

In 2015, the highest capital growth was in the suburb of New Farm. This is a high value, inner city suburb, with access and views of the Brisbane River, this suburb achieved similar growth in 2015, as the other river front suburbs recorded in 2014.

**Table 14: Capital Return and Investment Performance: Median Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%)1988-2015	Average Annual Volatility (%)	Risk return Ratio
New Farm	17.23	12.50	15.93	1.27
Woolloowin	8.23	8.67	10.45	1.20
Mitchelton	10.19	8.56	9.85	1.15
Mansfield	11.59	7.38	9.83	1.33
Brisbane LGA	2.94	7.29	8.18	1.12

**Table 15: Capital Return and Investment Performance: Average Price 1988-2015**

Location	2015 Capital Return (%)	Average Annual Capital Return (%) 1988-2015	Average Annual Volatility (%)	Risk return Ratio
New Farm	22.91	12.58	15.13	1.20
Woolloowin	11.10	8.02	8.91	1.03
Mitchelton	4.44	8.86	11.41	1.29
Mansfield	10.89	7.67	11.86	1.55
Brisbane LGA	2.94	7.29	8.18	1.12

When the capital returns for a range of suburbs are analysed on a single year basis, there is always greater variation in the annual returns. This has been the case with the change in price and the capital return from 2014 to 2015. The results for 2015 year show a range in capital returns from -23% to + 22%, both in higher value suburbs. Generally the 2015 results show that the movement in

price from 2014 to 2015 was based on the socio-economic status of the suburb. The consolidated results for the period 1988-2015 continue to show higher capital returns for middle value suburbs under the current flight paths compared to similar value suburbs located away from flight paths and less convenient location to the CBD and other residential services that drive property values.

