



# **Review of Historic Urban Land Value Growth**

## **EAST COAST CAPITAL CITIES**

Prepared for Infrastructure Australia JULY 2013

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# EXECUTIVE SUMMARY

## 1.1 STUDY OBJECTIVES

Infrastructure Australia (IA) is undertaking work aimed at improving inter-governmental approaches to the identification and protection of infrastructure corridors.

Protecting infrastructure corridors and acquiring land at the “front end” of the project has the potential to save governments substantial sums of money when building new infrastructure. Any failure to protect corridors may mean that the relevant piece of infrastructure has to be placed in a tunnel (at a much higher cost) or its land take and future operational capacity curtailed. This higher cost represents an economic drag on the Australian community, as does the future economic impact if the project cost becomes so high that the project cannot proceed, or if other economic costs such as congestion are imposed on the Australian community.

IA has requested Urbis to review urban land price movements in Sydney, Melbourne and Brisbane (i.e. the East Coast Capital Cities) over long-term horizons in order to assist in demonstrating the potential project savings, and therefore future overall community benefit, from the protection and (possibly) early acquisition of infrastructure corridor land.

We have examined the long-term statutory land value growth trend for certain Land Use classes (being Standard Residential, Strip Retail, Small Industrial, Large Industrial and Rural Residential) within Inner, Middle and Outer bands or “Zones” radiating out from the Sydney, Melbourne and Brisbane CBDs.

The Land Use types adopted, we perceive, are those that are commonly acquired (subject to the timeframe of the actual acquisition after the infrastructure has been first mooted) by jurisdictions undertaking infrastructure projects such as motorways, arterial road widening, new rail corridors and associated infrastructure, trunk transmission line easements and associated infrastructure, water and sewer infrastructure, ports, airports etc.

In order to assist in identifying the influence of infrastructure announcements, infrastructure delivery, planning initiatives and economic impacts on the land value categories selected, we have undertaken an analysis of the annual running statutory land values of a small basket of established industrial properties within each urban zone, such properties remaining basically “as is” over the term of the study period.

Our study objectives, for each East Coast Capital City, are to identify the long-term annual growth rate trends for each Land Use type, and the urban Zones themselves, and then overlay this information with an analysis of known economic, and town planning policy, supply and demand drivers that appear to have influenced the market’s response to land pricing.

Our property baskets contain established, appropriately zoned and developed properties as opposed to speculative en-globo lands whose value characteristics and development status can fluctuate widely over any given study period. As such, we assume that the statutory land values analysed have already absorbed any secondary value drivers such as employment and economic growth expectations (i.e. Gross State Product) – although we have also charted the Consumer Price Index purely as a proxy for an investor’s minimum capital growth rate expectation.

Our approach is detailed more thoroughly at Section 2 of this report.

## 1.2 DISCLAIMER

Urbis has been commissioned by IA to undertake a Review of Historic Urban Land Value Growth – East Coast Capital Cities.

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The analysis contained in this report does not form the basis for valuation of any single property or of any land use type. The data utilised is aggregated data which is to be used as a trend basis only. Individual properties have individual characteristics which must be considered in any site specific valuation or analysis.

The historic trends concluded in this report are based on statutory land values obtained from the appropriate agencies or jurisdictions in each East Coast Capital City for a basket of actual properties.

## 1.3 SUMMARY OF FINDINGS

Our findings are presented firstly for the Sydney Basin. The summary tables below illustrate the estimated annual average land value growth rates (i.e. % per annum) for each Land Use type analysed within the Sydney urban Inner, Middle and Outer Zones.

We have then presented the same for Melbourne and Brisbane.

The tables cover a 20-year timeline and generally recognise the:

- Pre-Olympics growth period of 1993- 2000 (particularly pertinent for Sydney);
- High growth period post Olympics of 2001- 2007 which is attributable to strong domestic and global economic fundamentals being experienced during that period;
- Correction and slower economic period of 2008-2012, being the period after the Global Financial Crisis (GFC); and
- Overall 20-year analysis between 1993- 2012 that captures all market peaks and troughs during the study period.

The body of this report provides further analysis supporting our rationale.

### 1.3.1 SYDNEY URBAN BASIN

#### Sydney - Inner Zone (0-15km from CBD)

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE\*

TABLE 1

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	7.88%	10.53%	6.16%	8.38%
Small Industrial	1.68%	10.19%	0.82%	4.44%
Strip Retail	3.61%	0.75%	5.60%	3.11%
<b>Overall</b>	4.39%	7.15%	4.19%	<b>5.31%</b>
CPI (Sydney)	2.05%	3.20%	2.78%	2.63%
Capital Growth PA in Real Terms	2.34%	3.96%	1.42%	2.68%

Source : Urbis

Sydney experienced strong economic fundamentals in the lead-up to the Sydney Olympics, and a property boom across most sectors from this period until the GFC.

This is evident in Table 1, where Standard Residential (which is defined as land suiting traditional style detached dwellings on a freehold title) has out-performed, with a long term annual growth rate of 8.38% per annum, no doubt influenced by the desirability for inner city living.

Strip Retail (which is defined as land suiting retail or mixed use commercial activity located on a busy arterial roadway) has not grown as quickly, with a lower growth rate of 3.11% per annum, likely due to the influence of shopping centre development within the Inner Zone (e.g. regional centres such as Westfield Bondi Junction appear to have provided a detrimental impact) and the withdrawal of car parking lanes on major road arterials.

## Sydney - Middle Zone (15-30km from CBD)

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE\*

TABLE 2

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	6.72%	7.63%	3.50%	6.23%
Small Industrial	5.54%	9.97%	1.13%	5.99%
Large Industrial	1.63%	6.00%	-0.79%	2.55%
Strip Retail	4.32%	9.49%	6.07%	6.57%
<b>Overall</b>	4.55%	8.27%	2.48%	<b>5.34%</b>
CPI (Sydney)	2.05%	3.20%	2.78%	2.63%
Capital Growth PA in Real Terms	2.51%	5.08%	-0.30%	2.70%

\*Average, non-weighted

Source : Urbis

Sydney's Middle Zone Land Use categories demonstrate consistent growth rates of around 6.00% per annum except for the Large Industrial (which is defined as land suiting industrial activity of size in excess of 2 hectares) category which has under-performed.

Our observation is that industrial sector capital growth, outside of peak and trough fluctuations, is typically consistent with CPI (as is long-term industrial sector rental growth). A long-term annual growth rate of 2.55% for Large Industrial tends to confirm this.

Small Industrial (defined as land suiting industrial activity on land less than 2 hectares) and Large Industrial in Sydney's Middle Zone did however experience strong market interest in the 2001- 2007 period, but this was fuelled by higher investor activity and low cost of debt drivers and collapsed in the years immediately post the GFC.

All sectors except Strip Retail have exhibited subdued annual growth profiles since the GFC.

## Sydney - Outer Zone (>30km from CBD)

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE\*

TABLE 3

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	7.83%	7.79%	2.03%	6.37%
Rural Residential	7.10%	12.03%	-1.76%	6.61%
Large Industrial	11.98%	16.17%	-1.92%	9.97%
Strip Retail	-0.04%	7.97%	-0.13%	2.74%
<b>Overall</b>	6.72%	10.99%	-0.45%	<b>6.42%</b>
CPI (Sydney)	2.05%	3.20%	2.78%	2.63%
Capital Growth PA in Real Terms	4.67%	7.79%	-3.22%	3.79%

\*Average, non-weighted

Source : Urbis

Sydney's Outer Zone has produced the highest annual collective growth rate over the 20-year timeline of 6.42% per annum, driven by the out-performance of the Large Industrial sector (9.97%) over the period 1993- 2007 (until the GFC) and despite some high development levies being imposed.

We attribute this to road infrastructure construction i.e. the M2, M5 and M7 motorways, and the sustained migration of industrial land users (mainly warehousing and logistics) from Sydney's traditional industrial areas such as Botany, Banksmeadow etc.

Strip Retail has fluctuated wildly, we assume because of economic influences and the domination of regional shopping centres and perhaps even the emergence of bulky goods retailing, whereas the capital growth experienced by Rural Residential (which is defined as rural land of between 2 and 5 hectares in size, for a single detached dwelling) is consistent with that of Standard Residential within the same Outer Zone.

We assume that the high growth rate of residential activity generally during the period 2001- 2007 was likely due to the significant activity in the market generated by land releases, economic confidence and accessibility of debt.

### 1.3.2 MELBOURNE URBAN BASIN

#### Melbourne - Inner Zone (0-15km from CBD)

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE\*

TABLE 4

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	10.21%	11.48%	6.61%	9.76%
Small Industrial	0.33%	11.91%	16.46%	8.41%
Strip Retail	0.81%	14.33%	7.62%	7.24%
<b>Overall</b>	3.78%	12.57%	10.23%	<b>8.47%</b>
CPI (Melbourne)	2.42%	2.77%	2.65%	2.60%
Capital Growth PA in Real Terms	1.36%	9.80%	7.58%	5.87%

\*Average, non-weighted

Source : Urbis

Melbourne experienced strong economic fundamentals during the late 1990s and a property boom across all sectors (residential, industrial and commercial) from this period until the GFC.

This is evident in Table 4 which reveals long term annual growth rates for the Inner Zone of between 7.24% and 9.76%. Notably Standard Residential outperformed both Small Industrial and Strip Retail during the pre-2000 period, where little to no growth was recorded for commercial property.

#### Melbourne - Middle Zone (15-30km from CBD)

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE\*

TABLE 5

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	3.05%	14.62%	9.33%	8.67%
Small Industrial	1.94%	14.19%	7.56%	7.63%
Large Industrial	5.18%	13.87%	2.84%	7.64%
Strip Retail	1.10%	11.07%	6.10%	5.84%
<b>Overall</b>	2.82%	13.44%	6.46%	<b>7.44%</b>
CPI (Melbourne)	2.42%	2.77%	2.65%	2.60%
Capital Growth PA in Real Terms	0.39%	10.66%	3.81%	4.84%

\*Average, non-weighted

Source : Urbis

Melbourne's Middle Zone Land Use categories demonstrate average annual growth of between 7.63% and 8.67%, with the top performer being Standard Residential.

Generally our observation is that growth in the commercial and industrial sectors, outside of peak and trough periods, is strongly tied to economic growth (i.e. Gross State Product). This is not surprising given long term average rental growth within the industrial sector is broadly in line with CPI. Large Industrial land has experienced the greatest correction or reduction in growth post GFC, recording modest average growth of 2.84% between 2008 and 2012.

## Melbourne - Outer Zone (>30km from CBD)

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE\*

TABLE 6

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	1.27%	15.29%	9.30%	8.18%
Large Industrial	-0.01%	19.69%	5.72%	8.32%
Rural Residential	2.30%	16.80%	8.73%	8.98%
<b>Overall</b>	1.19%	17.26%	7.92%	<b>8.49%</b>
CPI (Melbourne)	2.42%	2.77%	2.65%	2.60%
Capital Growth PA in Real Terms	-1.24%	14.48%	5.27%	5.89%

\*Average, non-weighted

Source : Urbis

Similar to our analysis for the Sydney basin, our analysis of industrial land within Melbourne's Outer Zone excludes the Small Industrial category but focuses instead on Large Industrial, where the greater market focus has been because of progressive improvements in transport infrastructure, demand for logistics facilities, and urban creep.

Somewhat surprisingly Melbourne's Outer Zone recorded the city's highest capital returns (average annual growth) over the 20-year timeline, averaging 8.49% per annum, with Rural Residential (8.98%) being the out performer.

Much of the growth experienced between 2001 and 2007 can be attributed to the introduction of new infrastructure, including the CityLink Tollway (2000), Hume Freeway (2006) and EastLink Tollway (2007-8), which has a direct positive impact on industrial land values and, to a lesser extent residential land values.

We note that similar to Sydney, Melbourne's Rural Residential (8.98%) has generally tracked land value growth for Standard Residential in the same zone (8.18%).

### 1.3.3 BRISBANE URBAN BASIN

## Brisbane - Inner Zone (0-7.5km from CBD)

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE\*

TABLE 7

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	8.59%	16.34%	1.92%	9.64%
Small Industrial	5.40%	19.29%	1.65%	9.32%
Strip Retail	8.32%	18.05%	-0.05%	9.63%
<b>Overall</b>	7.44%	17.89%	1.17%	<b>9.53%</b>
CPI (Brisbane)	2.21%	3.45%	3.01%	2.84%
Capital Growth PA in Real Terms	5.23%	14.44%	-1.84%	6.69%

\*Average, non-weighted

Source : Urbis

The Brisbane Inner Zone has displayed the highest level growth of any of the city's three zones over the 20-year period with an overall growth rate of 9.53%. The high growth levels within the 2001-2007 period were driven by strong economic conditions in Queensland with high interstate migration, low unemployment and a buoyant mining sector.

Throughout the 20-year study period, Brisbane saw a revitalisation of the inner city area with a number of significant public and private renewal projects being undertaken.

Of the three Land Use types, Strip Retail generally displayed the highest level of fluctuation within growth rates, with Standard Residential displaying the highest overall growth over the period (9.64%), but just.

## Brisbane - Middle Zone (7.5-20km from CBD)

### LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE

TABLE 8

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	4.29%	15.83%	4.16%	8.30%
Small Industrial	6.03%	17.98%	-1.75%	8.27%
Large Industrial	4.40%	20.01%	0.92%	8.99%
Strip Retail	1.23%	11.43%	5.55%	5.88%
<b>Overall</b>	3.99%	16.31%	2.22%	<b>7.86%</b>
CPI (Brisbane)	2.21%	3.45%	3.01%	2.84%
Capital Growth PA in Real Terms	1.78%	12.86%	-0.79%	5.02%

*\*Average, non-weighted*

*Source : Urbis*

Brisbane's Middle Zone across all land categories demonstrated the city's lowest per annum annual growth over the study period of 7.86%.

Standard Residential in the Middle Zone generally tracked a similar pattern to the Inner and Outer Zones recording an overall annual growth of 8.30%. Strip Retail recorded the lowest overall annual growth rate within the Middle Zone of 5.88% although in comparison to the other Land Use types it was more consistent.

Large Industrial displayed the highest overall growth over the period (8.99%) despite showing the greatest growth rate decline in recent years. The period 2001- 2007 saw significant annual growth in the Large Industrial category of 20.01% which was predominately associated with the demand from transport companies requiring warehouse space to service the increasing population, and from engineering companies providing services to the mining sector.

Noticeable trends include growth spikes in the 2001- 2007 period across all property types.

## Brisbane - Outer Zone (>20km from CBD)

### LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE\*

TABLE 9

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	4.18%	17.28%	2.73%	8.40%
Rural Residential	2.73%	21.61%	1.19%	8.96%
Large Industrial	7.65%	26.56%	-3.19%	11.56%
Strip Retail	1.08%	16.72%	6.72%	7.96%
<b>Overall</b>	3.91%	20.54%	1.86%	<b>9.22%</b>
CPI (Brisbane)	2.21%	3.45%	3.01%	2.84%
Capital Growth PA in Real Terms	1.71%	17.09%	-1.15%	6.38%

*\*Average, non-weighted*

*Source : Urbis*

Brisbane's Outer Zone has displayed the second highest level of long-term capital growth between the city's three Zones over the 20-year period, driven by the Large Industrial sector in the period leading up to the GFC.

Large Industrial displayed the highest overall annual growth rate (including all zones) over the period, despite showing the greatest decline in recent years. As with the Middle Zone, the 26.56% per annum growth for Large Industrial between 2001- 2007 was as a consequence of the demand created by transport and engineering companies servicing the increasing population base, and the mining sector.

As in Sydney and Melbourne, Rural Residential tracks a similar pattern as Standard Residential with an average growth rate of 8.96% per annum over the 20 year period.

## 1.4 CONCLUSIONS

This study has been undertaken to assess whether historical changes in property prices in Australia's three main East Coast Capital Cities contain any lessons for governments, especially in relation to the identification, protection and acquisition of:

- Corridors for future infrastructure; and
- Associated key sites e.g. land for large, intermodal freight terminals.

This conclusion to our report deals mainly with the historic pattern of property price increases. Some brief commentary on the implications of those property price increases for government infrastructure decision-making is also provided.

### CHANGES IN PROPERTY PRICES

Our analysis has identified relatively strong capital growth performance exhibited by the Outer Zones (all Land Use types) in each of Sydney, Melbourne and Brisbane in comparison to the respective Inner Zones and the Middle Zones over the study period.

This is a key conclusion, given the background to the study. It is in the Outer Zones of cities where the benefits of timely corridor protection and acquisition are probably the greatest e.g. protecting a corridor can minimise the risk that the preferred alignment for a project is 'built out' and the project then:

- Has to be placed in tunnel (for example), substantially increasing the cost of the project in question<sup>1</sup>; or
- Does not proceed because of the cost increases (with associated economic impacts).

We anticipated strong demand fundamentals associated with a desire for inner city residential living, and limited land supply for retail and industrial land users, creating high rates of annual land value growth for the Inner Zones in particular.

However, whilst Brisbane's overall Inner Zone average increase (9.53% per annum) only just exceeded that of its Outer Zone average (9.22% per annum), the Outer Zone long-term growth rates for both Sydney (6.42%) and Melbourne (8.49% per annum) exceeded their respective average long-term Inner Zone rates (5.31% and 8.47% per annum).

Our assessment as to why the Outer Zones for each capital city over the 20-year study period have outperformed beyond expectations is that such locations have come off low land value bases and then benefited strongly with both infrastructure provision and economic circumstances in comparison to the Inner and Middle zones (we note in particular the period between 2001- 2007).

In this context the case studies annexed to this report illustrate the beneficial land value impacts provided by motorway infrastructure. Land values in the vicinity of the motorways escalated above trend during the construction period (e.g. the M7 in Sydney) or during initial operation (e.g. the M1 in Brisbane) as opposed to when the route was first mooted and land speculation was occurring.

Our conclusions in relation to the impact of these projects were made by identifying the estimated land value uplift as a percentage change from the original infrastructure catchment land value, compared to that of the wider urban area, on a pro-rata basis.

Of the three motorways studied, there was infrastructure associated land value uplift ranging between 21% (Sydney's M7 motorway) and 49% (Brisbane's M1 motorway) in percentage value pro-rata terms from when the infrastructure route was first announced/identified, to construction and operation.

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<sup>1</sup> Infrastructure Australia has advised Urbis that, as a rule of thumb, having to build infrastructure in tunnel is typically at least ten times as expensive as building the equivalent infrastructure on the surface. In addition, tunnels involve additional maintenance and operational costs compared to surface alternatives.

The following Table 10 provides averaged annual growth rate summaries for each of the Capital Cities for each urban zone analysed and for “all Land Use types”, concluding with an overall 20-year annual average for each Capital City. For comparison purposes, the table also shows the average annual increase in the CPI in each city over the 20-years.

The consolidated figures below are not “weighted” by value or number and therefore we caution against placing undue reliance on them. It is summary analysis only, providing a guide to the overall long-term annual growth rate for each Capital City. More accurate and more detailed land use and urban zone growth rate conclusions for each city are contained in the body of this report.

## City by City Summary

LONG TERM ANNUAL CAPITAL GROWTH RATE - ALL LAND USE CATEGORIES

TABLE 10

	Inner Zone	Middle Zone	Outer Zone	20-year Growth Average	20-year CPI Average
Sydney	5.31%	5.34%	6.42%	5.69%	2.63%
Melbourne	8.47%	7.44%	8.49%	8.13%	2.60%
Brisbane	9.53%	7.86%	9.22%	8.87%	2.84%
<b>Overall East Coast Capital City Average</b>	<b>7.77%</b>	<b>6.88%</b>	<b>8.04%</b>	<b>7.56%</b>	<b>2.69%</b>

Source : Urbis

Relevantly, the 20-year average annual increase in land values was higher than the average annual increase in the consumer price index for each Capital City. In each Capital City, over the period 1993 to 2012, land values increased on average at between 3% and 6% per annum real above the rate of inflation.

Sydney’s analysed average annual land value growth rate (5.69%) was lower than both Melbourne (8.13%) and Brisbane (8.87%) over the 20-year timeline.

This appears to be because Melbourne and Brisbane have come off a lower land value base (for each urban zone category) in comparison to that of Sydney. Sydney’s land values are historically higher – as can be verified within this report via the rolling annual land value charts - and remain so today. We also suggest that, likely as a related consequence, there are housing affordability and population growth influences benefitting Melbourne and Brisbane as well.

## IMPLICATIONS FOR GOVERNMENT INFRASTRUCTURE DECISION-MAKING

It might be argued that any benefits achieved from corridor protection need to be set against an opportunity cost associated with such outlays in the short-run. Funds used to secure properties in infrastructure corridors might be used for other purposes. However, protecting a corridor does not have to mean that all properties need to be acquired ‘up front’. In addition, leasing out properties once they have been acquired can moderate any holding costs.

Any opportunity costs associated with the allocation of funds for infrastructure corridor land acquisition need to be considered against the following benefits of corridor protection and acquisition:

- Early ownership of corridor land allows government full control over the future design and capacity specifications of the future infrastructure;
- Land can be acquired early of sufficient size and capability to avoid costly design and service requirements in the future such as tunnels, exhaust stacks, overhead viaducts etc;
- Early acquisition, in advance of urban growth or market reaction to the infrastructure provision, will allow government to deal with a fewer number of land owners and/or less costly acquisition funding requirements when compensation for landowner improvements are considered; and
- Early acquisition generally provides for less community impact and angst.

On average, long-run annual increases in land values exceeded the relevant Capital City consumer price index.

As the data for this report shows, the land markets have been volatile at times. Periods may arise where property prices rise considerably faster than overall long-term trends and/or increases in public revenues. In 'boom periods' in some cities and zones, land values increased at up to seven and eight times the rate of inflation.

Such periods are due to 'macro' factors such as interest rates and overall economic activity and 'internal' factors within particular markets such as land-use planning decisions, the supply of infrastructure, and localised supply-demand issues (e.g. owners of developable land choosing, for various reasons, not to develop their land or to sell the property to a developer).

Conversely, there are periods where land values have remained static or even declined in real terms, although a detailed examination of the figures in this report shows that this is not universally the case. Even in periods where land values overall may be static or falling in real terms, land values in certain zones and for certain land use types may be increasing in real terms.

The differences between land price increases and general rates of inflation, whether over the long-term or shorter periods, suggest that timely corridor protection and acquisition can reduce the overall cost of infrastructure provision.

Equally though, governments may wish to consider the timing of any property acquisitions so as to:

- Avoid being 'caught out' by periods of property price inflation (whether in the market generally or in specific situations); and
- Take advantage of periods of low price inflation of city land values.



# **SCOPE, APPROACH AND METHODOLOGY**

Our report scope is essentially to produce data sets that illustrate the change in land values over time for certain pertinent land use categories within inner, middle and outer zones for each East Coast Capital City.

Our approach is to utilise annual statutory land value assessments of a basket of actual properties within each zone and each Capital City. The basket contains a minimum of 3 properties for each land use category, within each zone, and within each Capital City. The valuations have been sourced from the Valuer Generals Office (or equivalent) of each State, using either their “Blue Book” publications or through paid targeted subscription. Where ever possible, we have researched a 20-year timeline.

The advantage of using statutory valuations is that the regular unimproved land valuations for each property in the basket will/should reflect the market drivers influencing values each year and therefore provide the trends that we are looking for. That is, the regular valuations via the use of market sales as benchmarks will capture value change influences such as supply and demand dynamics, employment growth, economic sentiment etc.

Our research methodology is to chart the rolling annual growth rate, rolling annual average land value (on an unweighted basis) and land value indices for each land use type, and then each Capital City zone. We have then examined the economic circumstances for each Capital City over the time series, and incorporated this within our charts as milestone periods to help identify the economic (and planning) influences creating the market peaks and troughs within each data set.

For instance Sydney’s data trend is consistent with the economic influences of the 1990’s recession and pre-Olympics build up, property market prosperity prior to the GFC on the back of moderate economic fundamentals and sentiment, and then the post GFC decline and consolidation.

Our conclusions also reference Consumer Price Index (CPI) as a proxy for the minimum expectations of an investor or owner/occupier – although we highlight that capital growth is usually driven by favourable supply/demand circumstances, Gross State Product (GSP) and employment growth drivers.



# SYDNEY BASIN ANALYSIS

### 3.1 STUDY AREAS (ZONES)

The Sydney metropolitan area, although large, is constrained by the coastline in the east and the Nepean River/Blue Mountains in the west. The property market generally recognises certain zones and precincts as being “inner city”, “middle suburbs”, “central west”, “outer south west” etc.

For our Sydney Basin analysis we have adopted concentric zones of 0 to 15 kilometres (inner), 15 to 30 kilometres (middle), and over 30 kilometres (outer) – each radiating from the Sydney CBD as being our inner, middle and outer zones.

Within each zone we have analysed a small basket of properties as a land value proxies for land uses such as Standard Residential, Small (or Light) Industrial, Large Industrial, Strip Retail and Rural Residential.

### 3.2 VALUE DRIVERS

#### 3.2.1 LAND SUPPLY AND DEMAND

In the timeline context, capital growth of land within the Sydney Basin over the past 20-years appears to have been influenced by the following:

- A pre-Olympics growth period between 1993-2000;
- A high market activity and growth period post Olympics of 2001-2007 which appears attributable to the strong domestic and global economic fundamentals being experienced during that period; and
- A property market correction during the slower economic period of 2008-2012, being the GFC period (2008-2009) and market consolidation since.

However in the supply/demand context the value of Sydney residential land in the mid and outer zones (and the median price of established dwellings) has been influenced by low levels of greenfield development and lot production, relative to demand. Market commentators indicate that average production of some 9,240 lots per annum is now required to satisfy market demand and population growth. Since 2001-2002 greenfield lot production appears to have averaged only approximately 3,500 lots per annum<sup>2</sup> thereby exacerbating the supply/demand equation and creating upward pressure on land pricing.

Sydney's chronic undersupply of residential land has contributed towards its status as the nation's most expensive capital city, but there are additional forces at play such as the high cost of development levies, and large levels of fragmented ownership within the various release areas. To help mitigate these market and production issues, the NSW Government created two urban Growth Centres with the aim of helping to structure and speed the delivery of lead-in infrastructure and create sustainable employment centres.

The identification of the North West Growth Centre and the South West Growth Centre appears to have acted as a speculation stimulus for Rural Residential land values contained within those catchments, but we are unable to clearly identify any specific planning-related impact within our Sydney - Outer Zone analysis because of the overall buoyant market conditions during the same period of 2001-2007.

In terms of industrial land supply and demand, particularly for that in Sydney - Outer Zone, there has been infrastructure led stimulus to land values and capital growth created by the construction of the M2, M5 and M7 motorways in 1992, 1997 and 2005 respectively.

A case study for the M7 motorway is included in this report.

Similarly, and associated with this, the NSW Government has rezoned large areas of outer western Sydney for employment purposes and, as shown in the case study, there was a significant pricing and capital growth effect for industrial land during this period.

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<sup>2</sup> State of the Land Report 2012, UDIA

### 3.2.2 SYDNEY AND NSW ECONOMIC CIRCUMSTANCES 1993-2012

In the early 1990's the Australian economy, and that of NSW, was slowly recovering from the 1987 investment crash in the USA, however by the mid to late 1990's the NSW economy was receiving significant construction stimulus in the run-up to the 2000 Sydney Olympics Games.

During this period (1995-2000) GSP was consistently growing in the 3% to 5% range per annum. In the course of preparations for the Olympics both the Fahey government (1992-1995) and the succeeding Carr government (1995-2006) expended substantial sums of money on venues and transport facilities.

This reached a peak in 1998-1999, when over \$500 million was spent on the Olympics and the rate of growth of GSP was around a peak level of 5% per annum. The following year GSP slipped to 4.4% and in 2000-2001 declined to 2.4%. Growth then slowed further during 2001-2002 (2.2%) before reviving during 2002-2003 (3%), and then declining in 2003-2004 (2.1%) and again in 2004-2005 (1.8%). It revived momentarily in 2005-2006 (to 2.1%) and then declined once more in 2006-2007 (1.8%).<sup>3</sup>

GSP during the period 2001-2012 has averaged 2.1%. On the surface, the hosting of the Olympics appears to have contributed to the slump in activity, but in reality the State economy since the Olympics has experienced:

- A slowdown in manufacturing;
- A decline in the number of overseas tourists visiting NSW;
- A significant deficit of imports over exports;
- A post-Olympic decline in building (i.e. the ending of a housing boom that commenced in the mid 1990's and finished in 2004); but
- A rapid expansion of the finance, property, insurance and business services sectors (as a broadly compensatory influence to the demise of manufacturing).

The downturn in the US economy and global economies during 2007 - 2009 affected the NSW economy strongly (GSP 1.0% in 2009) although the overall impact of the GFC on the Australian economy was smaller than in most other countries.

A number of factors contributed to this, including substantial Federal and State fiscal and monetary policy stimulus initiatives, the strength of the Chinese economy and the rebound in commodity prices, the flexibility of the Australian economy (and in particular the exchange rate), and the strong financial system.

In recent years (2010-2012) the NSW economy has been relatively stable, but it has lagged well behind that of Western Australia with its unprecedented resources boom. During 2012 economists and policy makers were concerned about the possibility that Europe's sovereign debt crisis would trigger a major downturn of the European economy and financial system, albeit the US economy now appears to be on a modest recovery path with unemployment falling, albeit still historically high.

China and emerging Asia continue to post slower, but still solid growth. In this context the mining sector in NSW is currently booming, with investment more than doubling to over \$5 billion during 2010 and 2011<sup>4</sup>.

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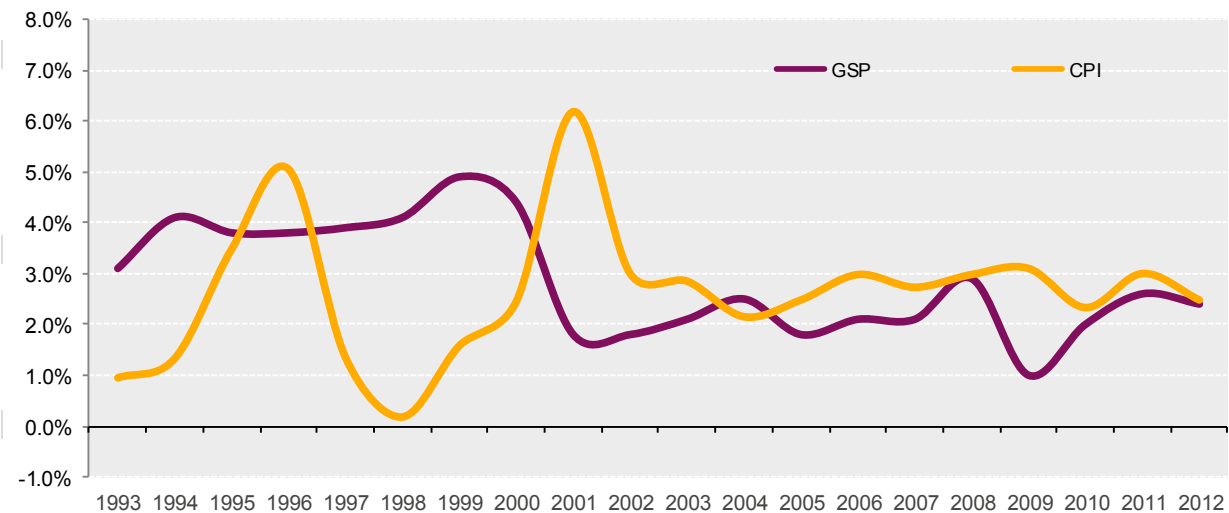
<sup>3</sup> NSW Economy : A Survey. NSW Parliamentary Library Research Services Briefing Paper 14/07

<sup>4</sup> NSW Treasurer Economic Update March 2012

## Sydney - Economic Fundamentals Annual Growth Percentages

Sydney CPI and NSW GSP

CHART 1



Source : ABS and Urbis

Supporting our comments Chart 1 above identifies, in terms of GSP, the:

- Olympics driven rebound from the early 1990's recession;
- An immediate decline in the general NSW economy after the Olympics, before a modest recovery led by housing and industrial construction and development in the years 2001-2004 (also being the period of construction for the M7 motorway and the release of the SEPP 59 planning instrument that rezoned large parts of the Western Sydney Employment Area); and
- The GFC correction in 2008-2009 and modest recovery since on the back of various government stimulus initiatives.

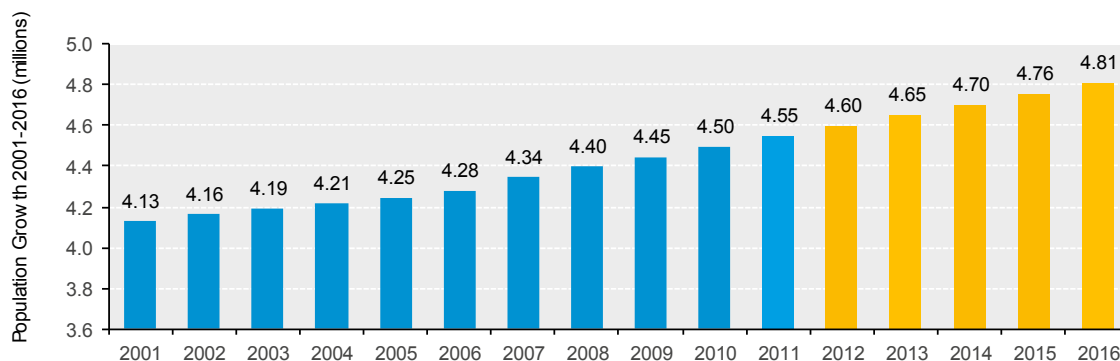
Running CPI (Sydney) is also plotted.

Below we note Sydney's relatively stable level of population growth (0.9% per annum over 11 years) and forward estimates sourced from the Australian Bureau of Statistics (ABS):

## Sydney Population Growth and Projections

Historic Growth (blue) and Forecast Growth (yellow)

CHART 2



Source : ABS Population Statistics 2011 and Urbis

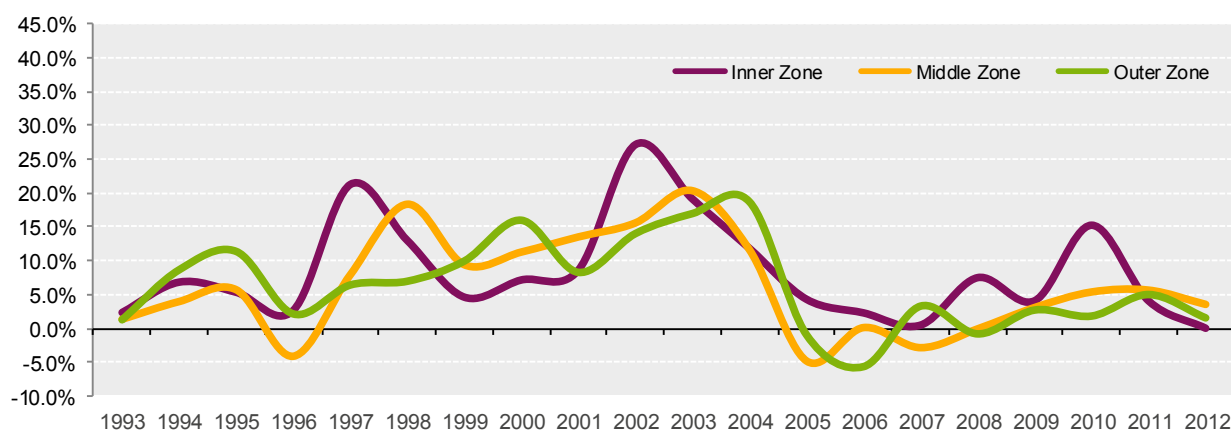
### 3.2.3 GROWTH RATES – STANDARD RESIDENTIAL

Our Sydney Basin analysis commences with an examination of the assessed annual land value growth rates for each Land Use type adopted within this report, starting with Standard Residential.

#### Sydney - Standard Residential Rolling Annual Growth Rate

Sydney Metro Inner, Middle and Outer Zones 1993-2012

CHART 3



Source : NSW Valuer General and Urbis

As can be seen in Chart 3 the annual growth rate of Standard Residential within the inner, middle and outer zones has generally followed the same trend lines and market cycles.

The Inner Zone is more volatile and appears closely related to the economic sentiment of home buyers e.g. the trend line is consistent with CPI.

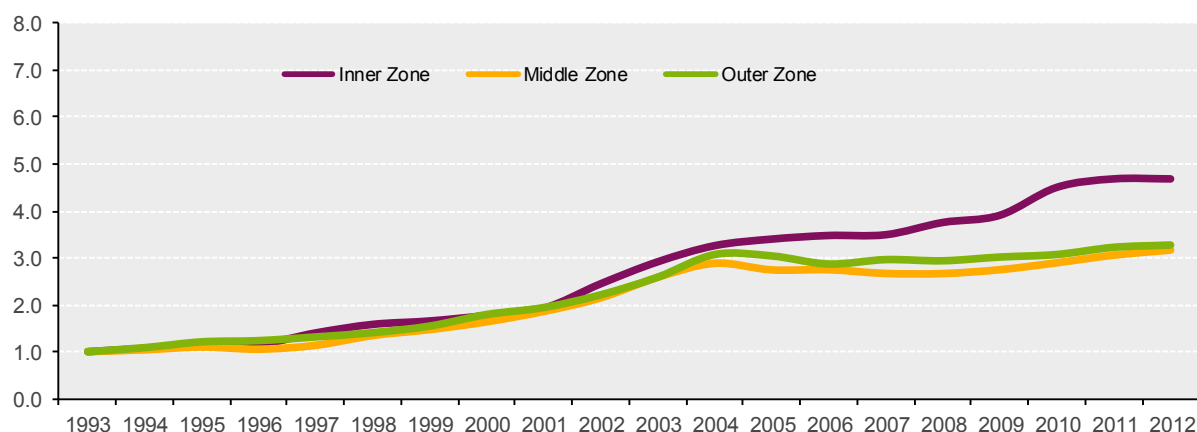
Standard Residential land values in the Middle Zone and Outer Zone also appear impacted by economic sentiment, but we assume housing affordability concerns are subduing the more dramatic peaks (and troughs) that are found for the Inner Zone.

Also too for the Middle and Outer Zone the residential market collapsed in late 2004 after a strong period of high growth post Olympics. The immediate period leading to this saw a flood of land releases taking advantage of pent up demand, but once this demand was satisfied land values collapsed because of historically high levels of supply and in terms the State economy, the "Olympic hangover" being realised.

#### Sydney - Standard Residential Land Value Index

Sydney Metro Inner, Middle and Outer Zones 1993-2012

CHART 4



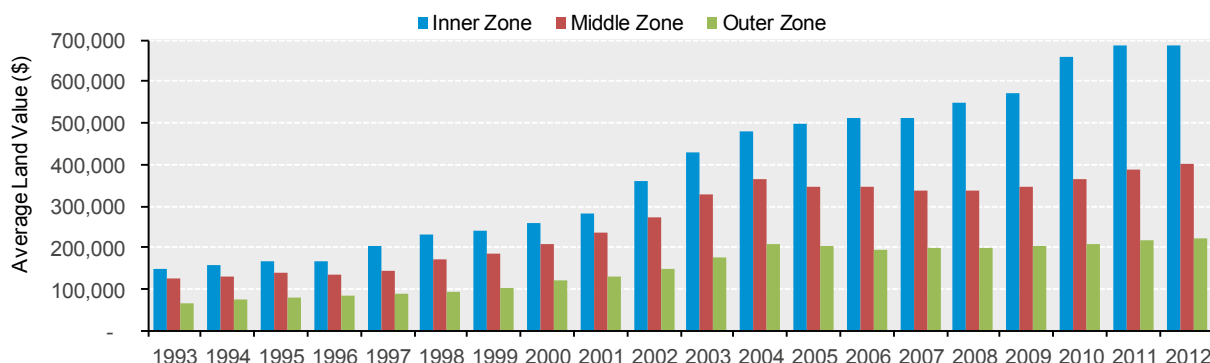
Source : NSW Valuer General and Urbis

The associated Sydney-Standard Residential indices chart (Chart 4) indicates the outperformance of the Inner Zone compared to that of the Middle and Outer Zones for the same period post 2004, as land in the Inner Zone is more tightly held and less impacted by periodic oversupply impacts .

## Sydney - Standard Residential Rolling Annual Average Value

Sydney Metro Inner, Middle and Outer Zones 1993-2012

CHART 5



Source : NSW Valuer General and Urbis

And for context, we note the above Standard Residential average rolling statutory land values for each of the Inner, Middle and Outer zones (Chart 5). We caution that these are the averages only for the properties within our analysis basket, and therefore a more exhaustive study may yield a different set of value conclusions.

## Sydney - Standard Residential

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 11

	1993-2000	2001-2007	2008-2012	1993-2012
Inner Zone < 15km	7.88%	10.53%	6.16%	8.38%
Middle Zone 15km to 30km	6.72%	7.63%	3.50%	6.23%
Outer Zone > 30km	7.83%	7.79%	2.03%	6.37%
<b>Overall</b>	<b>7.48%</b>	<b>8.65%</b>	<b>3.90%</b>	<b>6.99%</b>
CPI (Sydney)	2.05%	3.20%	2.78%	2.63%
Capital Growth PA in Real Terms	5.43%	5.46%	1.12%	4.36%

Source : Urbis

Table 11 summarises our analysis of Sydney - Standard Residential.

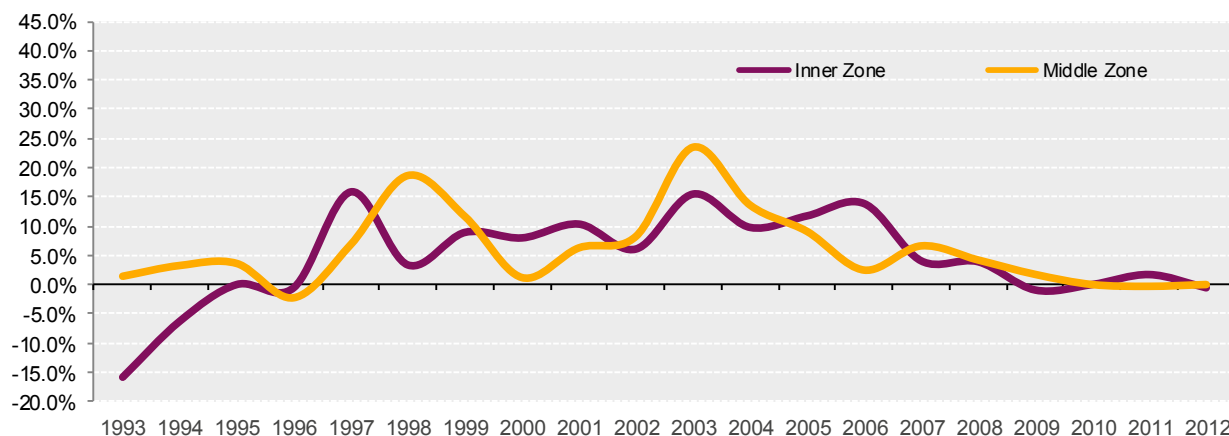
The time periods recognise a number of important market and economic milestone periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the Standard Residential growth rates within each Zone.

### 3.2.4 GROWTH RATES – SMALL INDUSTRIAL

#### Sydney - Small Industrial Rolling Annual Growth Rate

Sydney Metro Inner and Middle Zones 1993-2012

CHART 6



Source : NSW Valuer General and Urbis

Chart 6 above plots the annual land value growth rates for Small Industrial for Sydney – but we have only considered the Inner and Middle Zones where this property class is best represented.

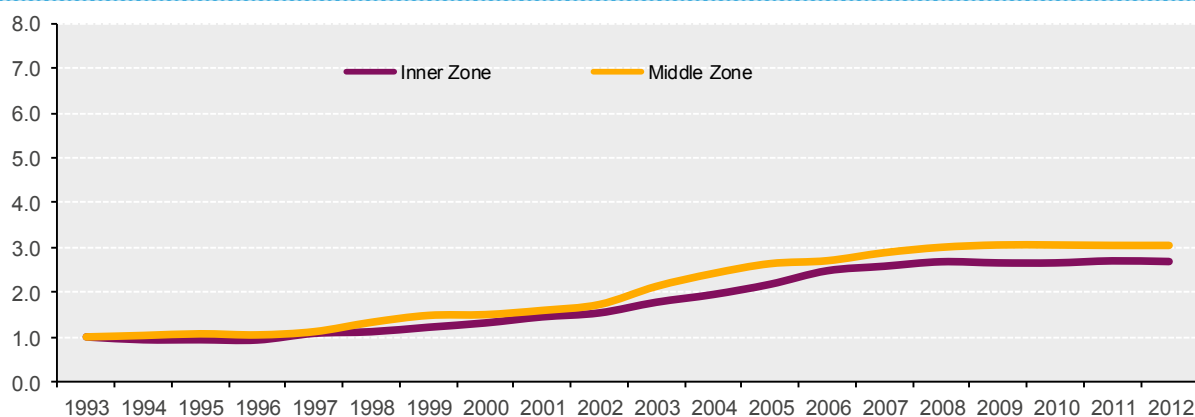
As can be seen, Sydney - Small Industrial recovers from the early 1990's recession and provides some favourable growth rates in the lead-up to the Sydney Olympics, drops and then recovers again in line with the buoyant development and investment property market conditions experienced 2001-2007.

Oddly however we note that the Small Industrial growth rate rises and drops dramatically towards the end of this period - intuitively the drop appears as a correction back to historical growth rates of around 5% per annum (before a negative period during the GFC).

#### Sydney - Small Industrial Land Value Index

Sydney Metro Inner and Middle Zones 1993-2012

CHART 7



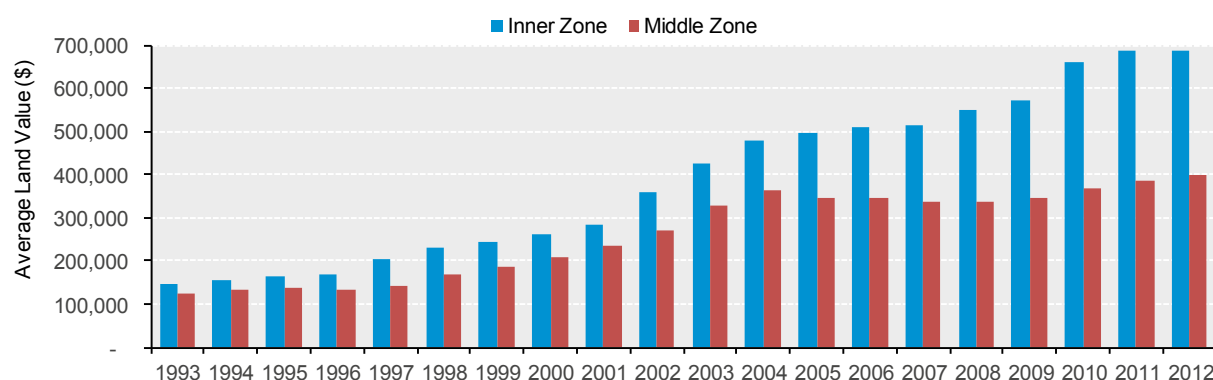
Source : NSW Valuer General and Urbis

The associated Sydney-Small Industrial indices chart is above (Chart 7), where the Middle Zone slightly outperforms the Inner Zone.

## Sydney - Small Industrial Rolling Annual Average Value

Sydney Metro Inner and Middle Zones 1993-2012

CHART 8



Source : NSW Valuer General and Urbis

And for context, we note the above Small Industrial rolling average statutory land values for each of the Inner and Middle zones (Chart 8) – noting that the land sizes for Small Industrial are typically <2 hectares whereas Large Industrial are >2 hectares.

The higher inner city land values, and perhaps the opportunity for a better highest & best use value, appear reflected in the Inner Zone. We caution that these are the averages only for the properties within our analysis basket, and therefore a more exhaustive study may yield a different set of value conclusions.

## Sydney - Small Industrial

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 12

	1993-2000	2001-2007	2008-2012	1993-2012
Inner Zone < 15km	1.68%	10.19%	0.82%	4.44%
Middle Zone 15km to 30km	5.54%	9.97%	1.13%	5.99%
<b>Overall</b>	3.61%	10.08%	0.97%	<b>5.21%</b>
CPI (Sydney)	2.05%	3.20%	2.78%	2.63%
Capital Growth PA in Real Terms	1.56%	6.88%	-1.80%	2.58%

Source : Urbis

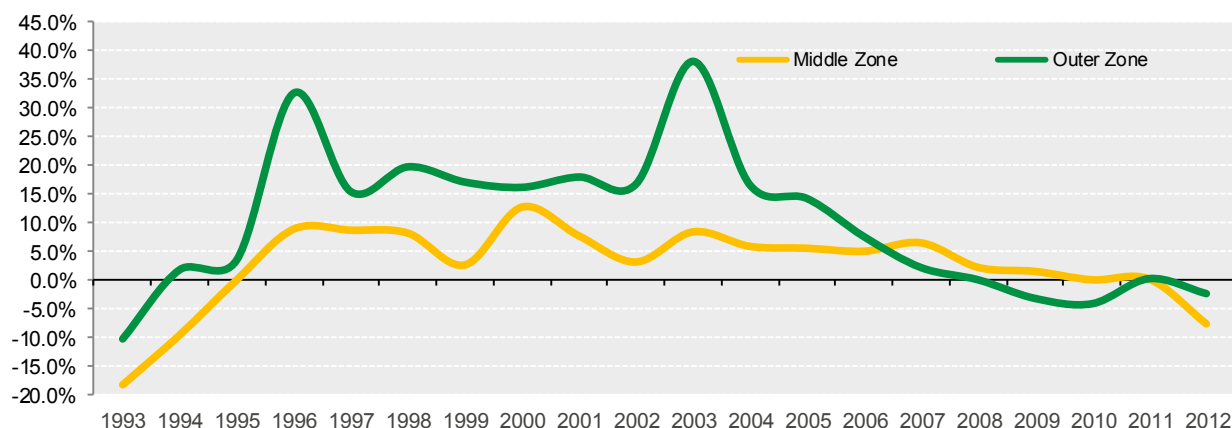
Table 12 summarises our analysis of Sydney – Small Industrial recognising a number of important market and economic periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the growth rates within each Zone.

### 3.2.5 GROWTH RATES – LARGE INDUSTRIAL

#### Sydney - Large Industrial Rolling Annual Growth Rate

Sydney Metro Middle and Outer Zones 1993-2012

CHART 9



Source : NSW Valuer General and Urbis

Chart 9 above plots the annual land value growth rates for Large Industrial for Sydney – but we have only considered the Middle and Outer Zones where this property class is best represented.

We note that the Large Industrial market recovers from the early 1990's recession with both the Middle and Outer zones out-performing in the period leading to the Sydney Olympics.

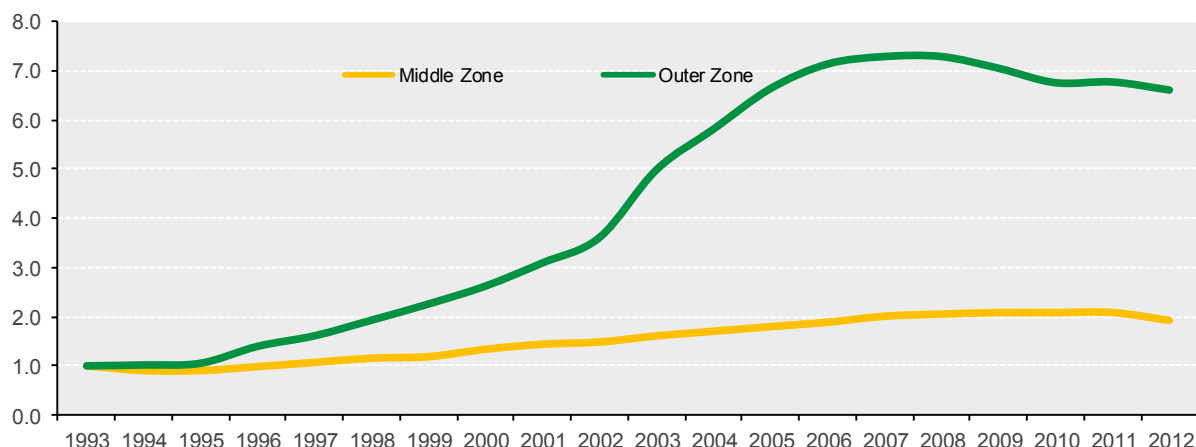
The Middle Zone's performance since is relatively stable and reflects economic circumstances during the period, whilst the Outer Zone is more volatile and reflects stronger sustained annual growth rates as the land values are coming from a much lower base.

It would appear that the Outer Zone's growth rates are heavily influenced by speculation and development activity consistent with infrastructure delivery (i.e. the M2 motorway in 1997 and the M7 in 2005). Similarly the Middle Zone appears to have been influenced by the SEPP 50 rezoning within western Sydney during 2000, causing a short lived spike in growth rate. SEPP 50 rezoned significant land areas in the Erskine Park, Eastern Creek and Greystanes precincts for employment land use.

#### Sydney - Large Industrial Land Value Index

Sydney Metro Middle and Outer Zones 1993-2012

CHART 10



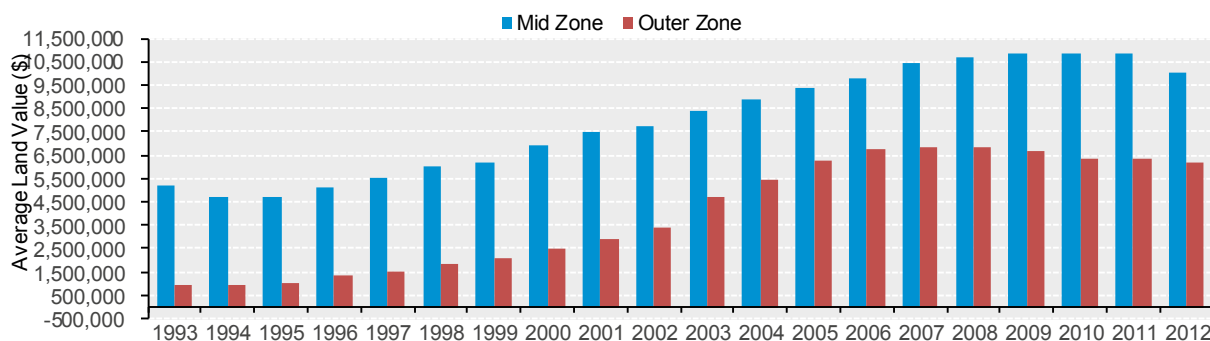
Source : NSW Valuer General and Urbis

The associated Sydney - Large Industrial indices chart (Chart 10) confirms the outperformance of Outer Zone industrial land and the more stable performance of the Middle Zone where there was less speculation and demand focus.

## Sydney - Large Industrial Rolling Annual Average Value

Sydney Middle and Outer Zones 1993-2012

CHART 11



Source : NSW Valuer General and Urbis

And for context, we note the above Large Industrial rolling average statutory land values for each of the Middle and Outer Zones (Chart 11).

Industrial land values in the Outer Zone commence from a lower base in comparison to the Middle Zone, substantially contributing to its outperforming annual growth rate. We caution that these are the averages only for the properties within our analysis basket, and therefore a more exhaustive study may yield a different set of value conclusions.

## Sydney - Large Industrial

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 13

	1993-2000	2001-2007	2008-2012	1993-2012
Middle Zone 15km to 30km	1.63%	6.00%	-0.79%	2.55%
Outer Zone > 30km	11.98%	16.17%	-1.92%	9.97%
<b>Overall</b>	<b>6.81%</b>	<b>11.08%</b>	<b>-1.35%</b>	<b>6.26%</b>
CPI (Sydney)	2.05%	3.20%	2.78%	2.63%
Capital Growth PA in Real Terms	4.76%	7.89%	-4.13%	3.63%

Source : Urbis

Table 13 summarises our analysis of Sydney – Large Industrial recognising a number of important market and economic periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the growth rates within the Middle and Outer Zones, where Large Industrial is predominantly located.

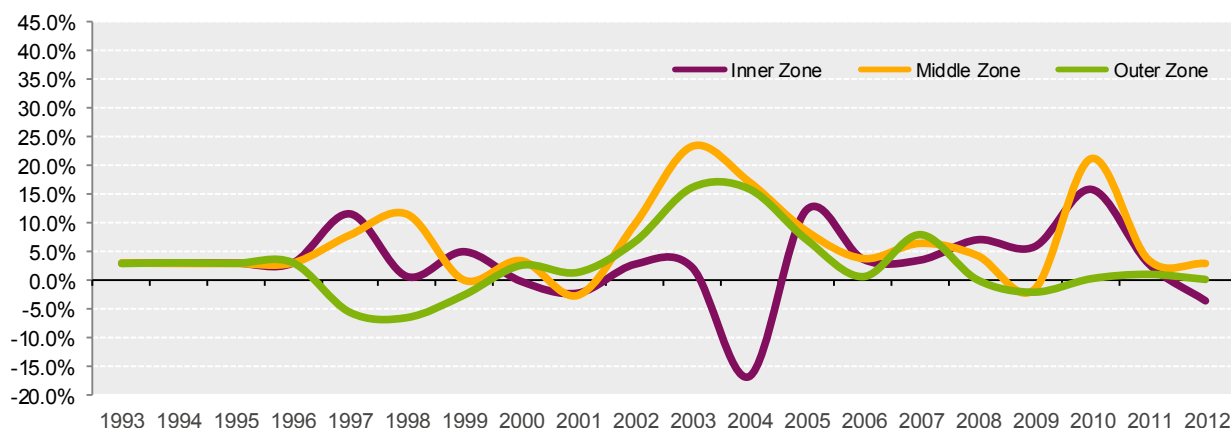
The out-performance of Large Industrial in the Outer Zone during the 2001- 2007 period (16.17% per annum) provides for the highest average annual growth rate during the time series for any of the land uses we have analysed for the Sydney Basin.

### 3.2.6 GROWTH RATES – STRIP RETAIL

#### Sydney - Strip Retail Rolling Annual Growth Rate

Sydney Metro Inner, Middle and Outer Zones 1993-2012

CHART 12



Source : NSW Valuer General and Urbis

Chart 12 above plots the annual land value growth rates for Sydney – Strip Retail for the Inner, Middle and Outer Zones.

Strip Retail as an asset class over the past 20-years has been detrimentally impacted by the emergence, growth and dominance of sub-regional and regional shopping centres, and bulky goods centres. Withdrawal of kerb car parking arrangements via the use of Clearways in the Inner Zone may also have negatively influenced values and growth rates.

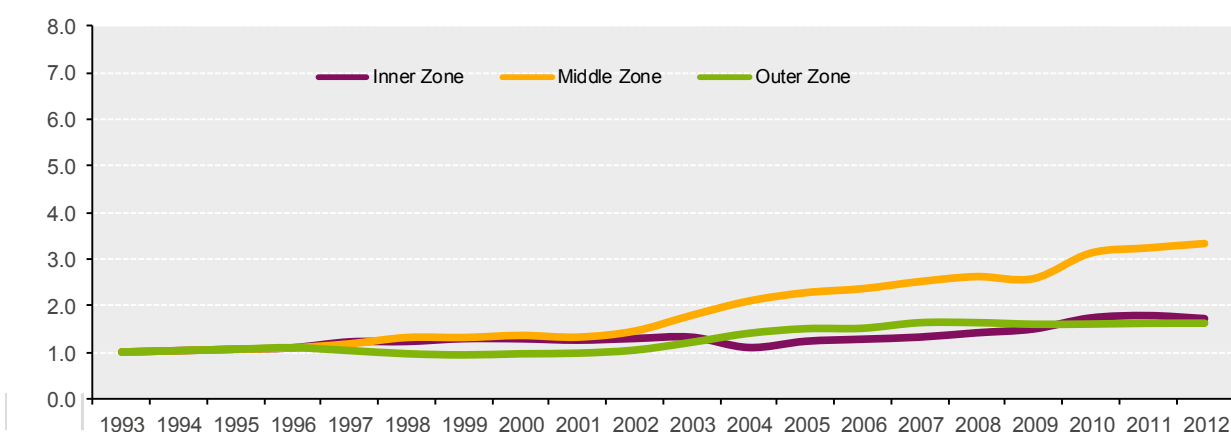
The general volatility is noted, though it appears that with the commencement of the buoyant property period 2001- 2007, possibly due to “urban renewal” or even bulky goods development, the Middle and Outer Zones have temporarily spiked.

The exception to this is a dramatic decline for the Inner Zone in 2004, which we attribute to the opening of Westfield Bondi Junction affecting a number of nearby properties within our Inner Zone basket.

#### Sydney - Strip Retail Land Value Index

Sydney Metro Inner, Middle and Outer Zones 1993-2012

CHART 13



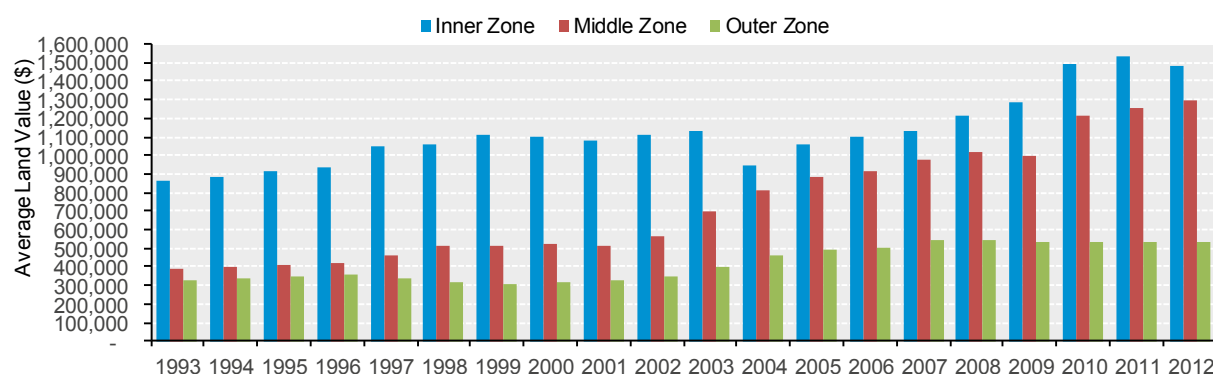
Source : NSW Valuer General and Urbis

The associated Sydney – Strip Retail indices chart is above (Chart 13), illustrating out-performance of the Middle Zone in recent years in comparison to the other two areas. This may be attributable to emerging highest & best use influences e.g. mixed use re-development on main roads.

## Sydney - Strip Retail Rolling Annual Average Value

Sydney Metro Inner, Middle and Outer Zones 1993-2012

CHART 14



Source : NSW Valuer General and Urbis

And for context, we note the above Sydney – Strip Retail rolling average statutory land values for each zone (Chart 14).

The relative increase in values experienced within the Middle Zone (a 6.6% average growth rate over the period) is able to be discerned, whereas the Outer Zone's growth rate and rolling values (2.7% per annum average) is much more subdued.

## Sydney - Strip Retail

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 14

	1993-2000	2001-2007	2008-2012	1993-2012
Inner Zone < 15km	3.61%	0.75%	5.60%	3.11%
Middle Zone 15km to 30km	4.32%	9.49%	6.07%	6.57%
Outer Zone > 30km	-0.04%	7.97%	-0.13%	2.74%
<b>Overall</b>	<b>2.63%</b>	<b>6.07%</b>	<b>3.85%</b>	<b>4.14%</b>
CPI (Sydney)	2.05%	3.20%	2.78%	2.63%
Capital Growth PA in Real Terms	0.59%	2.87%	1.07%	1.51%

Source : Urbis

Table 14 summarises our analysis of Sydney – Strip Retail identifying the relative underperformance of Strip Retail in the Inner and Outer Zones.

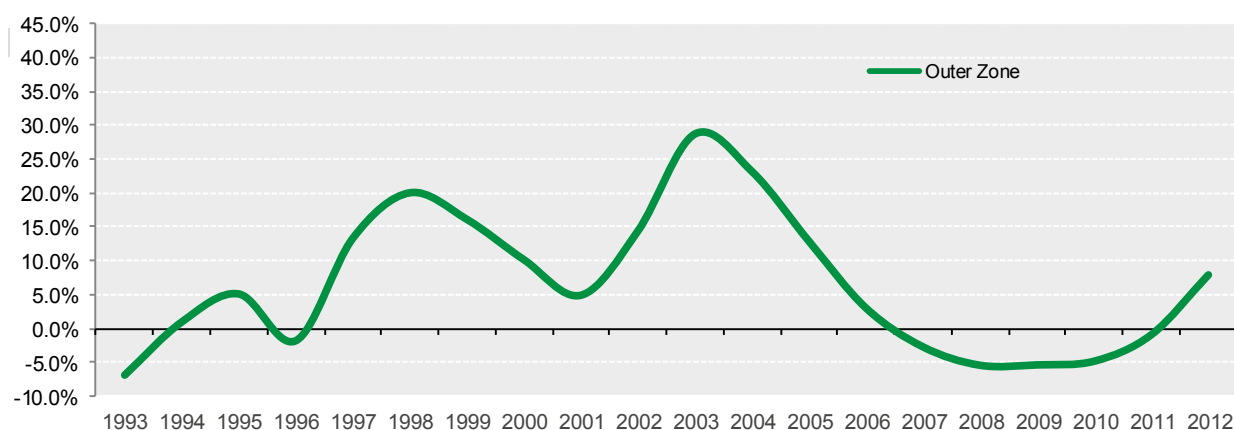
The Middle Zone over the long term appears to have performed moderately strongly (as mentioned, possibly attributable to mixed use development pressures or even favourable ethnic community concentration influences).

### 3.2.7 GROWTH RATES – RURAL RESIDENTIAL

#### Sydney - Rural Residential Rolling Annual Growth Rate

Sydney Metro Outer Zone 1993-2012

CHART 15



Source : NSW Valuer General and Urbis

Chart 15 above plots the annual land value growth rates for Sydney – Rural Residential applicable only for the Outer Zone. We note a steady increase in annual growth rates in the lead-up to the Sydney Olympics, before a decline consistent with most other property asset classes immediately afterwards, and a similar increase to Standard Residential for the period 2001– 2004. The capital growth increases are strong but quite volatile.

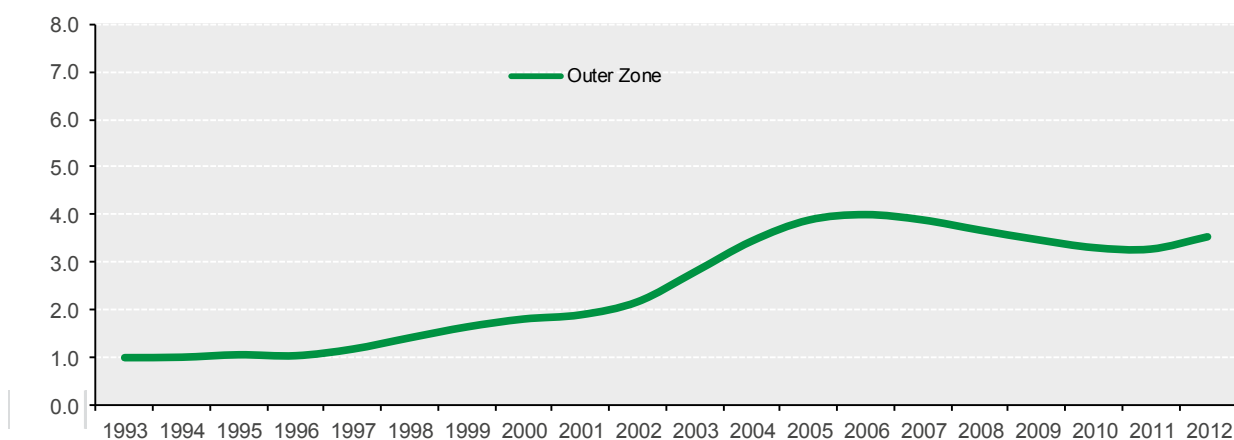
The strength of the post 2000 period may well be because of NSW Government planning initiatives in addition to the positive state of the market at that time i.e. the North West and South West Growth Centres were announced during this period.

The decline from 2004 leading through to post GFC is also profound – in our experience there was much land speculation during the period 2001 - 2004 before realisation amongst property developers and financiers alike that the high en-globo land values at the time could not be sustained, given the cost vs revenue fundamentals required for viable urban development.

#### Sydney - Rural Residential Land Value Index

Sydney Metro Outer Zone 1993-2012

CHART 16



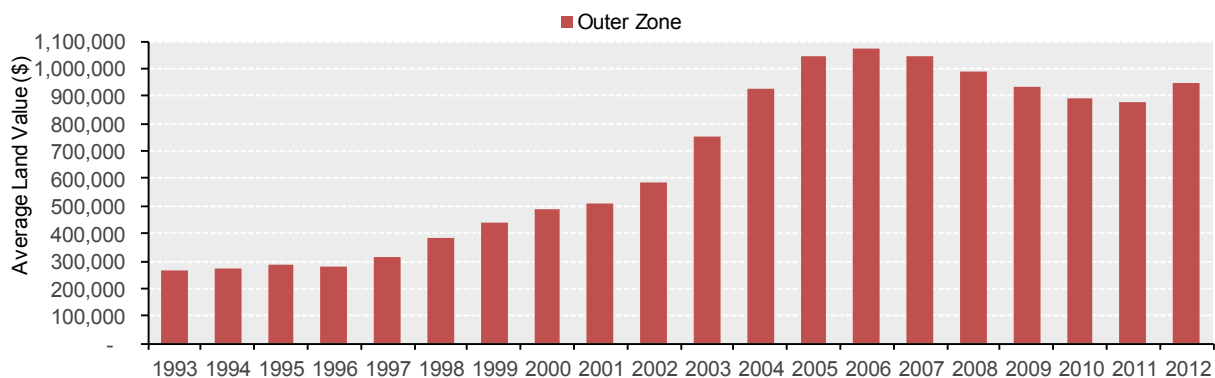
Source : NSW Valuer General and Urbis

The associated Sydney – Rural Residential indices chart (Chart 16) illustrates our previous comments.

## Sydney - Rural Residential Rolling Annual Average Value

Sydney Inner and Outer Zones 1993-2012

CHART 17



Source : NSW Valuer General and Urbis

And for context, we note the above chart for Sydney – Rural Residential rolling average statutory land values (Chart 17). The average value trends are broadly consistent with that of our Standard Residential analysis (Chart 5).

## Sydney - Rural Residential

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 15

	1993-2000	2001-2007	2008-2012	1993-2012
Outer Zone > 30km	7.10%	12.03%	-1.76%	6.61%
<b>Overall</b>	7.10%	12.03%	-1.76%	<b>6.61%</b>
CPI (Sydney)	2.05%	3.20%	2.78%	2.63%
Capital Growth PA in Real Terms	5.05%	8.83%	-4.54%	3.98%

Source : Urbis

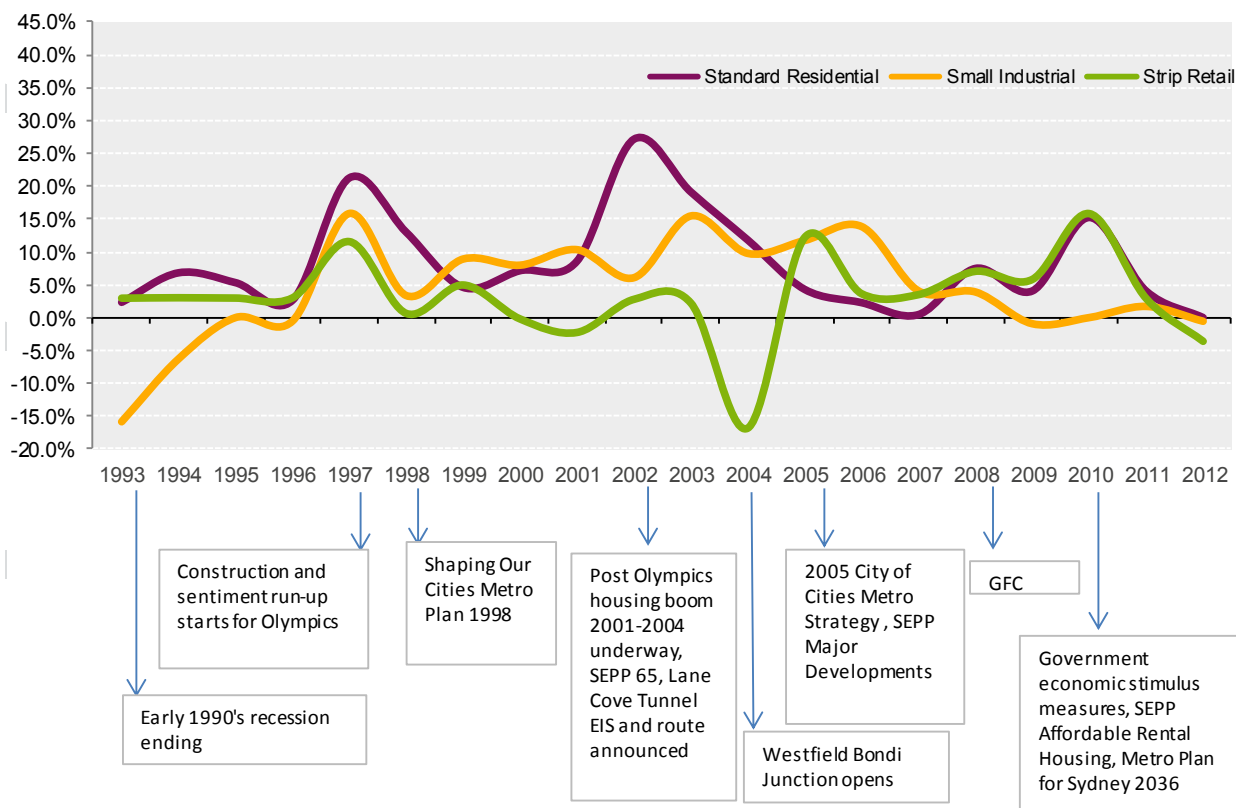
Table 15 summarises our analysis of Sydney – Rural Residential and confirms our thoughts that the long-term average annual growth rate for Rural Residential within the Sydney Basin is broadly consistent with that of Standard Residential which grew at an average rate of 6.99% per annum over the period 1993 - 2012.

### 3.2.8 ALL GROWTH RATES - SYDNEY BASIN INNER ZONE

## Sydney - Inner Zone Rolling Annual Growth Rates

Sydney Metro Inner Zone 1993-2012

CHART 18



Source : NSW Valuer General and Urbis

Chart 18 above brings together the Land Use types analysed for the Sydney - Inner Zone over a timeline of economic and planning events to see what correlations may occur.

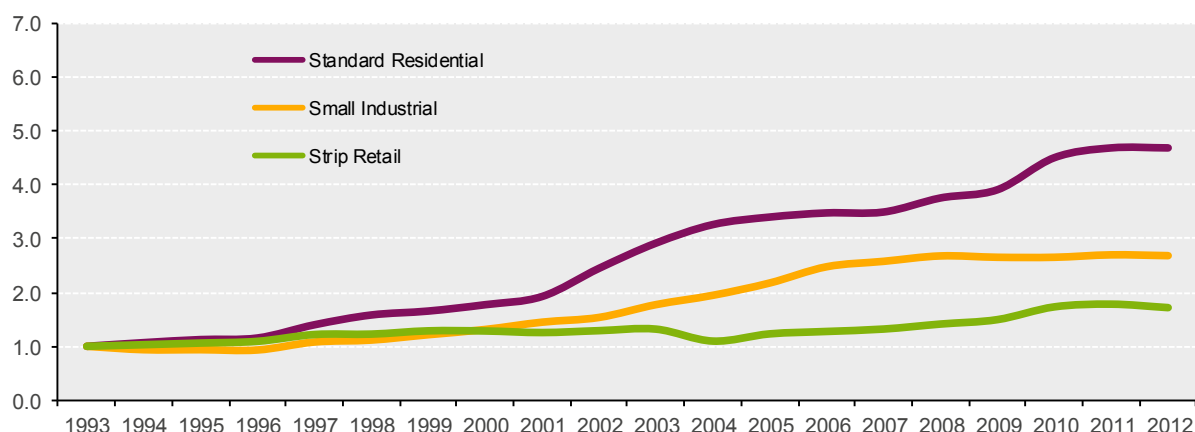
In terms of the trend lines we can see some general consistency over the 20-year time series with the exception of the unusual and dramatic short term negative rate for Strip Retail in 2004.

It is difficult to correlate the growth rates with the identified NSW Government planning initiatives, but this may just reflect the Inner Zone location where we intuitively anticipated Standard Residential to outperform i.e. this asset class in this location is less affected by planning decisions.

## Sydney - Inner Zone Land Value Growth Indices

Sydney Metro Inner Zone 1993-2012

CHART 19



Source : NSW Valuer General and Urbis

Our previous comments relating to the out-performance of Standard Residential within the Inner Zone appear confirmed when considered with the above Inner Zone Land Value Growth Indices chart (Chart 19).

## Sydney - Inner Zone (0-15km from CBD)

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE\*

TABLE 16

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	7.88%	10.53%	6.16%	8.38%
Small Industrial	1.68%	10.19%	0.82%	4.44%
Strip Retail	3.61%	0.75%	5.60%	3.11%
<b>Overall</b>	<b>4.39%</b>	<b>7.15%</b>	<b>4.19%</b>	<b>5.31%</b>
CPI (Sydney)	2.05%	3.20%	2.78%	2.63%
Capital Growth PA in Real Terms	2.34%	3.96%	1.42%	2.68%

Source : Urbis

Table 16 summarises our analysis of Sydney's Inner Zone, succinctly identifying the relative performance of each analysed Land Use class against milestone periods within the overall timeline that appear to have influenced performance.

The out-performing Land Use class during 1993-2012 is that of Standard Residential (8.38%). The Inner Zone overall when all land uses are considered returned a consolidated annual 20-year growth rate figure of 5.31% (notional) and 2.68% (real).

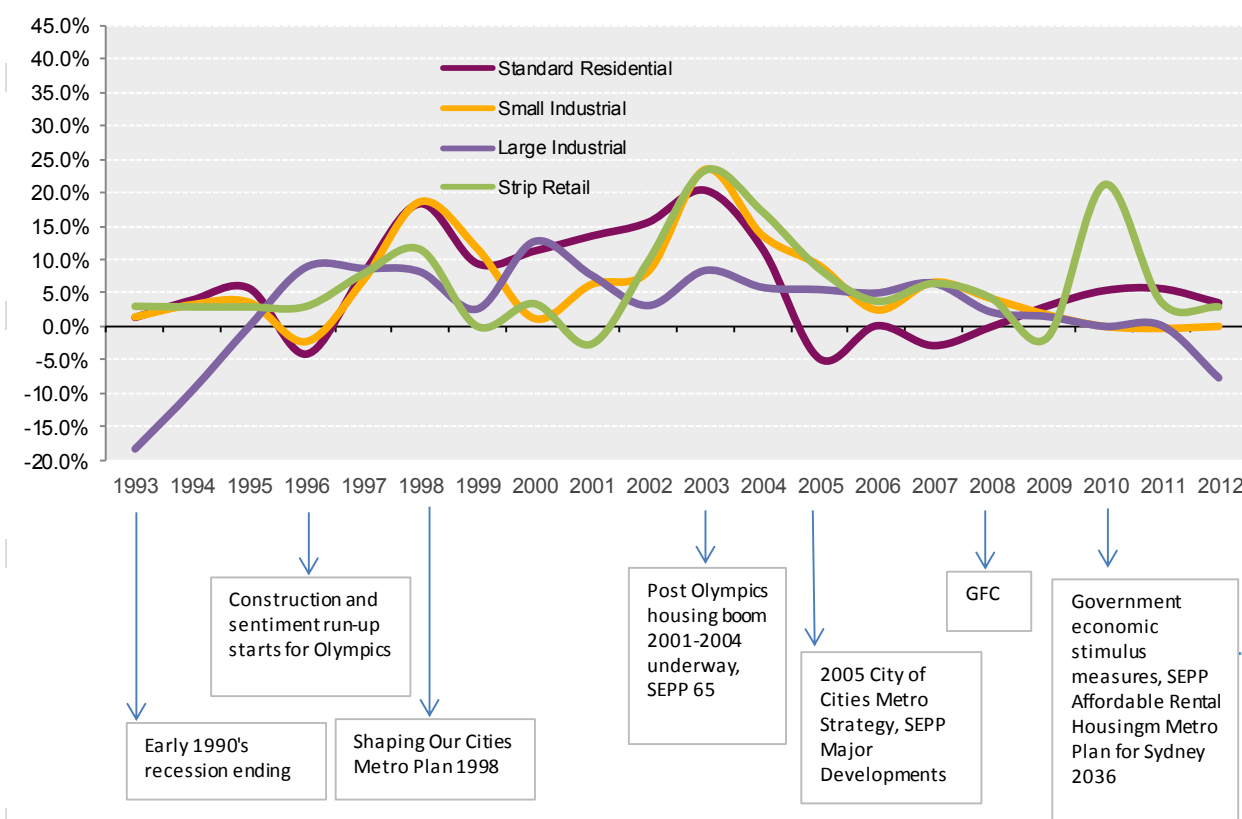
We caution that the consolidated average figures are not "weighted" by value or number.

### 3.2.9 ALL GROWTH RATES – SYDNEY BASIN MIDDLE ZONE

## Sydney - Middle Zone Rolling Annual Growth Rates

Sydney Metro Middle Zone 1993-2012

CHART 20



Source : NSW Valuer General and Urbis

Chart 20 above brings together the Land Use types analysed for Sydney - Middle Zone over a timeline of economic and planning events to see what correlations may occur.

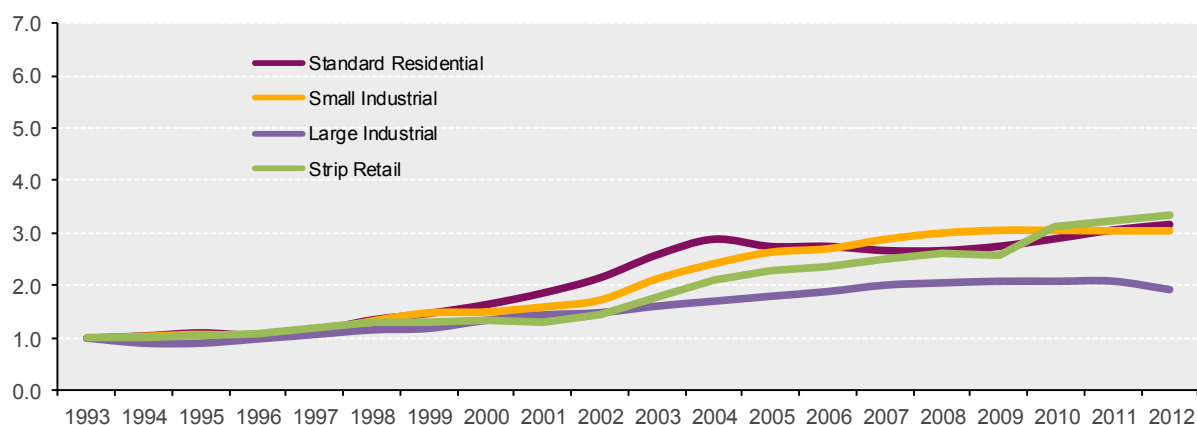
In terms of the trend lines we can identify the low value base of Large Industrial; and the negative growth for Standard Residential experienced by the Middle Zone (similar to the Outer Zone) from around 2003/2004 before a modest recovery from 2008 onwards consistent with overall historic growth patterns.

Again, it is difficult to correlate the growth rates with NSW Government planning initiatives, such influences likely being more localised and not able to be picked up in our property basket.

## Sydney - Middle Zone Land Value Growth Indices

Sydney Metro Middle Zone 1993-2012

CHART 21



Source: NSW Valuer General and Urbis

The Middle Zone Land Value Growth Indices chart above (Chart 21) confirms the relative conformity of growth for each land use class.

The exception is Large Industrial which, whilst illustrating consistent growth over the period (averaging 2.55% per annum) lags behind the other asset classes and even falls for 2011 (intuitively we believe, if our basket was larger, the trend line would not drop but maintain its consistency i.e. we perceive no market based reason for the drop).

## Sydney - Middle Zone (15-30km from CBD)

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE\*

TABLE 17

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	6.72%	7.63%	3.50%	6.23%
Small Industrial	5.54%	9.97%	1.13%	5.99%
Large Industrial	1.63%	6.00%	-0.79%	2.55%
Strip Retail	4.32%	9.49%	6.07%	6.57%
<b>Overall</b>	<b>4.55%</b>	<b>8.27%</b>	<b>2.48%</b>	<b>5.34%</b>
CPI (Sydney)	2.05%	3.20%	2.78%	2.63%
Capital Growth PA in Real Terms	2.51%	5.08%	-0.30%	2.70%

\*Average, non-weighted

Source: Urbis

Table 17 summarises our analysis of the analysed Land Uses in the Middle Zone, succinctly identifying the relative performance of each class against milestone periods within the overall timeline that appear to have influenced performance.

The out-performing Land Use class is that of Strip Retail (6.57%) closely followed by Standard Residential at (6.23%) with the Middle Zone overall returning an annual 20-year growth rate figure of 5.34% (notional) and 2.70% (real).

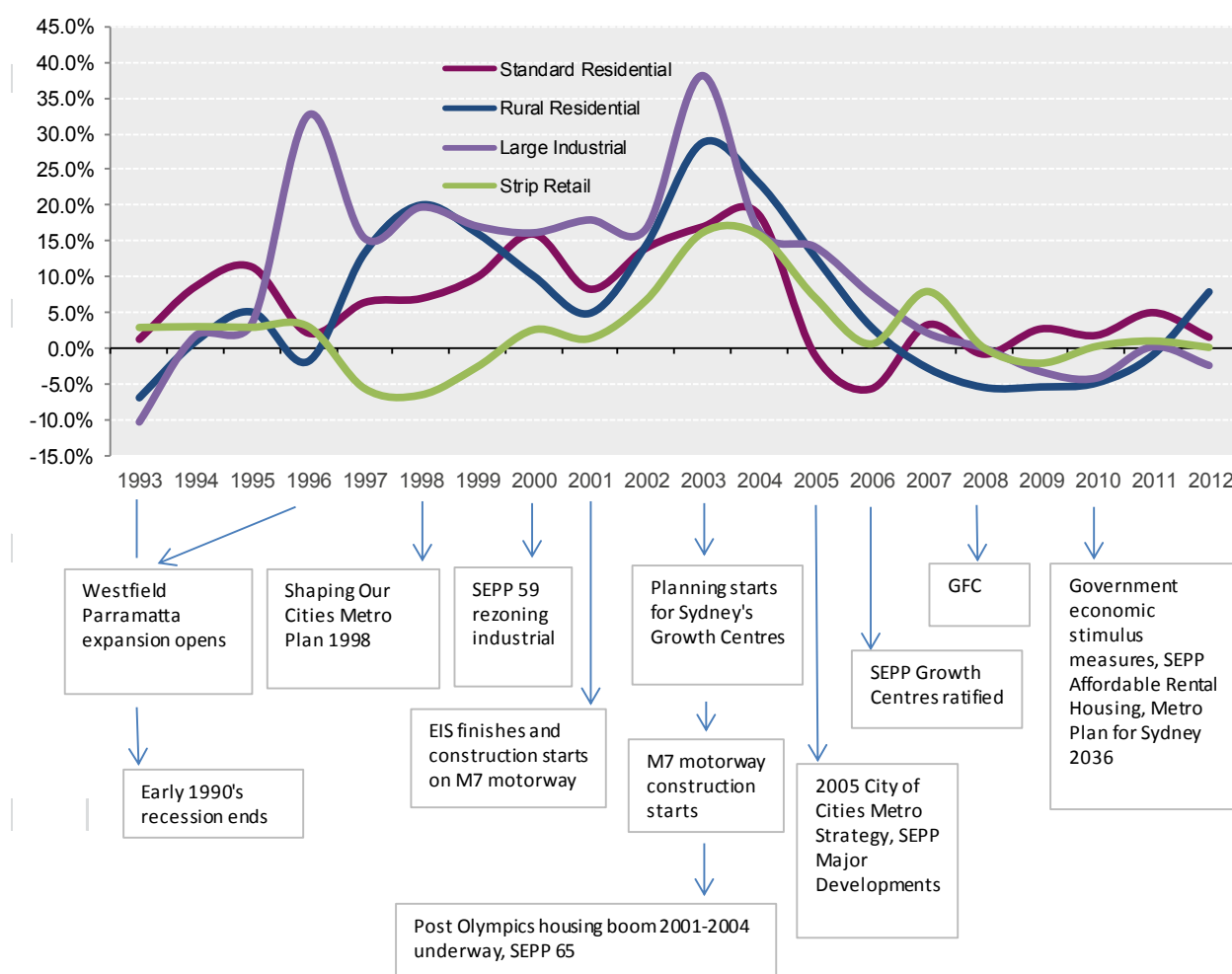
We caution that the consolidated average figures are not “weighted” by value or number.

### 3.2.10 ALL GROWTH RATES – SYDNEY BASIN OUTER ZONE

## Sydney - Outer Zone Rolling Annual Growth Rates

Sydney Metro Outer Zone 1993-2012

CHART 22



Source : NSW Valuer General and Urbis

Chart 22 above brings together the Land Use types analysed for the Sydney - Outer Zone over a timeline of economic and planning events to see what correlations may occur.

In terms of the trend lines we can again see the low value base of Large Industrial but unlike the Middle Zone the Outer Zone Large Industrial increases in value dramatically, with two significant peaks (the peak in 2003 most likely attributable to both infrastructure creation and planning activity) before moderating in line with the majority of Sydney's industrial market with the GFC.

The relative under performer is Strip Retail, and we assume that this asset class very much in the outer parts of Sydney has been heavily impacted by the influences of regional shopping centres and bulky goods centres.

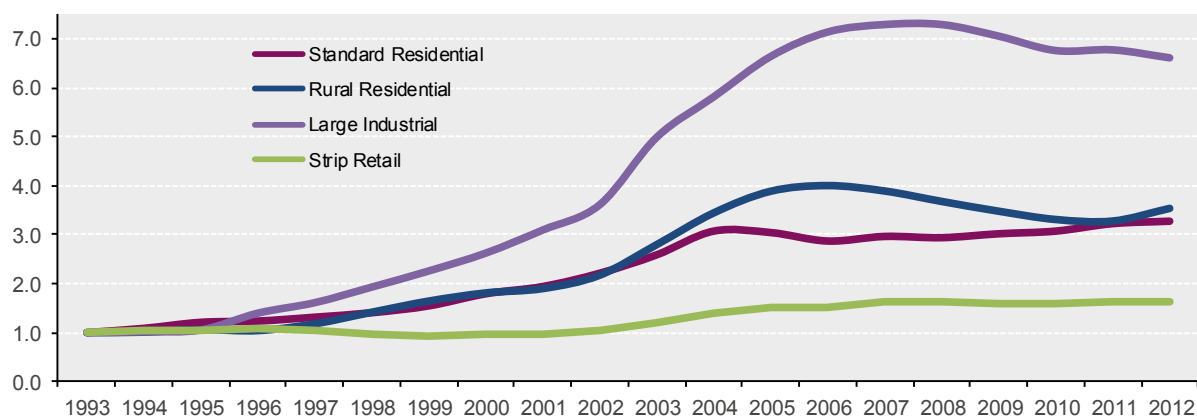
Correlation with NSW Government planning initiatives appears possible with Large Industrial (as discussed) and Rural Residential (via metropolitan wide planning strategies such as the Growth Centres).

Otherwise the trend lines appear to more closely follow economic influences.

## Sydney - Outer Zone Land Value Growth Indices

Sydney Metro Outer Zone 1993-2012

CHART 23



Source : NSW Valuer General and Urbis

The Outer Zone Land Value Growth Indices chart above (Chart 23) confirms the outperformance of Large Industrial and (perhaps) the market speculation between 2004 - 2007 for Rural Residential possibly aligned with the announcement of the Growth Centres.

## Sydney - Outer Zone

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE

TABLE 18

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	7.83%	7.79%	2.03%	6.37%
Rural Residential	7.10%	12.03%	-1.76%	6.61%
Large Industrial	11.98%	16.17%	-1.92%	9.97%
Strip Retail	-0.04%	7.97%	-0.13%	2.74%
<b>Overall</b>	6.72%	10.99%	-0.45%	<b>6.42%</b>
CPI (Sydney)	2.05%	3.20%	2.78%	2.63%
Capital Growth PA in Real Terms	4.67%	7.79%	-3.22%	3.79%

Source : Urbis

Table 18 summarises our analysis of the Outer Zone, succinctly identifying the relative performance of each analysed land use class against milestone periods within the overall timeline that appear to have influenced performance.

The outperforming land use class is that of Large Industrial (9.97%) with Rural Residential and Standard Residential closely correlated. The Outer Zone overall is assessed as returning an annual 20-year growth rate figure of 6.42% (notional) and 3.79% (real).

We caution that the consolidated average figures are not "weighted" by value or number.



# MELBOURNE BASIN ANALYSIS

## 4.1 STUDY AREAS (ZONES)

The Melbourne metropolitan area by size (area) is one of the largest cities in the world, spanning approximately 100 kilometres from east to west and covering more than 7,500 km<sup>2</sup>. The city is centred around Port Phillip Bay and its metropolitan area extends south from the city centre, along the eastern and western shorelines of Port Phillip, and expands north and west into the hinterland. The main regions of Melbourne are generally referred to as “inner city”, “middle suburbs” and “outer suburbs” (e.g. outer north, outer west etc.).

For our Melbourne Basin analysis we have adopted concentric zones of 0 to 15 kilometres (inner), 15 to 30 kilometres (middle), and over 30 kilometres (outer) – each radiating from the nucleus of the Melbourne CBD.

Within each zone we have analysed a basket of properties as land value proxies for land uses such as Standard Residential, Small Industrial, Large Industrial, Strip Retail and Rural Residential.

## 4.2 VALUE DRIVERS

### 4.2.1 LAND SUPPLY AND DEMAND

In the timeline context, capital growth of land within the Melbourne Basin over the past 20-years appears to have been influenced by the following:

- A recession recovery and early growth period between 1993 - 2000;
- A high market activity and growth period post 2000 (2001- 2007) which appears attributable to strong domestic and global economic fundamentals being experienced during that period; and
- A property market correction during the slower economic period of 2008- 2012, being the period after the GFC.

Beyond major economic and interest rate influences, Melbourne residential land values have been influenced by high residential lot production, peaking at 20,004 lots in 2002- 2003 after a period of high supply with supply significantly falling thereafter to below 10,000 lots in both 2006 and 2007. Since 1996 net interstate migration has generally been stable, trending around 5,000 (+/-) annually, whilst Victoria's proportion of overseas migration has remained strong, peaking at around 83,500 in 2008- 2009.

With over 80,000 hectares (39,630 and 43,600 hectares) added following amendments to the Urban Growth Boundary (UGB) in 2003 and 2010 respectively, the rate of growth in the Middle and Outer Zones has generally fallen in both instances. Conversely the rural residential areas have seen stronger growth around those dates as some rural land has found a potential higher and better (redevelopment) opportunity.

Industrial land supply followed the broader economic climate leading up to 2002, resulting in generally constrained growth. Stronger peaks in growth were achieved in the Middle and Outer Zones immediately thereafter, benefiting from the Western Ring Road (early 1990's) and opening of the CityLink (circa 2000) and buoyant economic conditions. However this value growth eventually became constrained as land supply was expanded to meet strong demand. The peak in the Inner Zone areas was 2006- 2007 as the opportunity of higher & better use alternatives became more prevalent the marketplace.

Strip Retail growth has been strong since 2002 once higher redevelopment opportunities (i.e. mixed use, retail with residential) became more prominent in the Melbourne market place - medium density residential living has become more widely accepted. As the retail market has softened this level of growth has also softened.

### 4.2.2 MELBOURNE AND VICTORIAN ECONOMIC CIRCUMSTANCES 1993- 2012

Over the last 20 years, the Victorian and more particularly Melbourne economy has evolved from a manufacturing hub to a diversified 'post-industrial' economy providing a competitive and global trading

environment. As a result, since the early 1990's, the Victorian economy has typically out-performed the national economy.

The Victorian state economy experienced a sharp contraction in growth in the late 1980's / early 1990's coinciding with a recession in the Australian economy. The industrial sector contracted sharply, with a range of flow-on effects. By the mid 1990's however the economy had regained momentum recording positive economic growth which continued through til the late 1990's. During this period (1995- 2000) GSP was consistently placed between 3% and 5% and peaked immediately prior to 2000 (Sydney Olympics). Most notably:

- The 1991- 1992 recession was much deeper in Melbourne than the rest of Australia;
- The Asian Financial Crisis which occurred in the late 1990's (circa 1997) had limited impact on economic growth in Victoria; and
- The Victorian economy experienced a large boom in 1999 and subsequent large bust in 2001, compared to the rest of the country.

GSP for Victoria during the period 2001- 2012 averaged 2.85%. During such time the Victorian economy experienced the following:

- A slowdown / contraction in the manufacturing sector;
- Solid population growth exceeding the national average;
- Notable increase in container trade (input / export);
- A robust housing market with significant appreciation in values;
- Modest population growth;
- Relatively low unemployment; and
- Further diversification in the State's economy.

The downturn in the US economy and global economies during 2008- 2009 affected the Victorian economy significantly (GSP was 1.08% in 2009) although the overall impact of the GFC on the Australian economy was smaller than in other advanced countries.

A number of factors contributed to this including substantial Federal and State fiscal and monetary stimulus initiatives; the strength of the Chinese economy and the rebound in commodity prices; the flexibility of the Australian economy (and in particular the exchange rate); and the strong financial system.

The Victorian economy today is considered a second tier economy lagging behind the resource rich state of Western Australia which leads the way on economic growth, construction work, unemployment, retail trade, population growth and equipment investment. The economy weakened noticeably throughout 2012 recording the lowest rate of growth (to the September quarter) in Victoria in 3 years and lowest of all mainland states.

The Victorian Treasury and market economists generally expect GSP to grow by circa 2.00% in 2012- 2013 before increasing to 2.50% in 2013-2014. Deloitte Access Economics forecasts similar growth rates of 2.00% in 2012- 2013 and 2.70% in 2013- 2014. Growth is expected to be underpinned by an improvement in the housing market and household spending levels in response to an improvement in domestic and international conditions.

Nevertheless, growth over the short to medium term is expected to be modest by comparison to rates seen over the past decade<sup>5</sup>.

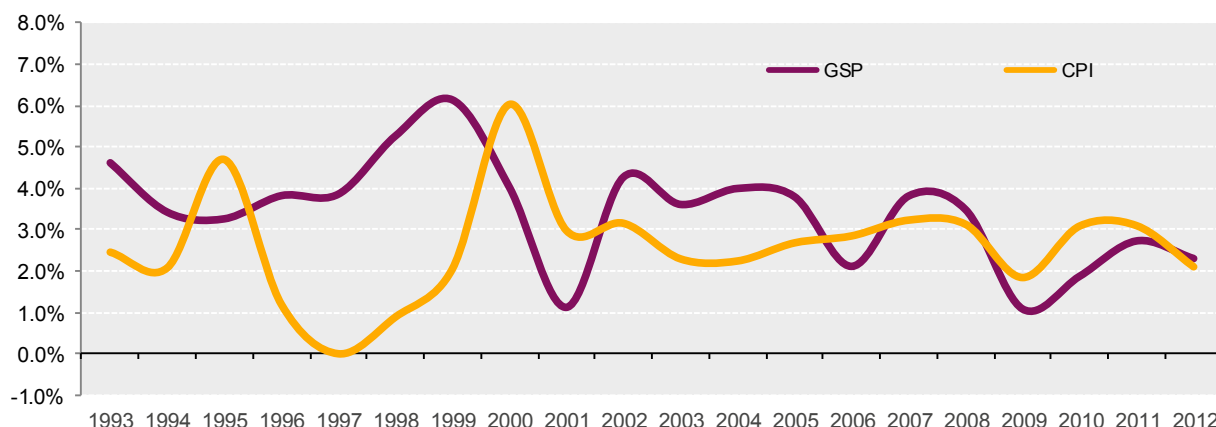
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<sup>5</sup> Deloitte Access Economics, Business Outlook, September 2012; Victorian Treasury, Budget Update, 2012/13

## Melbourne - Economic Fundamentals

Melbourne CPI and VIC GSP

CHART 24



Source : ABS and Urbis

Chart 24 above identifies, in terms of GSP, the:

- Rebound from the early 1990's recession;
- A deterioration in the general state economy post 2000, before a recovery led by housing and industrial construction and development in the years 2001- 2005; and
- The GFC correction in 2008 and modest recovery since on the back of various government stimulus initiatives.

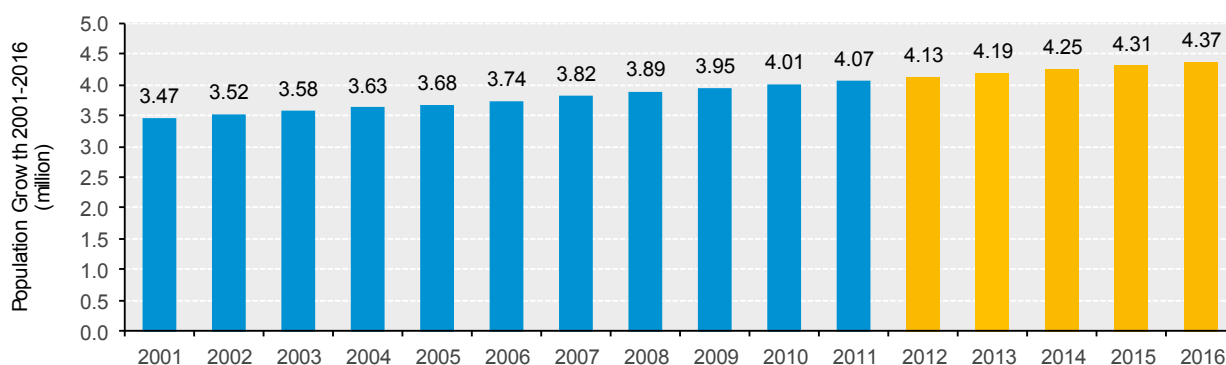
Running CPI (Melbourne) is also plotted.

Below we note Melbourne's relatively strong rate of population growth (1.5% per annum over 11 years) and forward estimates sourced from the Australian Bureau of Statistics (ABS):

## Melbourne Population Growth and Projections

Historic Growth (blue) and Forecast Growth (yellow)

CHART 25



Source : ABS Population Statistics 2011

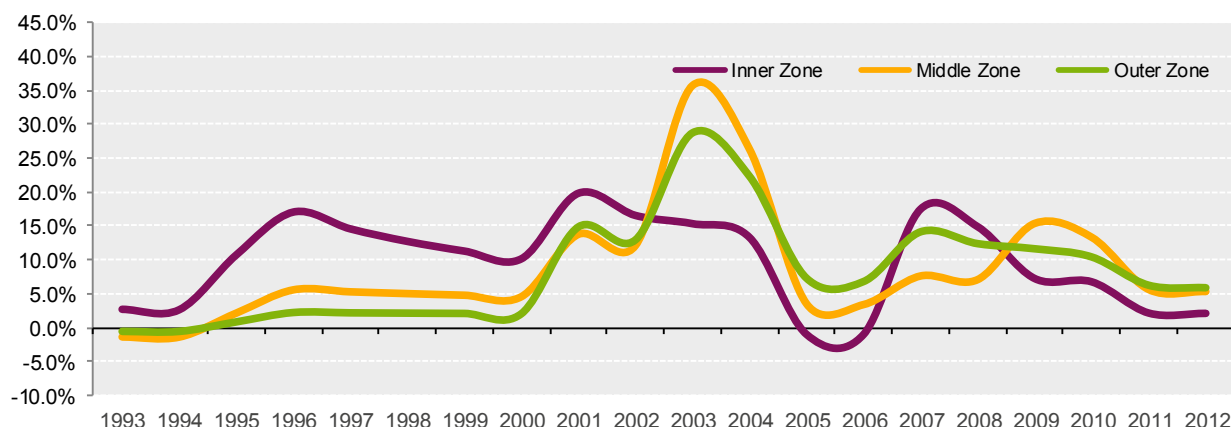
### 4.2.3 GROWTH RATES – STANDARD RESIDENTIAL

Our Melbourne Basin analysis commences with an examination of the assessed annual growth rates for each Land Use type adopted within this report. The following chart is for Standard Residential.

## Melbourne - Standard Residential Rolling Annual Growth Rate

Melbourne Metro Inner, Middle and Outer Zones 1993-2012

CHART 26



Source : Local Government Authorities (LGA)

As can be seen in Chart 26 the annual value growth rate of Standard Residential within the inner, middle and outer zones generally follows the same trend lines and market cycles. The Inner Zone experienced stronger annual growth during the 1990's compared to that of Middle and Outer Zones; however it experienced lower growth during the early 2000's property boom.

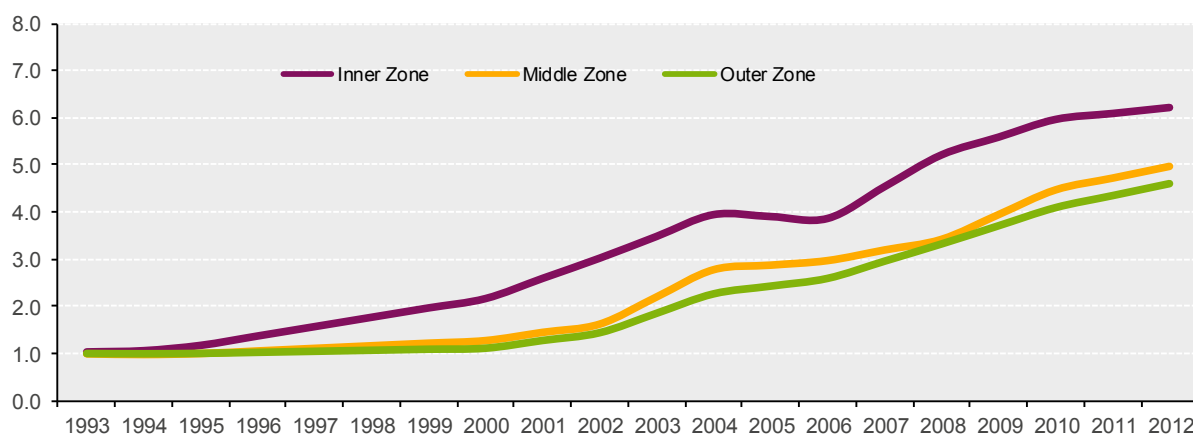
Generally the Inner Zone appears to be closely aligned to the economic sentiment of home buyers e.g. the zone trends in line with overall economic conditions (i.e. GSP and CPI). The Middle and Outer Zones also appear to be impacted by economic conditions and sentiment; however they have experienced greater peaks than that of the Inner Zone, following a period of modest growth during the 1990s.

Also noted for all zones is the collapse of the residential market in 2004 resulting in a significant correction in growth.

## Melbourne - Standard Residential Land Value Index

Melbourne Metro Inner, Middle and Outer Zones 1993-2012

CHART 27



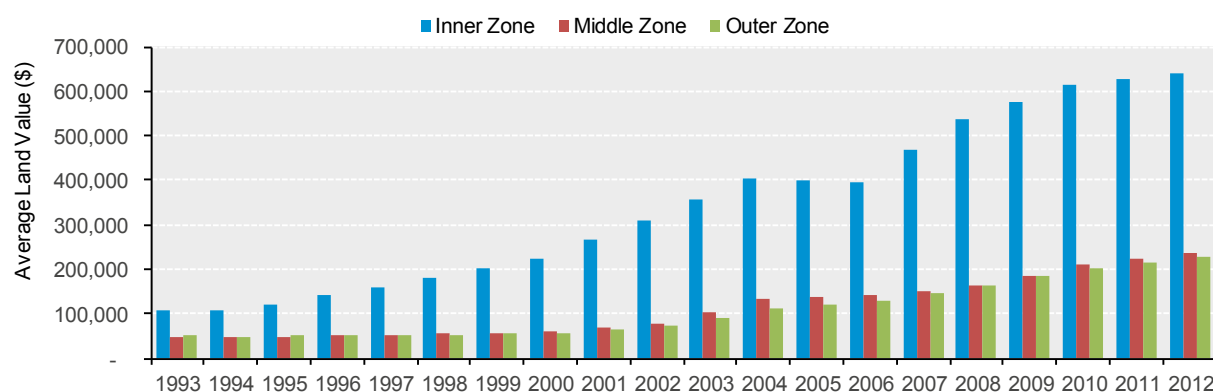
Source : Local Government Authorities (LGA)

The associated Melbourne-Standard Residential indices chart is above (Chart 27) where the outperformance of the Inner Zone can be observed compared to that of the Middle and Outer Zones.

## Melbourne - Standard Residential Rolling Annual Average Value

Melbourne Metro Inner, Middle and Outer Zones 1993-2012

CHART 28



Source : Local Government Authorities (LGA)

For context, we note the above average Standard Residential rolling statutory land values for each of the Inner, Middle and Outer zones (Chart 28). We caution that these are the averages only for properties within our analysis basket, and therefore a more exhaustive study may yield a different set of value conclusions.

## Melbourne - Standard Residential

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 19

	1993-2000	2001-2007	2008-2012	1993-2012
Inner Zone < 15km	10.21%	11.48%	6.61%	9.76%
Middle Zone 15km to 30km	3.05%	14.62%	9.33%	8.67%
Outer Zone > 30km	1.27%	15.29%	9.30%	8.18%
<b>Overall</b>	<b>4.84%</b>	<b>13.80%</b>	<b>8.41%</b>	<b>8.87%</b>
CPI (Melbourne)	2.42%	2.77%	2.65%	2.60%
Capital Growth PA in Real Terms	2.42%	11.02%	5.76%	6.27%

Source : Urbis

The above Table 19 summarises our analysis of Melbourne - Standard Residential recognising a number of important market periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the Standard Residential growth rates within each zone.

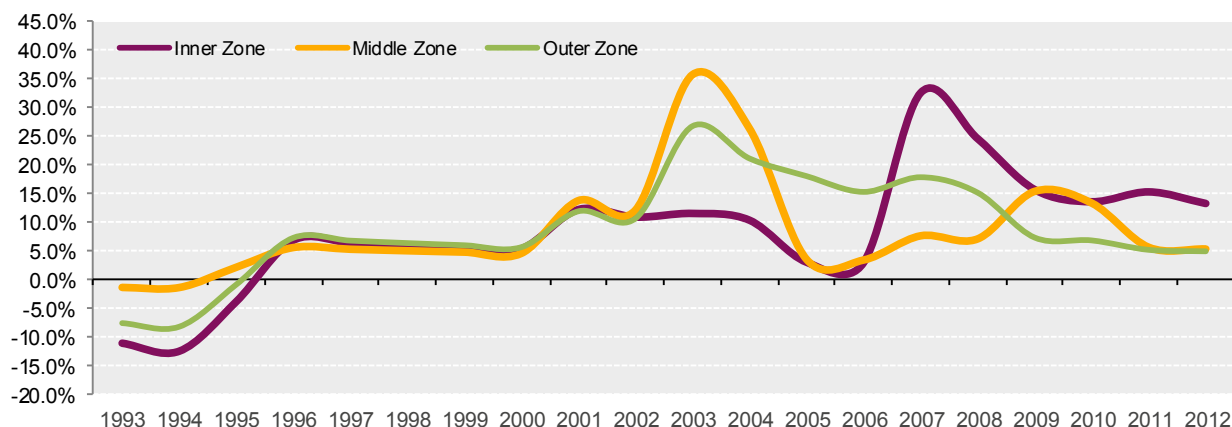
The strong Standard Residential growth rates during the buoyant 2001- 2007 period for all zones is noteworthy.

#### 4.2.4 GROWTH RATES – SMALL INDUSTRIAL

### Melbourne - Small Industrial Rolling Annual Growth Rate

Melbourne Metro Inner, Middle and Outer Zones 1993-2012

CHART 29



Source : Local Government Authorities (LGA)

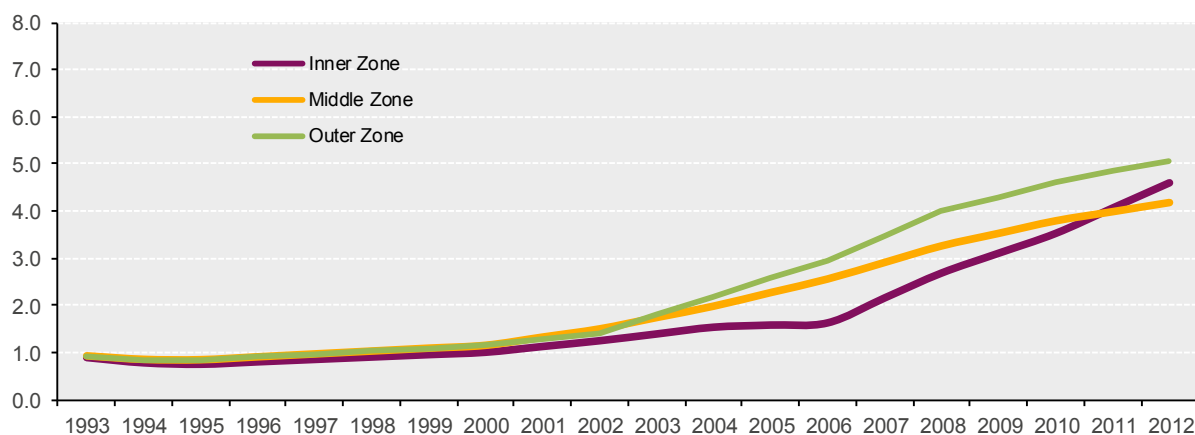
Chart 29 above plots the annual land value growth rates for Small Industrial within the Inner, Middle and Outer Zones.

As can be seen, Melbourne – Small Industrial recovers from the early 1990's recession between 1993 and 1996 and experienced modest growth up until 2000. The market experienced strong growth in most years between 2001-2007 before softening (correcting) in the years following the GFC. Notably the market has not experienced negative growth since the GFC.

### Melbourne - Small Industrial Land Value Index

Melbourne Metro Inner, Middle and Outer Zones 1993-2012

CHART 30



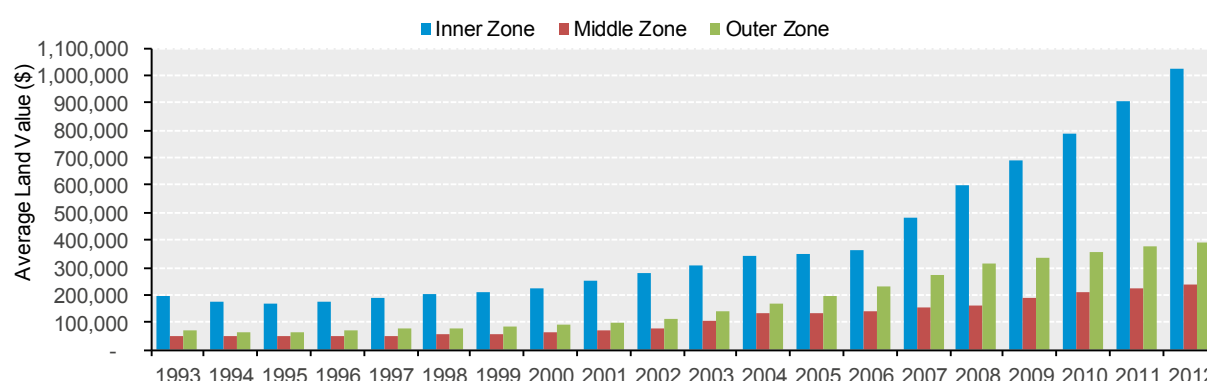
Source : Local Government Authorities (LGA)

The associated Melbourne-Small Industrial indices chart is above (Chart 30) where the Inner and Outer Zones slightly outperform the Middle Zone.

## Melbourne - Small Industrial Rolling Annual Average Value

Melbourne Metro Inner, Middle and Outer Zones 1993-2012

CHART 31



Source : Local Government Authorities (LGA)

For context, we note the above average Small Industrial rolling statutory land values for each of the Inner, Middle and Outer zones (Chart 31).

The higher inner city land values, and perhaps opportunity for a better higher & best use value appear reflected in the Inner Zone growth. We caution that these are the averages only for properties within our analysis basket, and therefore a more exhaustive study may yield a different set of value conclusions.

## Melbourne - Small Industrial

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 20

	1993-2000	2001-2007	2008-2012	1993-2012
Inner Zone < 15km	0.33%	11.91%	16.46%	8.41%
Middle Zone 15km to 30km	1.94%	14.19%	7.56%	7.63%
Outer Zone > 30km	1.89%	17.35%	7.86%	8.79%
<b>Overall</b>	1.38%	14.48%	10.62%	<b>8.28%</b>
CPI (Melbourne)	2.42%	2.77%	2.65%	2.60%
Capital Growth PA in Real Terms	-1.04%	11.71%	7.97%	5.68%

Source : Urbis

The above table (Table 20) summarises our analysis of Melbourne – Small Industrial recognising a number of important market periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the Small Industrial growth rates within each zone.

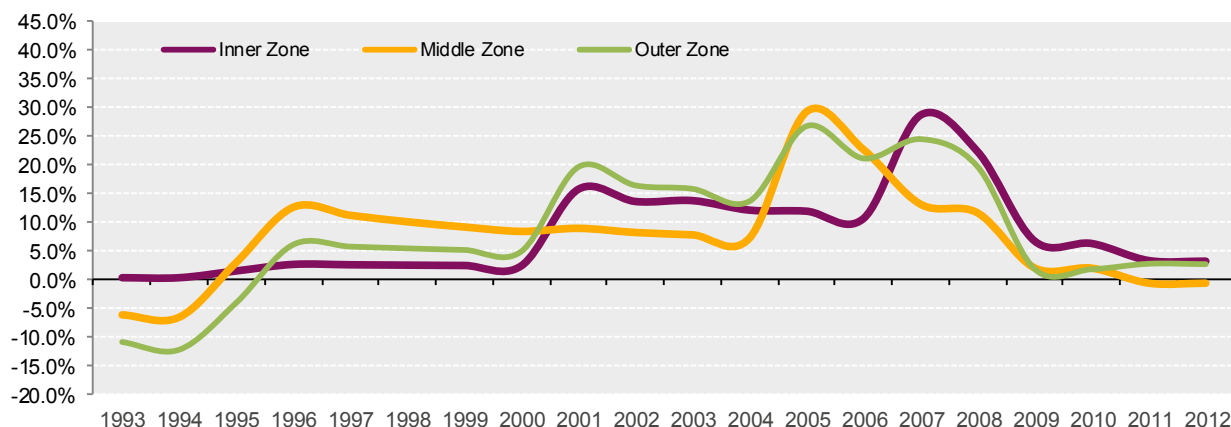
The strong Small Industrial growth rates during the buoyant 2001- 2007 period for all zones is again noteworthy.

## 4.2.5 GROWTH RATES – LARGE INDUSTRIAL

### Melbourne - Large Industrial Rolling Annual Growth Rate

Melbourne Metro Middle and Outer Zones 1993-2012

CHART 32



Source : Local Government Authorities (LGA)

Chart 32 above plots the annual land value growth rates for Large Industrial within the Inner, Middle and Outer Zones.

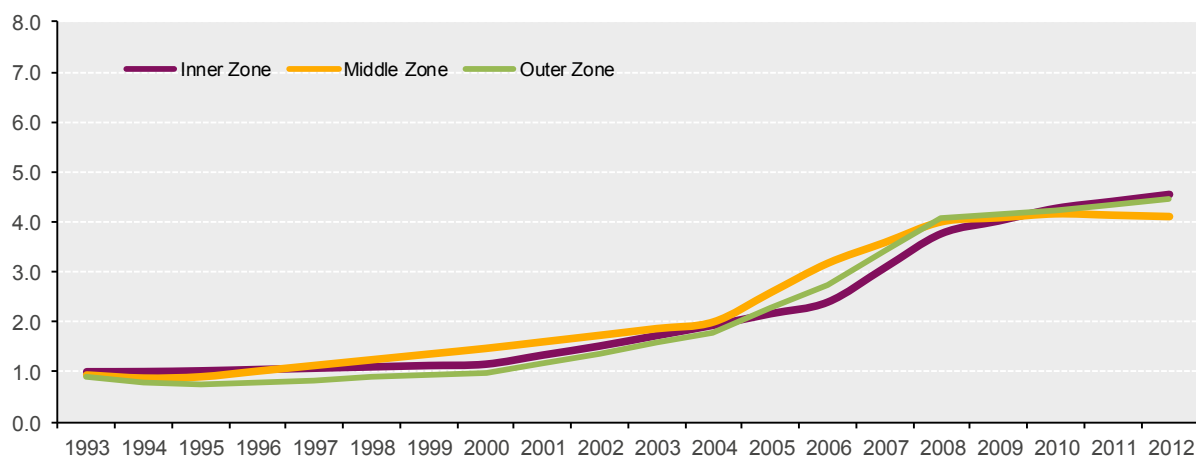
As evidenced above, Melbourne – Large Industrial Market recovers from the early 1990's recession, experiencing modest growth up until 2000. The market experienced a period of strong positive growth, generally mirroring economic conditions during the early to mid-2000s, before correcting in the period post 2008 (GFC).

Little to no growth is recorded in the period following the GFC. As can be seen above, the Middle and Outer Zones tend to experience greater spikes in growth (volatility), often due to the influence of new infrastructure (i.e. CityLink Tollway in 2000, Craigieburn Bypass (Hume Freeway) in 2006 and EastLink Tollway in 2008).

### Melbourne - Large Industrial Land Value Index

Melbourne Metro Inner, Middle and Outer Zones 1993-2012

CHART 33



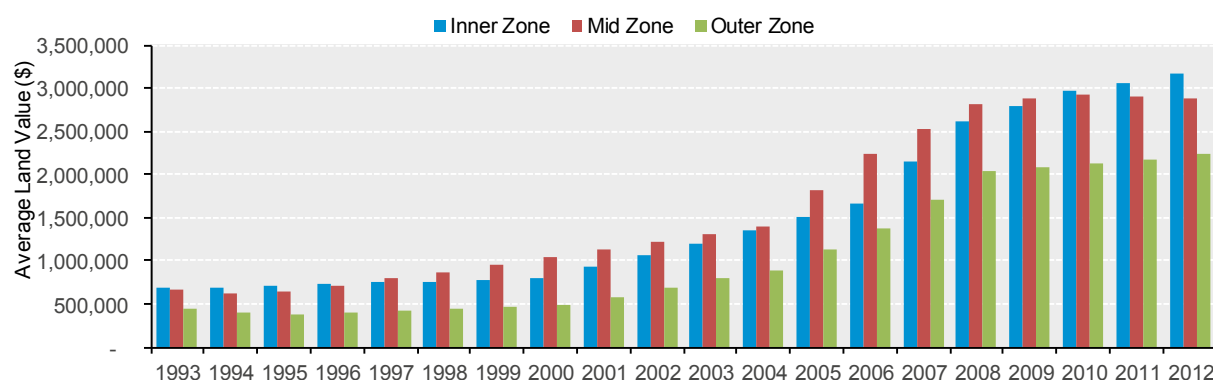
Source : Local Government Authorities (LGA)

The associated Melbourne – Large Industrial indices chart is above (Chart 33), where it can be seen that the performance of Inner, Middle and Outer Zones is notably consistent.

## Melbourne - Large Industrial Rolling Annual Average Value

Melbourne Metro Inner, Middle and Outer Zones 1993-2012

CHART 34



Source : Local Government Authorities (LGA)

For context, we note the above average Large Industrial rolling statutory land values for each of the Inner, Middle and Outer zones (Chart 34). We caution that these are the averages only for properties within our analysis basket, and therefore a more exhaustive study may yield a different set of value conclusions.

## Melbourne - Large Industrial

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 21

	1993-2000	2001-2007	2008-2012	1993-2012
Inner Zone < 15km	1.81%	15.19%	8.34%	8.13%
Middle Zone 15km to 30km	5.18%	13.87%	2.84%	7.64%
Outer Zone > 30km	-0.01%	19.69%	5.72%	8.32%
<b>Overall</b>	<b>2.33%</b>	<b>16.25%</b>	<b>5.63%</b>	<b>8.03%</b>
CPI (Melbourne)	2.42%	2.77%	2.65%	2.60%
Capital Growth PA in Real Terms	-0.10%	13.48%	2.98%	5.42%

Source : Urbis

Table 21 summarises our analysis of Melbourne – Large Industrial, recognising a number of important market periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the Large Industrial growth rates within each zone.

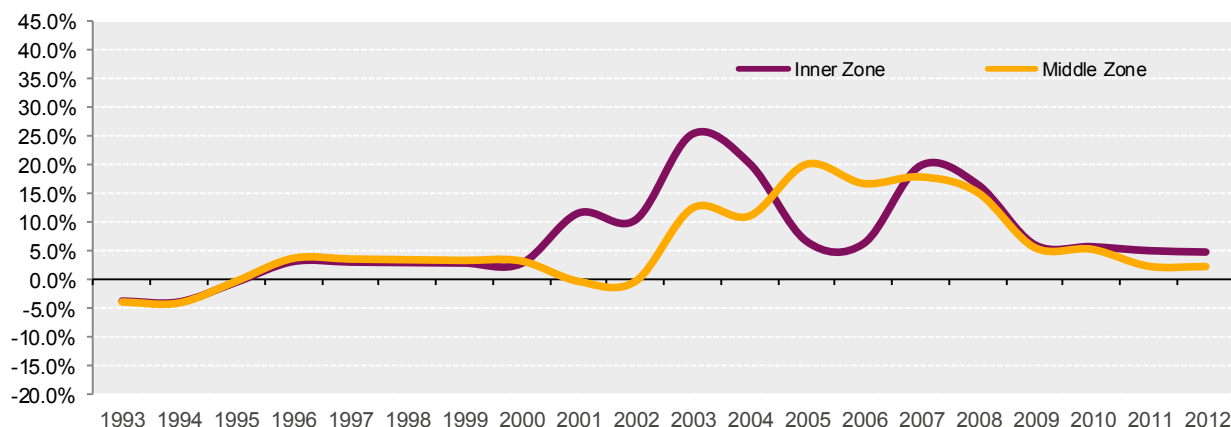
The strong Large Industrial growth rates during the buoyant 2001- 2007 period for all zones is again noteworthy.

## 4.2.6 GROWTH RATES – STRIP RETAIL

### Melbourne - Strip Retail Rolling Annual Growth Rate

Melbourne Metro Inner and Middle Zones 1993-2012

CHART 35



Source : Local Government Authorities (LGA)

Chart 35 above plots the annual land value growth rates for Strip Retail land in Melbourne. It has only been considered for the Inner and Middle Zones where this property class is best represented.

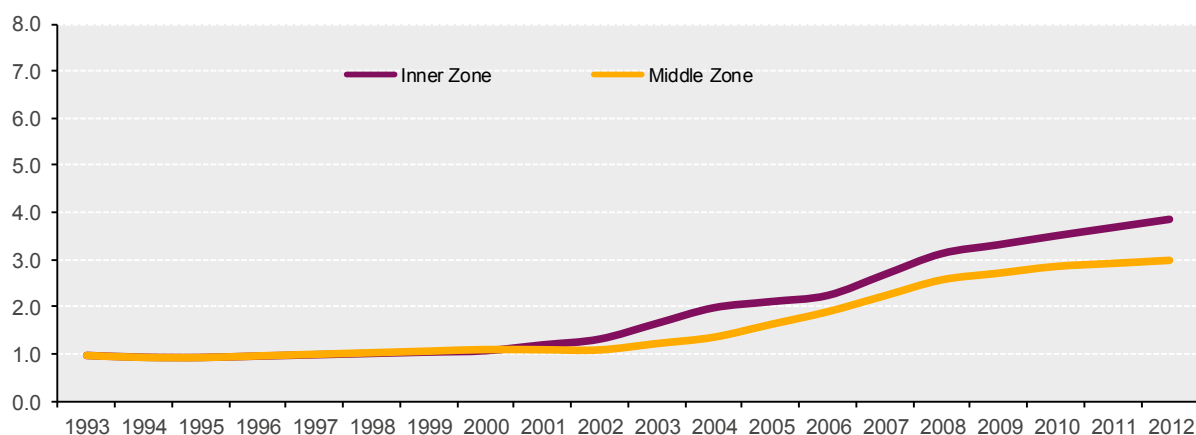
As can be seen, Strip Retail has experienced somewhat modest growth over the 20-year period in comparison to Standard Residential and industrial land. Furthermore it has experienced less volatility (lower peaks and shallower troughs) and has generally trended between 0% and 5% annual growth, save for the period 2002- 2008.

Generally Strip Retail experienced limited growth during the 1990's, strong growth during the 2000's coinciding with strong economic conditions, and limited growth in the years following the GFC (2008).

### Melbourne - Strip Retail Land Value Index

Melbourne Metro Inner and Middle Zones 1993-2012

CHART 36



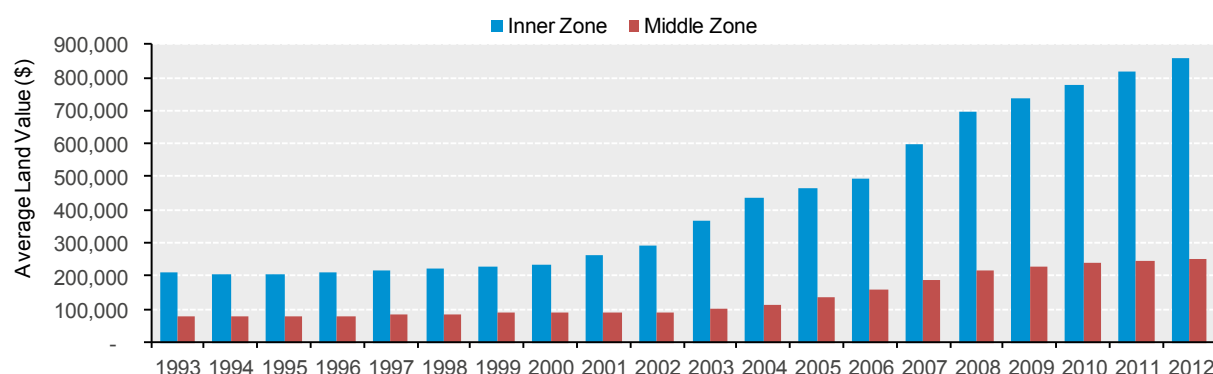
Source : Local Government Authorities (LGA)

The associated Melbourne – Strip Retail indices chart is above (Chart 36), where it can be seen that the Inner Zone marginally outperforms the Middle Zone.

## Melbourne - Strip Retail Rolling Annual Average Value

Melbourne Metro Inner and Middle Zones 1993-2012

CHART 37



Source : Local Government Authorities (LGA)

For context, we note the above average Strip Retail rolling statutory land values for each of the Inner and Middle zones (Chart 37). We caution that these are the averages only for properties within our analysis basket, and therefore a more exhaustive study may yield a different set of value conclusions

## Melbourne - Strip Retail

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 22

	1993-2000	2001-2007	2008-2012	1993-2012
Inner Zone < 15km	0.81%	14.33%	7.62%	7.24%
Middle Zone 15km to 30km	1.10%	11.07%	6.10%	5.84%
<b>Overall</b>	0.95%	12.70%	6.86%	<b>6.54%</b>
CPI (Melbourne)	2.42%	2.77%	2.65%	2.60%
Capital Growth PA in Real Terms	-1.47%	9.92%	4.21%	3.94%

Source : Urbis

Table 22 summarises our analysis of Melbourne – Strip Retail, recognising a number a number of important market periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the Strip Retail growth rates within each zone.

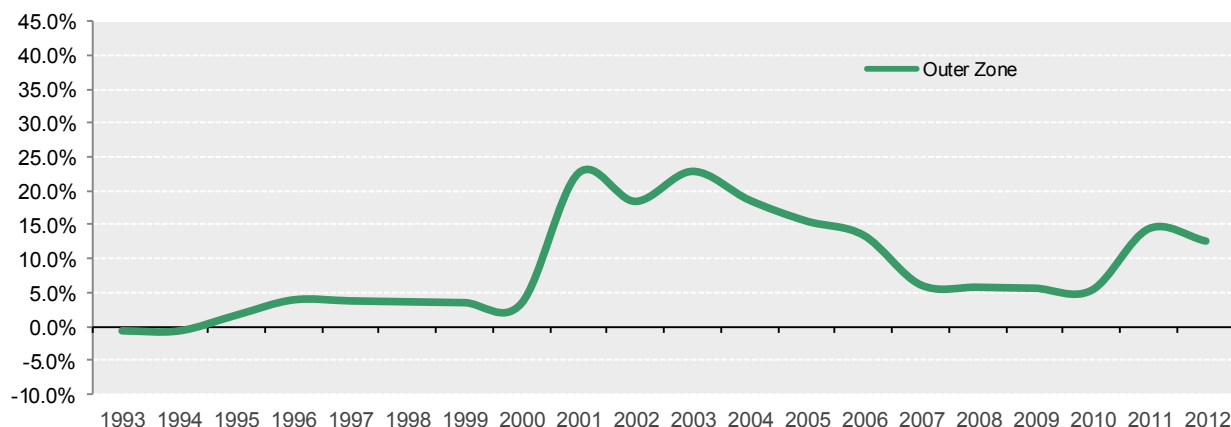
The strong Strip Retail growth rates during the buoyant 2001- 2007 period for both zones is again noteworthy. However the Inner Zone has marginally outperformed the Middle Zone, we assume due to favourable market pressure from developers seeking mixed use development opportunities.

## 4.2.7 GROWTH RATES – RURAL RESIDENTIAL

### Melbourne - Rural Residential Rolling Annual Growth Rate

Melbourne Metro Outer Zone 1993-2012

CHART 38



Source : Local Government Authorities (LGA)

Chart 38 above plots the annual land value growth rates for Rural Residential land in Melbourne. It has only been considered for the Outer Zone where this property class is best represented.

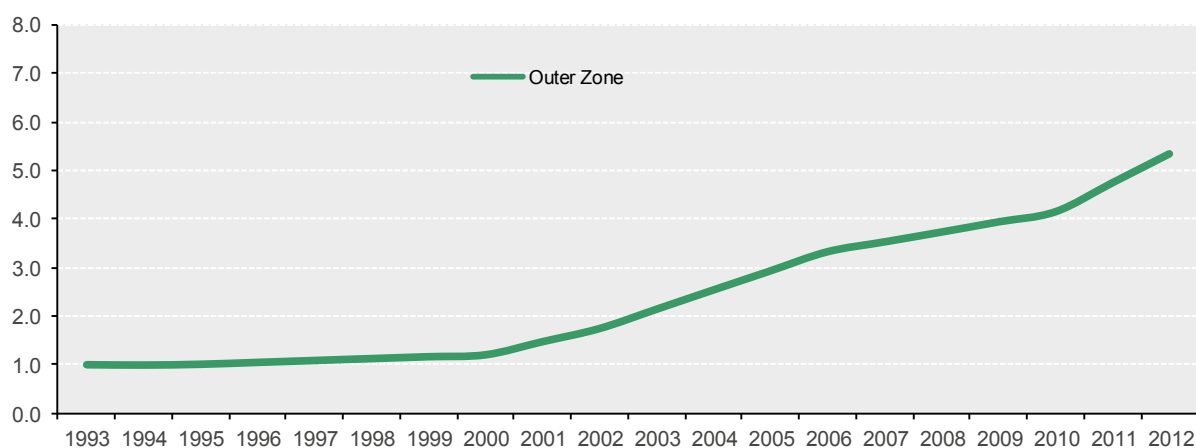
Rural Residential land value growth has largely trended in line with the broader Standard Residential market, experiencing limited growth in the 1990's, strong growth during the early to mid-2000s, before experiencing a correction, albeit short lived during the post GFC period.

A contributing factor to the strong growth in early to mid-2000's is the introduction and repositioning of the Urban Growth Boundary in 2003 and 2010. Also noted is a greater level of residential construction activity and return to strong positive growth in the late 2000's.

### Melbourne - Rural Residential Land Value Index

Melbourne Metro Outer Zone 1993-2012

CHART 39



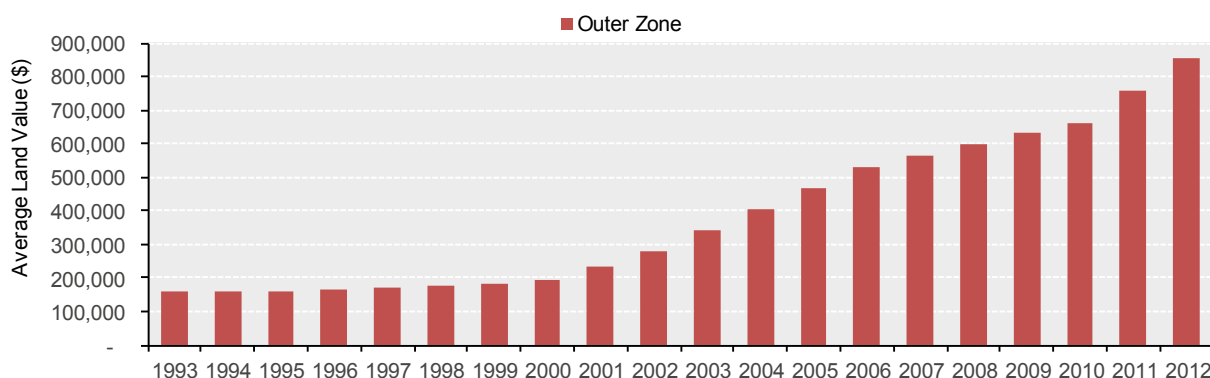
Source : Local Government Authorities (LGA)

The associated Melbourne – Rural Residential indices chart is above (Chart 39).

## Melbourne - Rural Residential Rolling Annual Average Value

Melbourne Outer Zones 1993-2012

CHART 40



Source : Local Government Authorities (LGA)

For context, we note the above average Rural Residential rolling statutory land values (Chart 40). We caution that these are the averages only for properties within our analysis basket, and therefore a more exhaustive study may yield a different set of value conclusions.

## Melbourne - Rural Residential

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 23

	1993-2000	2001-2007	2008-2012	1993-2012
Outer Zone > 30km	2.30%	16.80%	8.73%	8.98%
<b>Overall</b>	2.30%	16.80%	8.73%	<b>8.98%</b>
CPI (Melbourne)	2.42%	2.77%	2.65%	2.60%
Capital Growth PA in Real Terms	-0.13%	14.03%	6.08%	6.38%

Source : Urbis

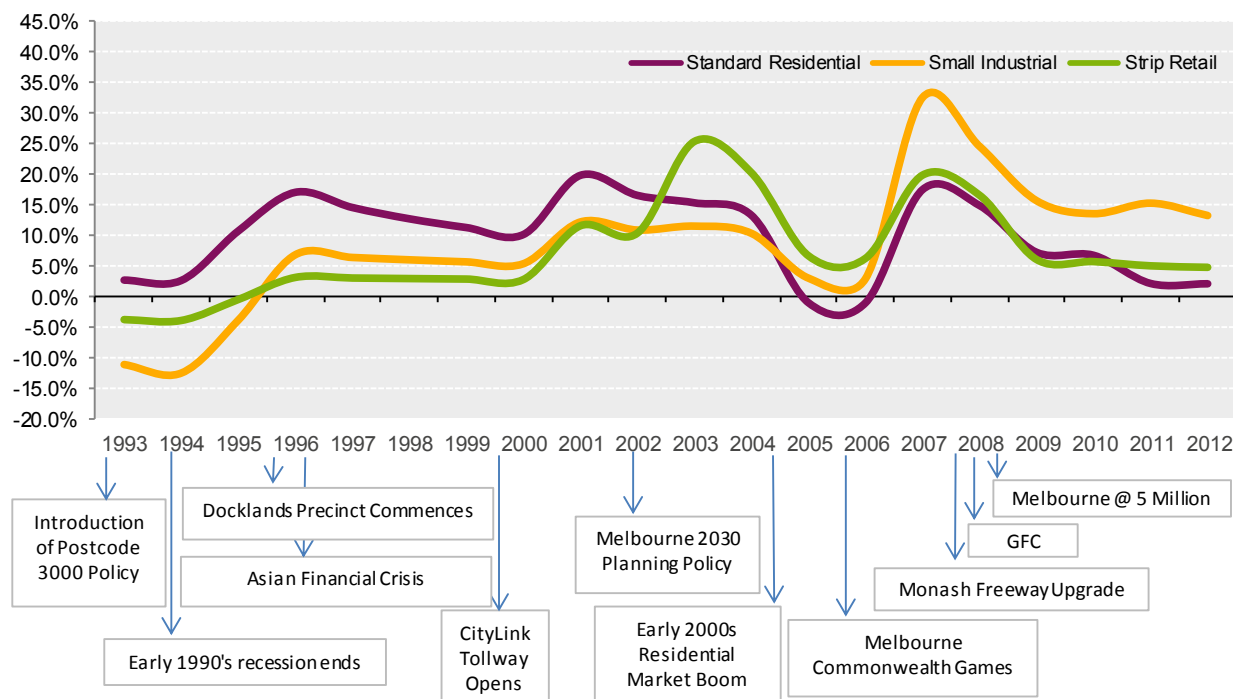
Table 23 summarises our analysis of Melbourne – Rural Residential, recognising a number a number of important market periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the growth rates.

## 4.2.8 ALL GROWTH RATES - MELBOURNE BASIN INNER ZONE

### Melbourne - Inner Zone Rolling Annual Growth Rates

Melbourne Metro Inner Zone 1993-2012

CHART 41



Source: Local Government Authorities (LGA)

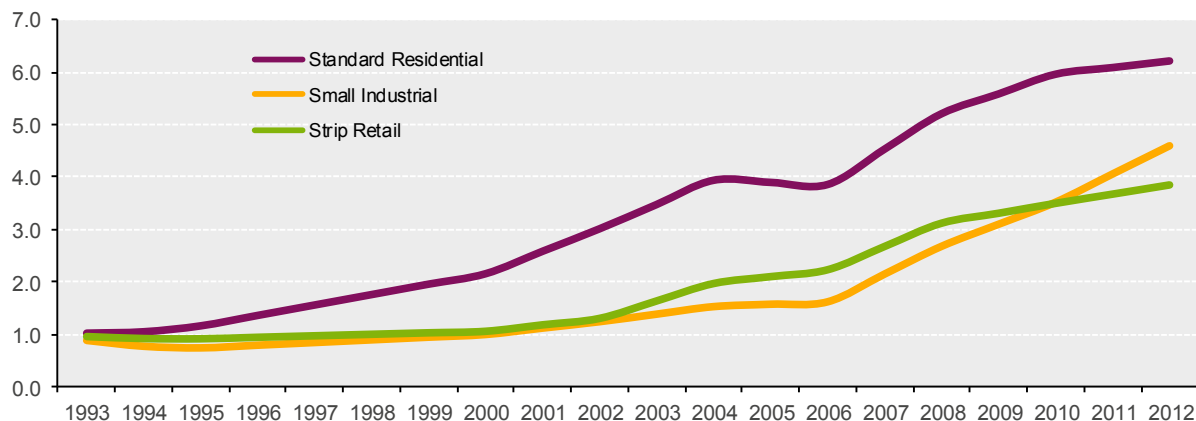
Chart 41 above brings together the Land Use types analysed for the Melbourne – Inner Zone above a timeline of economic and planning events to identify the degree of correlation between each.

In terms of trend lines, a general correlation between the various Land Use types is observed over the 20-year time series, the only exception being Small Industrial which experienced below average growth in the early 1990's and above average growth between 2007- 2012 on the back of developer demand and value growth associated with inner city population growth.

### Melbourne - Inner Zone Land Values

Melbourne Metro Inner Zone 1993-2012

CHART 42



Source: Local Government Authorities (LGA)

As noted above, owing to a period of sustained strong land value growth during the 1990's and early 2000's, Standard Residential has outperformed Small Industrial and Strip Retail over the study period. It should be noted however that Small Industrial started from a notably lower base value.

## Melbourne - Inner Zone

### LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE

TABLE 24

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	10.21%	11.48%	6.61%	9.76%
Small Industrial	0.33%	11.91%	16.46%	8.41%
Strip Retail	0.81%	14.33%	7.62%	7.24%
<b>Overall</b>	<b>3.78%</b>	<b>12.57%</b>	<b>10.23%</b>	<b>8.47%</b>
CPI (Melbourne)	2.42%	2.77%	2.65%	2.60%
Capital Growth PA in Real Terms	1.36%	9.80%	7.58%	5.87%

Source : Urbis

Table 24 summarises our analysis of the Melbourne - Inner Zone, succinctly identifying the relatively performance of each analysed land use class against milestone periods within the overall timeline that appear to have influenced performance.

The outperforming land use class is that of Standard Residential (9.76% pa) following by Small Industrial (8.41% pa) and Strip Retail (7.24% pa) with an average annual growth rate of 8.47% (notional) and 5.87% (real).

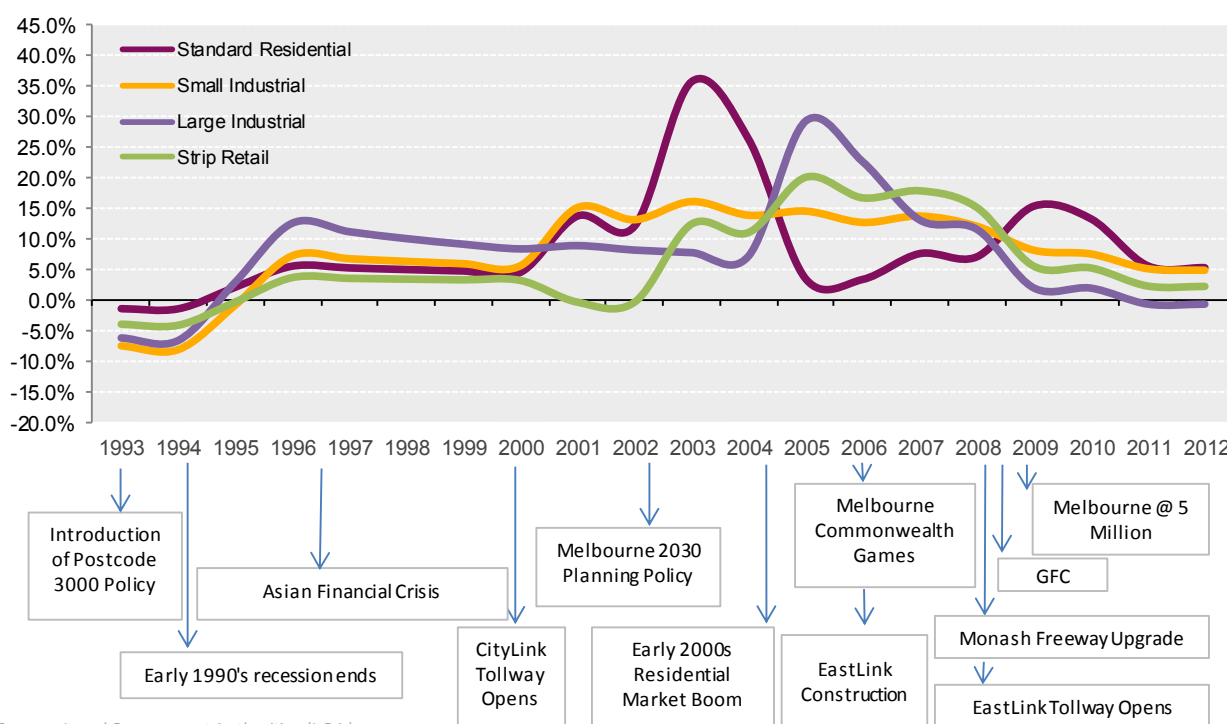
We caution that the consolidated average figures are not “weighted” by value or number.

#### 4.2.9 ALL GROWTH RATES – MELBOURNE BASIN MIDDLE ZONE

### Melbourne - Middle Zone Rolling Annual Growth Rates

Melbourne Metro Middle Zone 1993-2012

CHART 43



Source: Local Government Authorities (LGA)

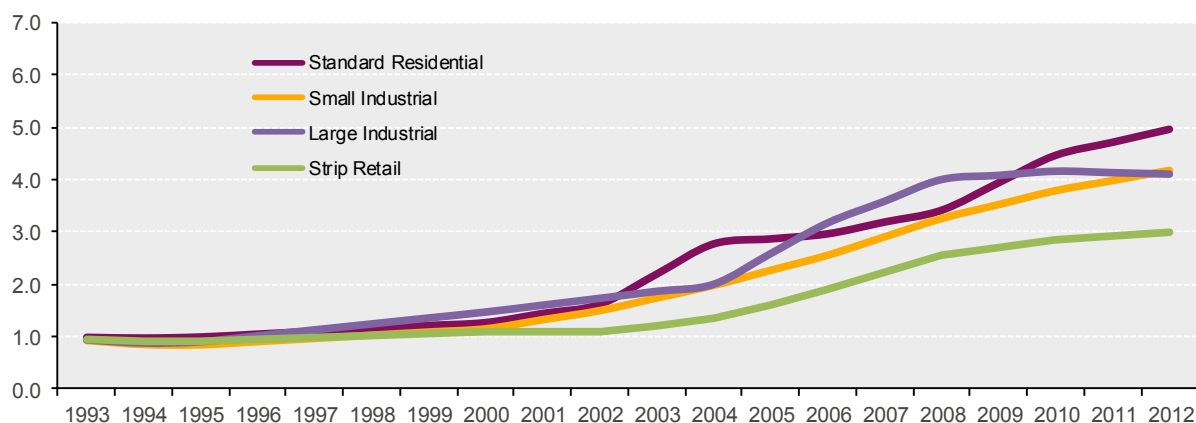
Chart 43 above brings together the Land Use types analysed for the Melbourne – Middle Zone above a timeline of economic and planning events to identify the degree of correlation between each.

In terms of trend lines, a general correlation between the various Land Use types is observed over the 20-year time series, the only exception being Standard Residential which experienced a notable peak and trough (correction) in the early to mid-2000's, during a period where commercial land value growth remained relatively constant.

## Melbourne - Middle Zone Land Values

Melbourne Metro Middle Zone 1993-2012

CHART 44



Source: Local Government Authorities (LGA)

As shown above in Chart 44, the performance of the various Land Use categories is relatively consistent over a 20-year period with Standard Residential marginally outperforming the commercial uses. The exception is Strip Retail which, whilst illustrating relatively consistent growth over the period, lags behind the other asset classes.

## Melbourne - Middle Zone

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE

TABLE 25

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	3.05%	14.62%	9.33%	8.67%
Small Industrial	1.94%	14.19%	7.56%	7.63%
Large Industrial	5.18%	13.87%	2.84%	7.64%
Strip Retail	1.10%	11.07%	6.10%	5.84%
<b>Overall</b>	<b>2.82%</b>	<b>13.44%</b>	<b>6.46%</b>	<b>7.44%</b>
CPI (Melbourne)	2.42%	2.77%	2.65%	2.60%
Capital Growth PA in Real Terms	0.39%	10.66%	3.81%	4.84%

Source: Urbis

Table 25 summarises our analysis of the Middle Zone, succinctly identifying the relatively performance of each analysed Land Use class against milestone periods within the overall timeline that appear to have influenced performance.

The outperforming Land Use class is that of Standard Residential (8.67% pa) following by Large Industrial (7.64% pa), Small Industrial (7.63% pa) and Strip Retail (5.84% pa) with an average annual growth rate of 7.44% (notional) and 4.84% (real).

We caution that the consolidated average figures are not "weighted" by value or number.

#### 4.2.10 ALL GROWTH RATES – MELBOURNE BASIN OUTER ZONE

### Melbourne - Outer Zone Rolling Annual Growth Rates

Melbourne Metro Outer Zone 1993-2012

CHART 45

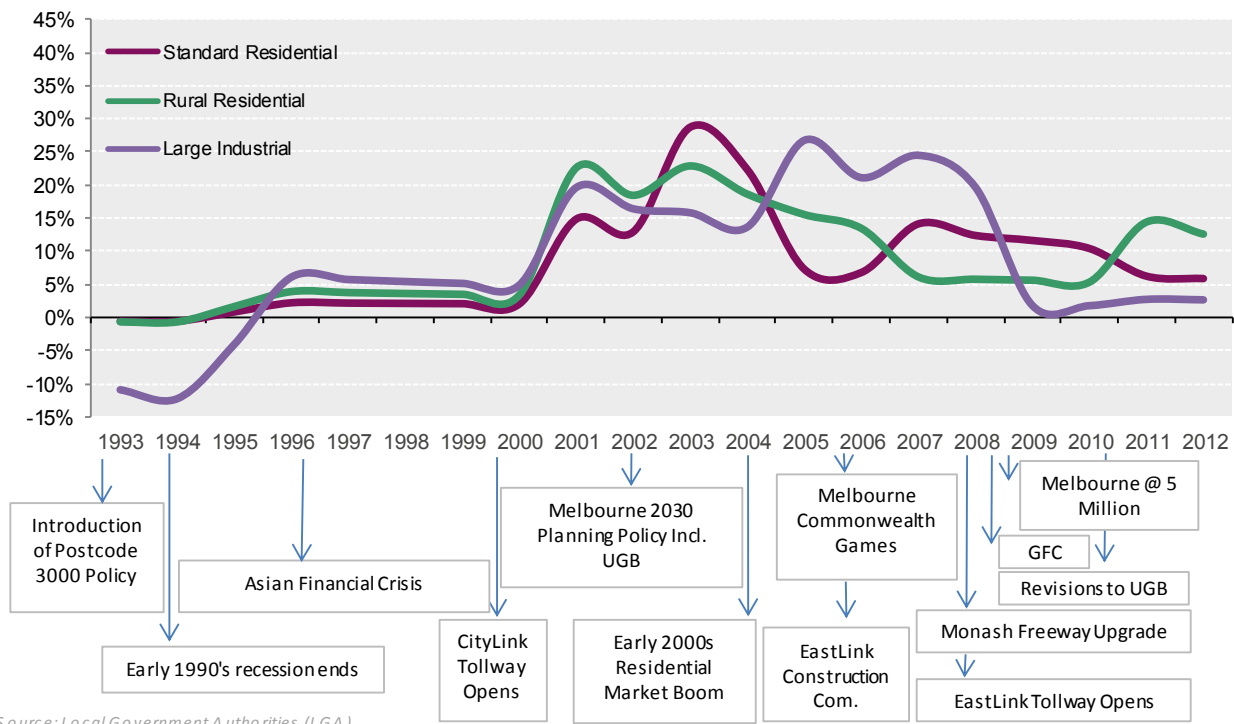


Chart 45 above brings together the Land Use types analysed for the Melbourne – Outer Zone above a timeline of economic and planning events to identify the degree of correlation between each.

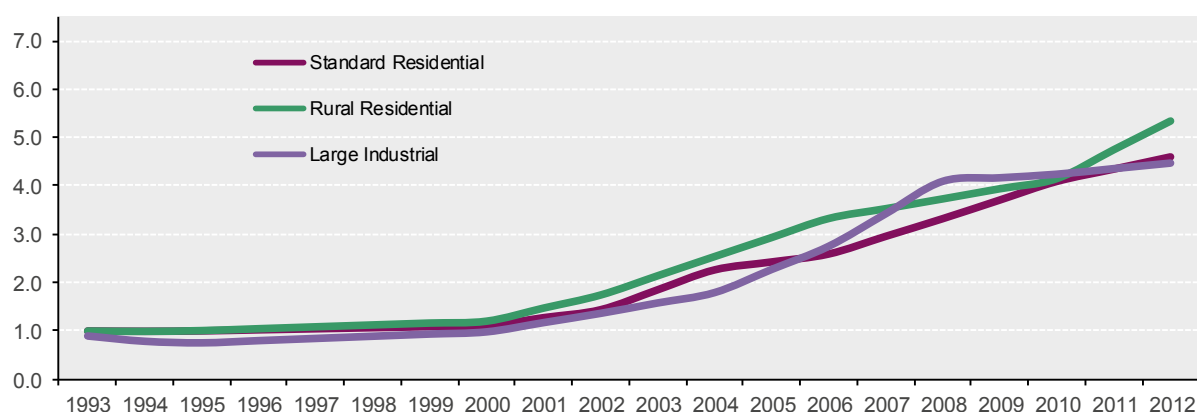
In terms of trend lines, a general correlation between the various Land Use categories is observed over the 20-year period. Whilst starting from a low base and initial period of negative growth, Large Industrial performed strongly between 2001- 2008 before correcting notably post GFC. Standard Residential and Rural Residential have generally performed in line with one another over the study period.

Correlation with Victorian Government planning initiatives appears possible with Large Industrial (as discussed) and Rural Residential (amendments associated with the Urban Growth Boundary and introduction of Growth Centres).

## Melbourne - Outer Zone Land Values

Melbourne Metro Outer Zone 1993-2012

CHART 46



Source: Local Government Authorities (LGA)

The Outer Zone Land Value Growth Indices chart (Chart 46) reveals a relatively consistent performance between each of the analysed Land Use categories.

## Melbourne - Outer Zone

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE

TABLE 26

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	1.27%	15.29%	9.30%	8.18%
Large Industrial	-0.01%	19.69%	5.72%	8.32%
Rural Residential	2.30%	16.80%	8.73%	8.98%
<b>Overall</b>	1.19%	17.26%	7.92%	<b>8.49%</b>
CPI (Melbourne)	2.42%	2.77%	2.65%	2.60%
Capital Growth PA in Real Terms	-1.24%	14.48%	5.27%	5.89%

Source : Urbis

Table 26 summarises our analysis of the Outer Zone, succinctly identifying the relatively performance of each analysed Land Use class against milestone periods within the overall timeline that appear to have influenced performance.

The Land Use categories analysed recorded average annual land value growth within the narrow range of 8.18% and 8.98% over the 20-year study period, averaging annual growth of 8.49% (notional) and 5.89% (real) overall.

Once again all Land Uses in the zone outperformed during the 2001- 2007 period.

We caution that the consolidated figures are not “weighted” by value or number.



# BRISBANE BASIN ANALYSIS

## 5.1 STUDY AREAS (ZONES)

The Brisbane metropolitan area is considered smaller than the equivalent Sydney and Melbourne areas, and is constrained by the coastline in the east and the Blackall Range in the west, with population centres spread north and south along the coast and along the Brisbane River travelling east and west.

For our Brisbane Basin analysis we have adopted concentric zones of 0 to 7.5 kilometres, 7.5 to 20 kilometres, and over 20 kilometres radiating from the Brisbane CBD as being our inner, middle and outer zones.

Within each zone we have analysed a basket of properties as land value proxies for Land Uses such as Standard Residential, Small Industrial, Large Industrial, Strip Retail and Rural Residential.

## 5.2 VALUE DRIVERS

### 5.2.1 LAND SUPPLY AND DEMAND

In the timeline context, capital growth of land within the Brisbane Basin over the past 20-years appears to have been influenced by the following:

- A long and slow growth period between 1993- 2000 as the market recovered from the early 1990's recession;
- A high growth period between 2001- 2007 which was attributable to strong domestic and global economic fundamentals being experienced during that period; and
- A correction and slower economic period between 2008- 2012 being the period during and after the GFC.

### 5.2.2 BRISBANE AND QUEENSLAND ECONOMIC CIRCUMSTANCES 1993-2012

With reference to the *Queensland Government Annual Economic Reports* between 1993 and 2012 we provide the following commentary on the economic fundamentals of the Queensland economy during the study period.

The period between 1993- 1997 saw the Queensland economy outpace the rest of Australia with the exception of the 1995- 1996 financial year due to drought conditions which severely impacted the agricultural sector. In the years 1993- 1995 the Queensland economy grew at approximately 6% per annum before falling to 1.9% in 1995- 1996. With an easing in drought conditions, the Queensland economy rebounded in the 1996- 1997 financial year and GSP grew 4.9% as compared to the rest of Australia at 2.6%. This trend continued in 1997- 1998 and 1998- 1999 with GSP growth of 5.7% and 4.7% respectively.

Growth over this period was underpinned by the State's rapid population growth of around 2.4% per annum, which was mainly due to the large net inflows of interstate migrants from NSW and Victoria. This rapid population growth supported strong household consumption and business investment which significantly contributed to the expansion of the Queensland economy over this period. The Asian financial crisis in July 1997 had limited impact on the rate of growth for Queensland although net exports significantly fell away in 1998- 1999 as the true impact of this crisis filtered through to the State economy with exports of goods and services growing at a modest 1.9%.

The 2000- 2001 financial year saw a structural change in the Australian taxation system with the introduction of the Goods and Services Tax. As with the rest of Australia, the Queensland economy felt the impact of this new tax with slower economic growth with GSP falling to 3.2%. The uncertainty surrounding this new tax resulted in lower spending on private investment in dwellings and business which declined by 13.5% and 15% respectively.

The 2001- 2002 financial year saw the Queensland economy return to strong GSP growth at 5% with a rebound in private investment in both dwellings and business investment. The State economy continued to perform strongly between 2002- 2007 with GSP remaining above 4% per annum. The main driver of

the economy during this period was strong population growth, particularly net interstate migration between 2001- 2005 and net overseas migration between 2006- 2007. Both interstate and overseas migrants were attracted to Queensland due to greater employment opportunities with the State enjoying employment growth of 2.5% per annum (with a peak in 2004- 2005 at 5.6% being twice the national average).

As a consequence of this strong population and employment growth, the domestic sector of the Queensland economy experienced strong household consumption and private investment in dwelling and business which supported the economy between 2001- 2005.

As a result of a strengthening global economy and demand from Asia for Queensland mineral exports from 2005 onwards, the level of business investment substantial added to State growth which peaked in the 2006- 2007 financial year at 6.8%. Business investment surged by 19.1% during the year which was also supported by public investment in vital water, energy, rail and port infrastructure which rose by 23.4%. While business and public investment rose, as a consequence of higher interest rates and a moderation in the housing cycle in 2005- 2006, household consumption fell to 3.4% of GSP in 2006- 2007 from its peak of 9.9% in 2003- 2004.

While household consumption fell in 2006- 2007 investment in dwellings continued its upward trend driven by strong income growth and good labour market conditions. After a small correction in house prices during the 2005- 2006 year, prices continued their upward trend over 2006- 2007 with house prices finally peaking in the December quarter of 2010.

The GFC in 2008- 2009 saw a brake applied to the Queensland economy with GSP falling below the national average for the first time since 1990- 1991 at only 1.1%. Household consumption fell dramatically due to falling equity prices and while the economy was supported by lower interest rates and government payments, households chose to either save or repay debt. Dwelling investment also declined by 6.9% although this was offset by business investment which rose by 10.1% - being the fifth consecutive year of double-digit growth. Business investment was being supported by a large amount of project work already under construction including both public and private infrastructure project such as that required to support the Coal Seam Gas industry. Public sector investment also supported the Queensland economy contributing 1.1% to overall growth and helping to offset the fall in the household sector.

The 2009- 2010 saw the State economy recover for modest growth of 2.3% with the trade sector being the primary driver of growth with demand from Asia bolstering Queensland's commodity exports. Public sector stimulus also supported the economy over the year as household consumption and investment remained weak on the back of six interest rate rises over the year. Business confidence also fell during the year with spending on machinery and equipment declining by 18.1% and a sharp fall in non-residential construction with new projects being delayed.

In January 2011 widespread flooding and Cyclone Yasi had a significant impact on the State economy with GSP only growing at 0.2%, the third consecutive year of below average growth since the GFC. These natural disasters impacted agricultural production and commodity exports, particularly the export of coal which led to exports falling by 7.8%. The recovery of these sectors was not assisted by the 12.1% appreciation of the A\$ against the US\$ over the year, which impacted other export sectors such as manufacturing and tourism.

As the reconstruction activity gained momentum after these natural disasters, business investment rebounded strongly by 19% as non-dwelling construction reached a record annual amount of \$20.9 billion in real terms as major resource projects continued their expansion and machinery and equipment lost during the natural disasters was replaced.

Household consumption marginally rose by 2.4% throughout the year but remained constrained compared to the historical average of 4.4%. Household consumption growth was primary driven by the replacement of damaged household items lost during the floods and Cyclone Yasi. Dwelling investment also fell as demand for new housing declined by 17.9% and renovation activity also declined by 6.8%.

Slower population growth, higher mortgage rates and tighter credit conditions finally saw the end to increasing house prices with the market peaking in the December quarter 2010, as mentioned.

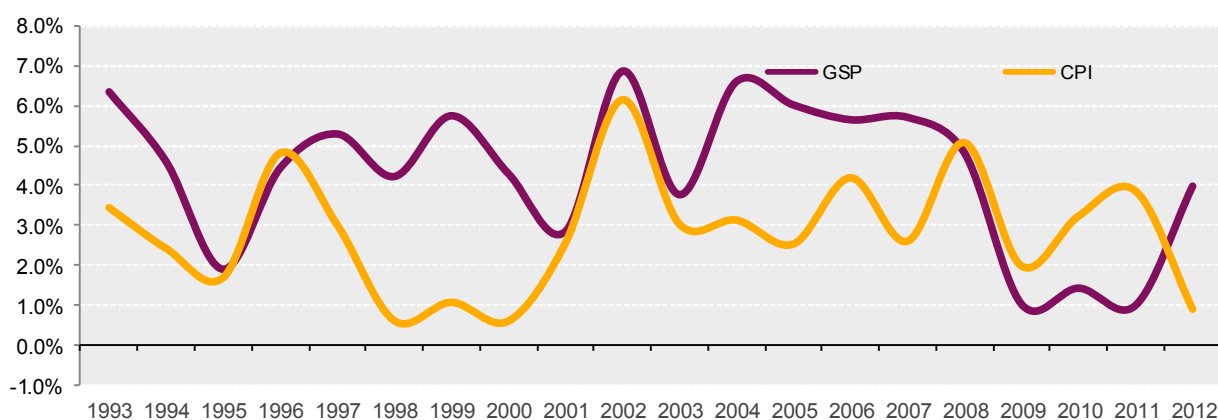
In the 2011- 2012 year, Queensland economy rebounded strongly with GSP estimated to have grown by 4.8%, primarily from the continued expansion of coal production and the State's gas projects (although the weakening demand from China for coal exports over the first half of 2012- 2013 is seen as possible downside risk to the QLD economy). While the coal industry is facing weaker market conditions, the Queensland economy should be partly shielded from these downside risks by the pipeline of gas projects which are based on longer term contracts from Japan.

The 2011- 2012 financial year also saw a change in government. An immediate effect of this change in government was a reduction in the public service through job cuts as the new government focused on repairing the state budget. The full impact of these changes didn't occur until the September and December quarters 2012.

## Brisbane - Economic Fundamentals Annual Growth Percentages

BRISBANE CPI AND QLD GSP

CHART 47



Source : ABS and Urbis

Chart 47 above identifies, in terms of GSP, the:

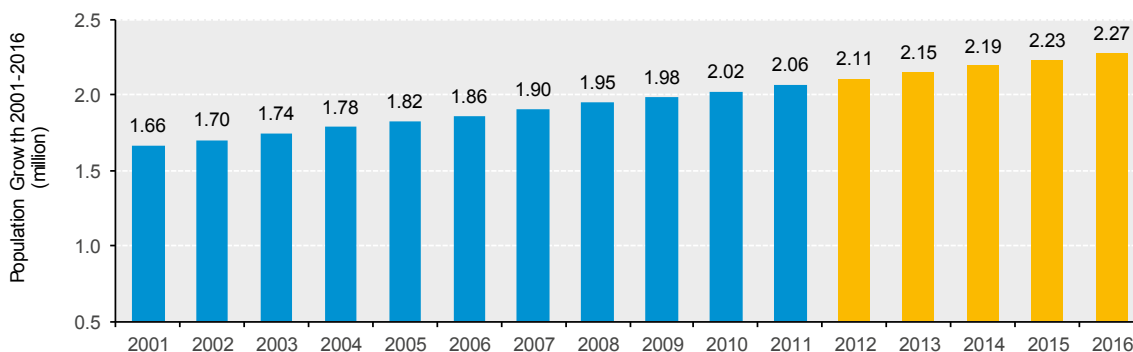
- Strong economic growth for Queensland throughout the mid to late 1990's which supported land value growth across all regions, with a minor correction in 1994- 1995 due to drought. Increases in land value were supported by strong population growth of 2.4% throughout this period;
- A small correction in values occurred in 2000- 2001 perhaps as a consequence of the introduction of the GST;
- Queensland economic performance through the early to mid 2000's generally tracked above trend with the exception of the 2003- 2004 financial year. Subdued global growth in 2003 together with a higher A\$ and lower levels of rural production constrained economic growth for this year. The follow on effect of these conditions saw a slight correction in land values over the course of 2005- 2006; and
- The GFC correction in 2008 and the impact of natural disasters impacting growth in 2011 with a recovery in 2012.

Below we note Brisbane's relatively high level of population growth rate each year (2.0% per annum over 11 years) compared to Sydney and Melbourne, with forward estimates, as sourced from the Australian Bureau of Statistics (ABS):

## Brisbane Population Growth and Projections

Historic Growth (blue) and Forecast Growth (yellow)

CHART 48



Source : ABS Population Statistics 2011

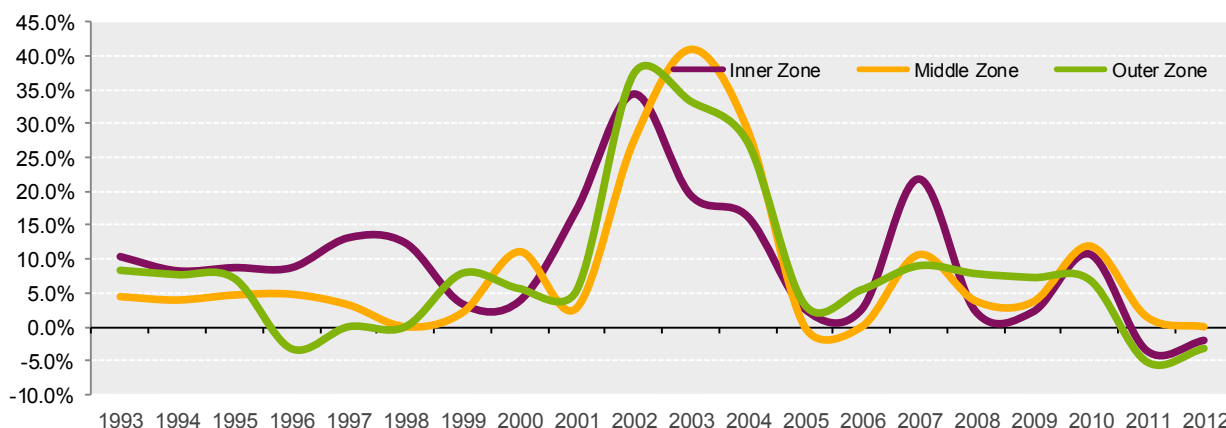
### 5.2.3 GROWTH RATES – STANDARD RESIDENTIAL

Our Brisbane Basin analysis commences with an examination of the assessed annual growth rates for each Land Use type adopted within this report. The following chart is for Standard Residential.

## Brisbane - Standard Residential Rolling Annual Growth Rate

Brisbane Metro Inner, Middle and Outer Zones 1993-2012

CHART 49



Source : QLD Valuer General and Urbis

As can be seen in the above chart, the annual value growth rate of Standard Residential within the Inner, Middle and Outer Zones generally follow the same trend lines and market cycles.

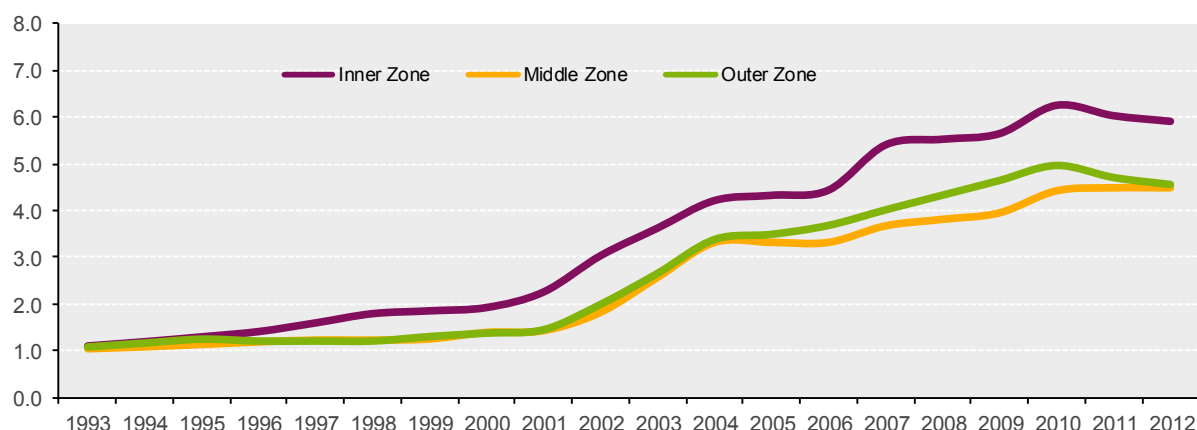
Inner Zone has generally displayed higher annual growth rates throughout the study period and has generally led the market. The Inner Zone appears to be less impacted by the cycles in the market with only negative growth occurring after the December 2010 correction.

The Middle and Outer Zones have greater correlation in growth patterns, with these areas having a greater comparability in price level.

## Brisbane - Standard Residential Land Value Index

Brisbane Metro Inner, Middle and Outer Zones 1993-2012

CHART 50



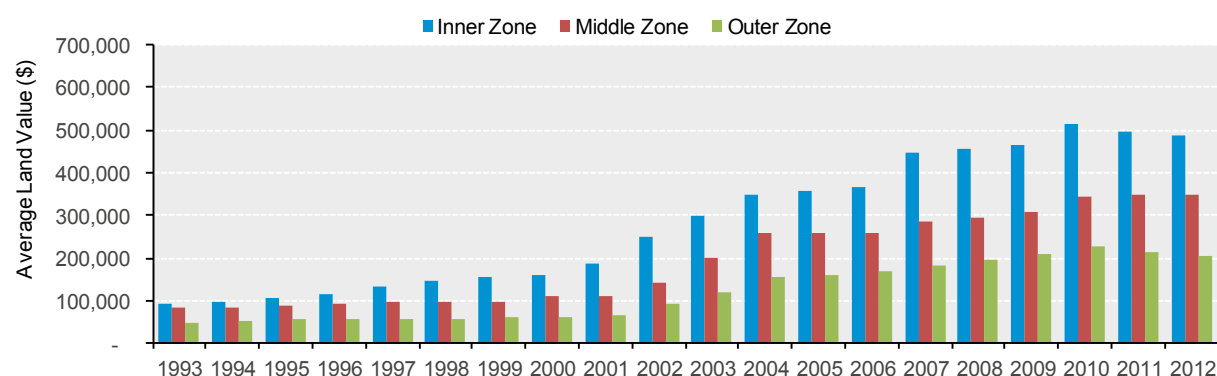
Source : QLD Valuer General and Urbis

The associated Brisbane-Standard Residential indices chart is above (Chart 50) where the out-performance of the Inner Zone can be seen compared to that of the Middle and Outer Zones, noting that the Outer Zone has for the most part performed in line with the Middle Zone.

## Brisbane - Standard Residential Rolling Annual Average Value

Brisbane Metro Inner, Middle and Outer Zones 1993-2012

CHART 51



Source : QLD Valuer General and Urbis

And for context, we note the above average statutory Standard Residential land values for each of the Inner, Middle and Outer Zones – cautioning that these are the averages within our basket of properties, and therefore a more exhaustive study may yield a different set of value conclusions.

## Brisbane - Standard Residential

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 27

	1993-2000	2001-2007	2008-2012	1993-2012
Inner Zone < 7.5km	8.59%	16.34%	1.92%	9.64%
Middle Zone 7.5km to 20km	4.29%	15.83%	4.16%	8.30%
Outer Zone > 20km	4.18%	17.28%	2.73%	8.40%
<b>Overall</b>	<b>5.69%</b>	<b>16.48%</b>	<b>2.94%</b>	<b>8.78%</b>
CPI (Brisbane)	2.21%	3.45%	3.01%	2.84%
Capital Growth PA in Real Terms	3.48%	13.03%	-0.07%	5.93%

Source : Urbis

The above Table 27 summarises our analysis of Brisbane - Standard Residential recognising a number of important market and economic periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the Standard Residential growth rates within each Zone.

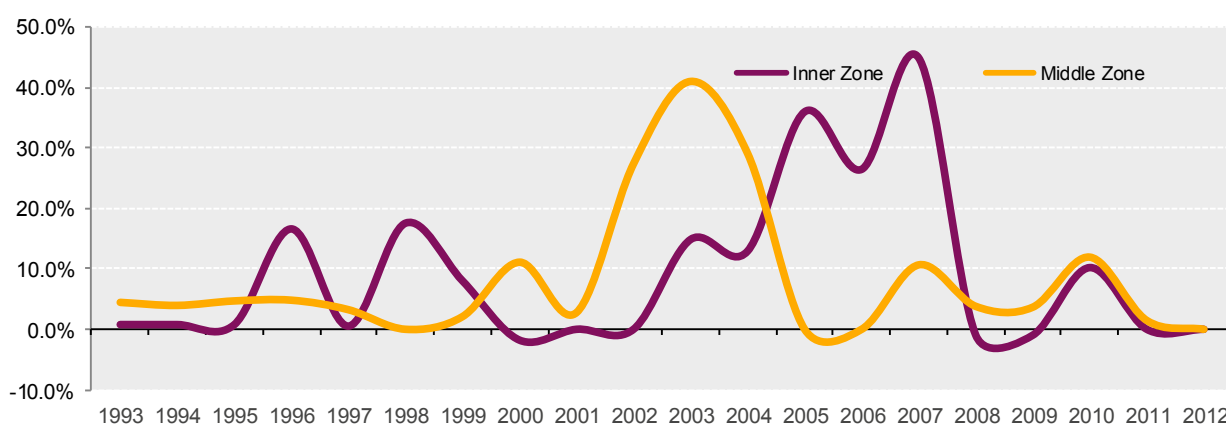
Similar to the other two Capital Cities analysed, Standard Residential outperformed in all Zones during the 2001- 2007 period.

### 5.2.4 GROWTH RATES – SMALL INDUSTRIAL

## Brisbane - Small Industrial Rolling Annual Growth Rate

Brisbane Metro Inner and Middle Zones 1993-2012

CHART 52



Source : QLD Valuer General and Urbis

Chart 52 above plots the annual land value growth rates for Small Industrial for Brisbane - but we have only considered the Inner and Middle Zones where this property class is best represented.

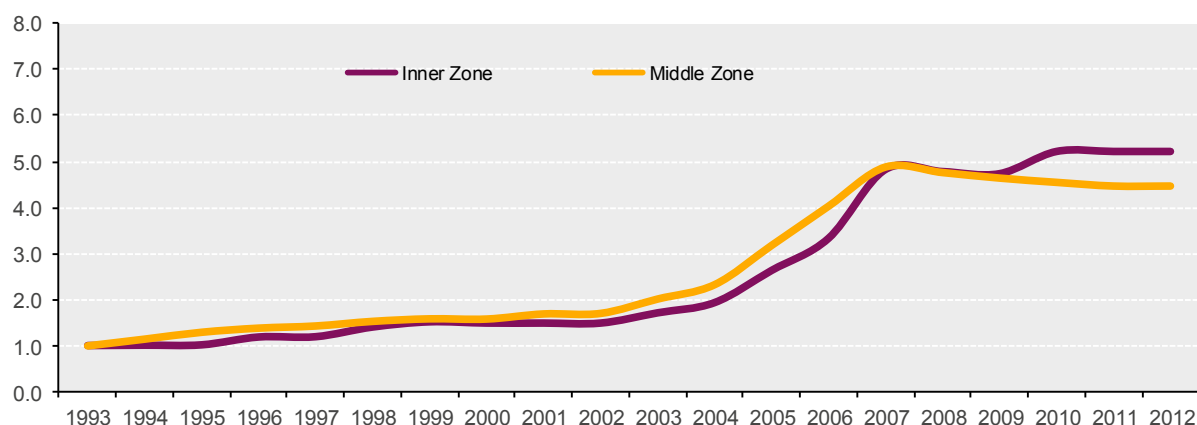
Small Industrial displayed its highest level of growth during the 2001- 2007 period, but with different peaks in the market being 2003 (Middle Zone) and 2007 (Inner Zone).

The Inner Zone has displayed greater fluctuation with growth spikes during the mid-ninety's and in 2005, whereas annual growth for the Middle Zone was relatively sedate at these points. The Inner Zone maintains higher land values over the 20-year timeline with a greater level of demand generated from scarcity of supply, and the influence from other Land Uses such as the effect of urban revitalisation converting industrial land to commercial or residential uses.

## Brisbane - Small Industrial Land Value Index

Brisbane Metro Inner and Middle Zones 1993-2012

CHART 53



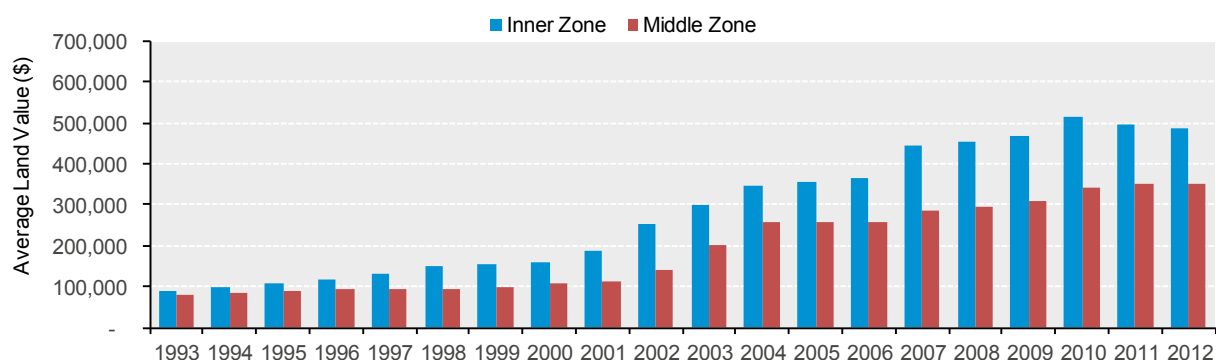
Source : QLD Valuer General and Urbis

The associated Brisbane-Small Industrial indices chart is above (Chart 53), where Inner and Middle Zones trend similarly, with the Middle Zone trending slightly higher during the mid-2000's and the Inner Zone performing better during the post GFC period (presumably from developer demand for mixed use sites and growth of inner city population).

## Brisbane - Small Industrial Rolling Annual Average Value

Brisbane Metro Inner and Middle Zones 1993-2012

CHART 54



Source : QLD Valuer General and Urbis

And for context, we note the above average statutory Small Industrial land values for each of the Inner and Mid Zones – cautioning that these are the averages from our basket of properties, and therefore a more exhaustive study may yield a different set of value conclusions.

## Brisbane - Small Industrial

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 28

	1993-2000	2001-2007	2008-2012	1993-2012
Middle Zone 7.5km to 20km	5.40%	19.29%	1.65%	9.32%
Outer Zone > 20km	6.03%	17.98%	-1.75%	8.27%
<b>Overall</b>	<b>5.71%</b>	<b>18.63%</b>	<b>-0.05%</b>	<b>8.80%</b>
CPI (Brisbane)	2.21%	3.45%	3.01%	2.84%
Capital Growth PA in Real Terms	3.51%	15.18%	-3.06%	5.95%

Source : Urbis

The above table summarises our analysis of Brisbane – Small Industrial recognising a number of important market periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the Small Industrial growth rates within each zone.

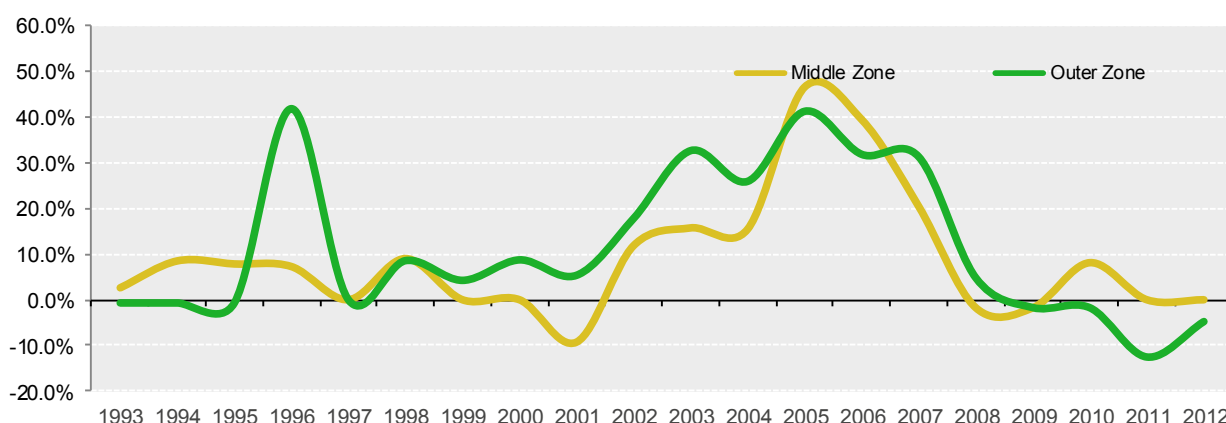
Once again there has been some strong annual growth during the 2001- 2007 period, before some major corrections post GFC.

### 5.2.5 GROWTH RATES – LARGE INDUSTRIAL

## Brisbane - Large Industrial Rolling Annual Growth Rate

Brisbane Metro Middle and Outer Zones 1993-2012

CHART 55



Source : QLD Valuer General and Urbis

Chart 55 above plots the annual land value growth rates for Large Industrial for Brisbane – but we have only considered the Middle and Outer Zones where this property class is best represented.

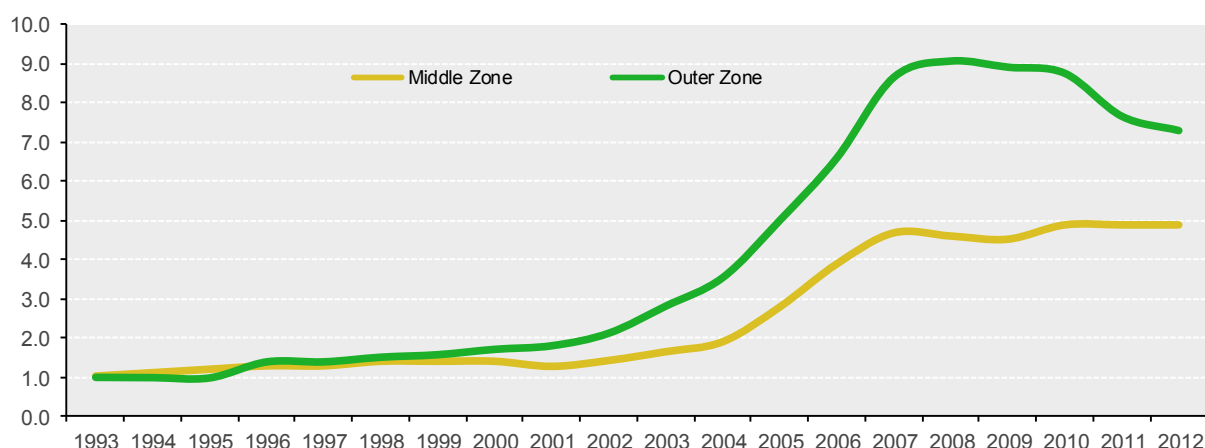
Large Industrial has generally trended similarly between the Middle and Outer Zones, with exceptions comprising higher growth spikes or earlier growth. The 2001- 2007 period was highly volatile with the 2003 and 2006 periods yielding especially high growth on the back of a substantial increase in industrial demand and a relative shortage of suitably zoned and serviced land.

The Middle Zone appears to have weathered the post GFC periods more favourably given its supporting industrial fundamentals such as favourable key infrastructure access and steady demand from developers and investors for A-Grade built product.

## Brisbane - Large Industrial Land Value Index

Brisbane Metro Middle and Outer Zones 1993-2012

CHART 56



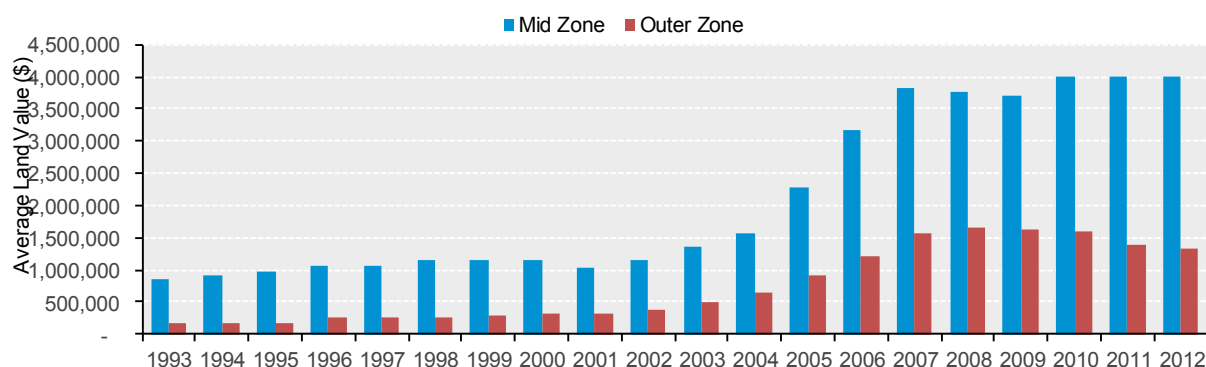
Source : QLD Valuer General and Urbis

The associated Brisbane – Large Industrial indices chart above clearly indicates the out-performance of the Outer Zone from 2001- 2007 in comparison to the Middle Zone, before the latter performs better post GFC.

## Brisbane - Large Industrial Rolling Annual Average Value

Brisbane Inner and Outer Zones 1993-2012

CHART 57



Source : QLD Valuer General and Urbis

And for context, we note the above average statutory Large Industrial land values for each of the Middle and Outer Zones – cautioning that these are the averages within our basket of properties, and therefore a more exhaustive study may yield a different set of value conclusions.

Industrial land values in the Outer Zone commence from a lower base in comparison to the Middle Zone, substantially contributing to its out-performing annual growth rate. The Middle Zone maintains a solid post GFC recovery.

## Brisbane - Large Industrial

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 29

	1993-2000	2001-2007	2008-2012	1993-2012
Middle Zone 7.5km to 20km	4.40%	20.01%	0.92%	8.99%
Outer Zone > 20km	7.65%	26.56%	-3.19%	11.56%
<b>Overall</b>	<b>6.03%</b>	<b>23.28%</b>	<b>-1.14%</b>	<b>10.28%</b>
CPI (Brisbane)	2.21%	3.45%	3.01%	2.84%
Capital Growth PA in Real Terms	3.82%	19.83%	-4.14%	7.43%

Source : Urbis

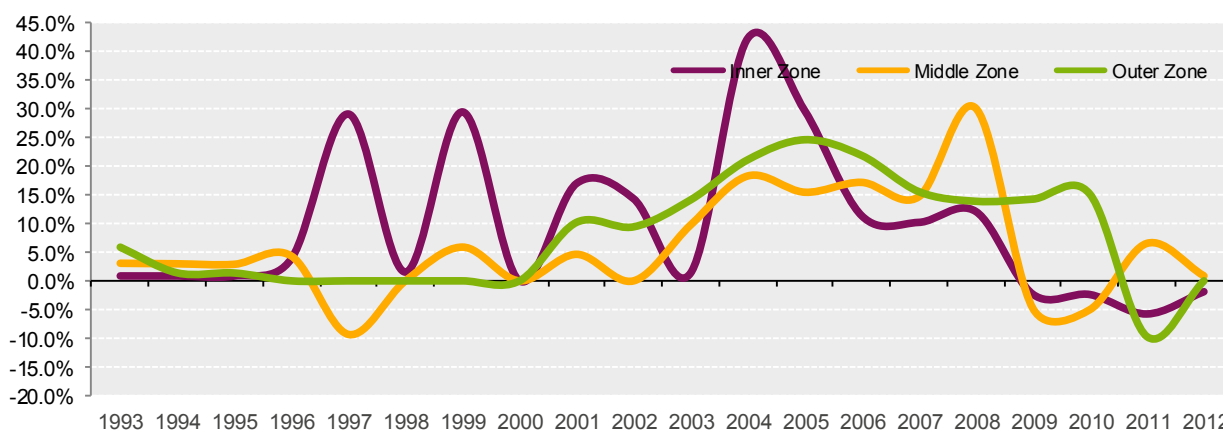
The above table summarises our analysis of Brisbane – Large Industrial recognising a number of important market periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the Large Industrial growth rates within each Zone. We note the overall long-term out-performance of industrial land in the Outer Zone which is not dissimilar to that experienced by Sydney and Melbourne.

### 5.2.6 GROWTH RATES – STRIP RETAIL

## Brisbane - Strip Retail Rolling Annual Growth Rate

Brisbane Metro Inner, Middle and Outer Zones 1993-2012

CHART 58



Source : QLD Valuer General and Urbis

Chart 58 above plots the annual land value growth rates for Brisbane- Strip Retail.

Strip Retail as an asset class over the past 20-years has been detrimentally impacted by the growth and dominance of sub-regional and regional shopping centres.

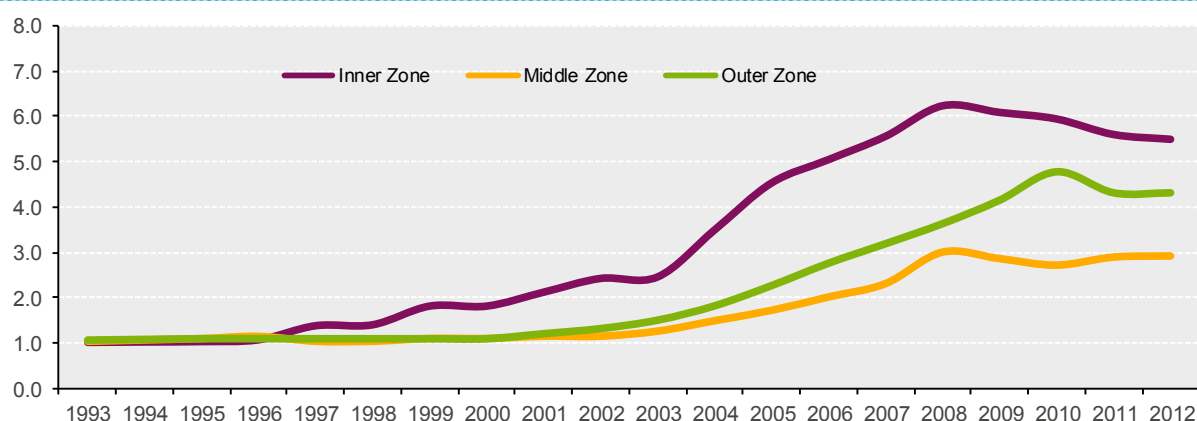
The Inner Zone has displayed the highest levels of growth of the past 20-years, but also the greatest fluctuations in growth. Urban renewal projects located within the inner city area of Brisbane also appears to have influenced growth in Strip Retail as delivery of these projects can provide a short term spike in additional supply resulting in lower growth.

The Outer and Middle Zones are greatly influenced by population growth and movement. The supply of retail space is also closely monitored and controlled by zoning regulations and this is reflective of its steady growth pattern over time.

## Brisbane - Strip Retail Land Value Index

Brisbane Metro Inner, Middle and Outer Zones 1993-2012

CHART 59



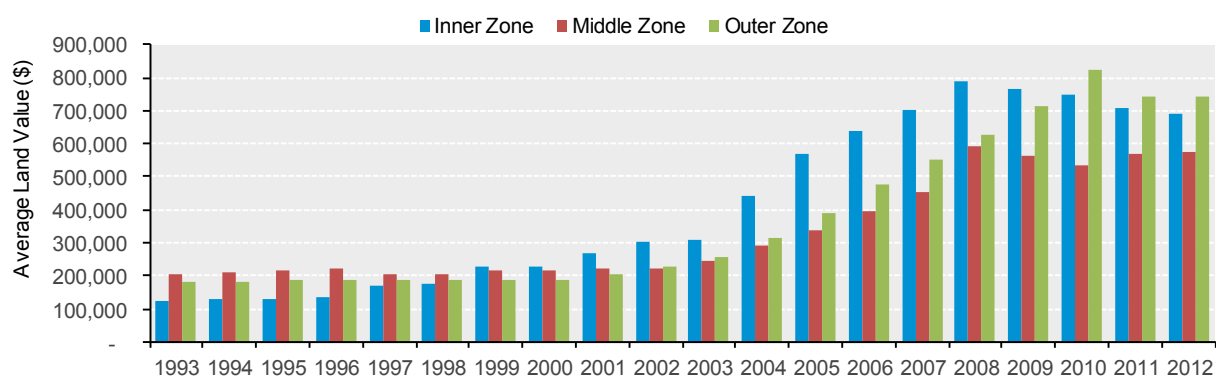
Source : QLD Valuer General and Urbis

The associated Brisbane- Strip Retail indices chart is above (Chart 59), where the Inner Zone has outperformed the Outer and Middle Zones, noting that the Outer Zone has trended higher than Middle Zone.

## Brisbane - Strip Retail Rolling Annual Average Value

Sydney Metro Inner, Middle and Outer Zones 1993-2012

CHART 60



Source : QLD Valuer General and Urbis

And for context, we note the above average statutory Strip Retail land values for each of the Inner, Middle and Outer Zones – cautioning that these are the averages within our basket of properties, and therefore a more exhaustive study may yield a different set of value conclusions.

## Brisbane - Strip Retail

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 30

	1993-2000	2001-2007	2008-2012	1993-2012
Inner Zone < 7.5km	8.32%	18.05%	-0.05%	9.63%
Middle Zone 7.5km to 20km	1.23%	11.43%	5.55%	5.88%
Outer Zone > 20km	1.08%	16.72%	6.72%	7.96%
<b>Overall</b>	<b>3.54%</b>	<b>15.40%</b>	<b>4.07%</b>	<b>7.82%</b>
CPI (Brisbane)	2.21%	3.45%	3.01%	2.84%
Capital Growth PA in Real Terms	1.34%	11.94%	1.06%	4.98%

Source : Urbis

The above table summarises our analysis of Brisbane – Strip Retail recognising a number of important market periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the Strip Retail growth rates within each Zone.

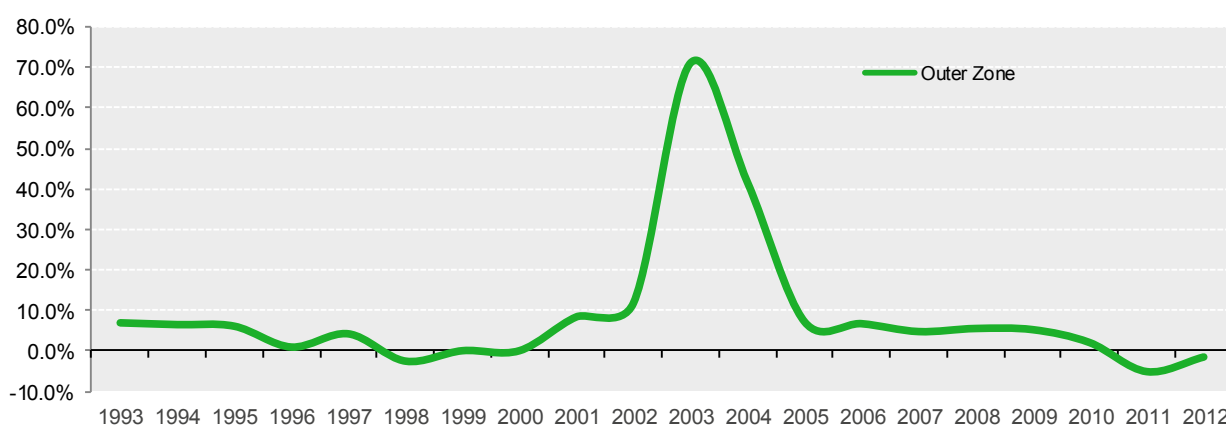
Brisbane's Outer Zone Strip- Retail has performed relatively strongly (compared to Sydney) and we assume this is attributable to the influence of high population growth in these areas as well as centre improvement programs initiated by Brisbane City Council in recent years.

### 5.2.7 GROWTH RATES – RURAL RESIDENTIAL

## Brisbane - Rural Residential Rolling Annual Growth Rate

Brisbane Metro Middle and Outer Zones 1993-2012

CHART 61



Source : QLD Valuer General and Urbis

Chart 61 above plots the annual land value growth rates for Brisbane – Rural Residential applicable only to the Outer Zone.

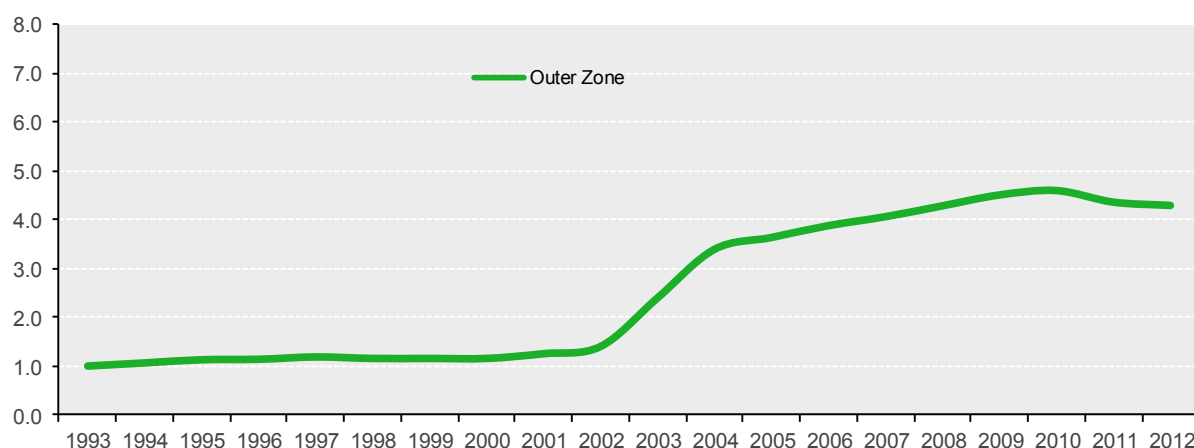
The Rural Residential category indicates relatively constant annual growth throughout the study period with the exception of the period between 2003-2004.

Notably, this period of significant growth occurred during the advertising and consultation period for the introduction of the South East Regional Plan 2005-2026 which provides controls for the urban footprint boundaries and dedicated future growth areas. This period resulted in a significant amount of speculative purchasing forcing land values to rise, before returning to trend.

## Brisbane - Rural Residential Land Value Index

Brisbane Metro Outer Zone 1993-2012

CHART 62



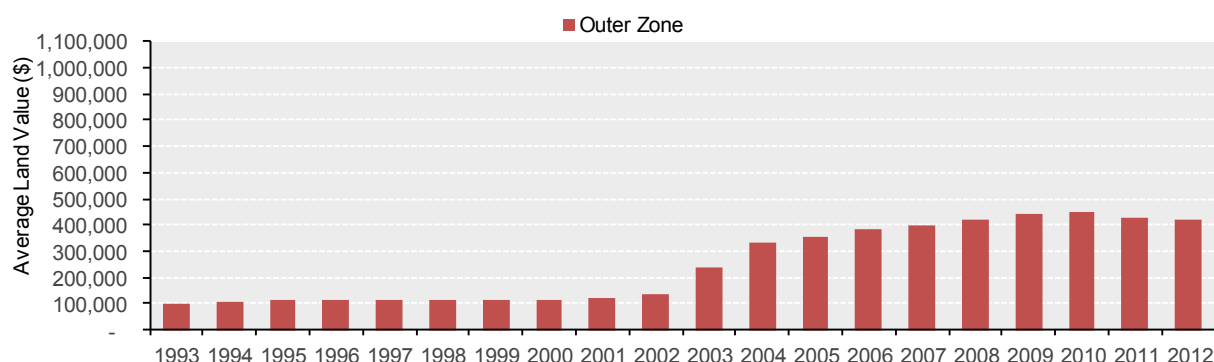
Source : QLD Valuer General and Urbis

The associated Brisbane – Rural Residential indices chart is above (Chart 62) and this illustrates our previous comments.

## Brisbane - Rural Residential Rolling Annual Average Value

Brisbane Inner and Outer Zones 1993-2012

CHART 63



Source : QLD Valuer General and Urbis

And for context, we note the above average statutory Rural Residential land values for Brisbane's Outer Zone – cautioning that these are the averages within our basket of properties, and therefore a more exhaustive study may yield a different set of value conclusions.

## Brisbane - Rural Residential

LONG TERM CAPITAL GROWTH RATE BY ZONE

TABLE 31

	1993-2000	2001-2007	2008-2012	1993-2012
Outer Zone > 30km	2.73%	21.61%	1.19%	8.96%
<b>Overall</b>	2.73%	21.61%	1.19%	<b>8.96%</b>
CPI (Brisbane)	2.21%	3.45%	3.01%	2.84%
Capital Growth PA in Real Terms	0.53%	18.16%	-1.81%	6.11%

Source : Urbis

The above table summarises our analysis of Brisbane – Rural Residential recognising a number of important market periods during the 20-year time series where economic influences, planning initiatives and infrastructure construction has shaped the growth rates.

## 5.2.8 ALL GROWTH RATES – BRISBANE BASIN INNER ZONE

### Brisbane - Inner Zone Rolling Annual Growth Rates

Brisbane Metro Inner Zone 1993-2012

CHART 64

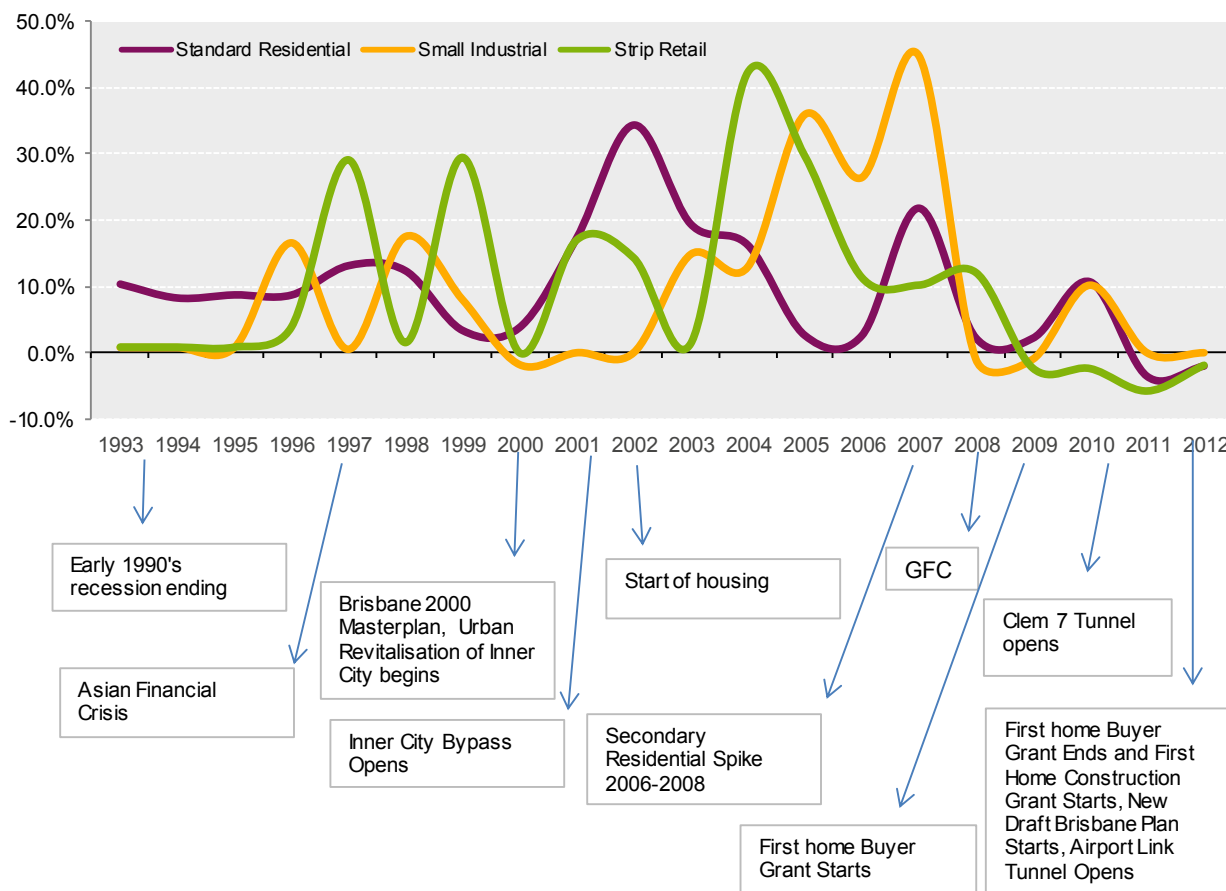


Chart 64 above brings together the Land Use types analysed for the Brisbane – Inner Zone above a timeline of economic and planning events to see what correlations may occur.

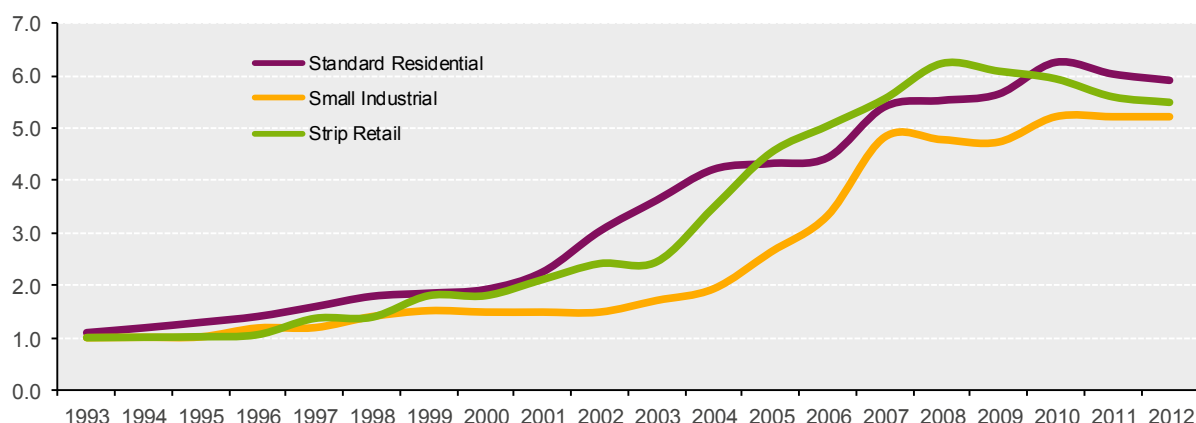
In general terms there is some consistency within the trend lines over the 20-year time series, notwithstanding the high levels of volatility.

Of the three property types Strip Retail has generally displayed the highest level of fluctuation in average annual growth rates over the time period – but all three Land Use types have experienced significant volatility over 30% per annum at certain points (it appears that Brisbane's Inner Zone is more cyclical than that of the corresponding areas within Sydney and Melbourne)..

## Brisbane - Inner Zone Land Values Growth Indices

Brisbane Metro Inner Zone 1993-2012

CHART 65



Source : QLD Valuer General and Urbis

As shown in the above Inner Zone Indices chart (Chart 65), Standard Residential within the Inner Zone has generally outperformed the Small Industrial and Strip Retail although there is greater correlation between Standard Residential and Strip Retail (perhaps through mixed use redevelopment activities).

## Brisbane - Inner Zone

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE

TABLE 32

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	8.59%	16.34%	1.92%	9.64%
Light Industrial	5.40%	19.29%	1.65%	9.32%
Strip Retail	8.32%	18.05%	-0.05%	9.63%
<b>Overall</b>	<b>7.44%</b>	<b>17.89%</b>	<b>1.17%</b>	<b>9.53%</b>
CPI (Brisbane)	2.21%	3.45%	3.01%	2.84%
Capital Growth PA in Real Terms	5.23%	14.44%	-1.84%	6.69%

Source : Urbis

Table 32 summaries our analysis of Brisbane's Inner Zone, succinctly identifying the relative performance of each analysed Land Use class against milestone periods within the overall timeline that appears to have influenced the market.

Overall there is consistency in the average annual growth rates between the three Land Use classes - with the overall 20-year growth figure being 9.53% (notional) and 6.69% (real).

We caution that the consolidated average figures are not "weighted" by value or number.

## 5.2.9 ALL GROWTH RATES – BRISBANE BASIN MIDDLE ZONE

### Brisbane - Middle Zone Rolling Annual Growth Rates

Brisbane Metro Middle Zone 1993-2012

CHART 66

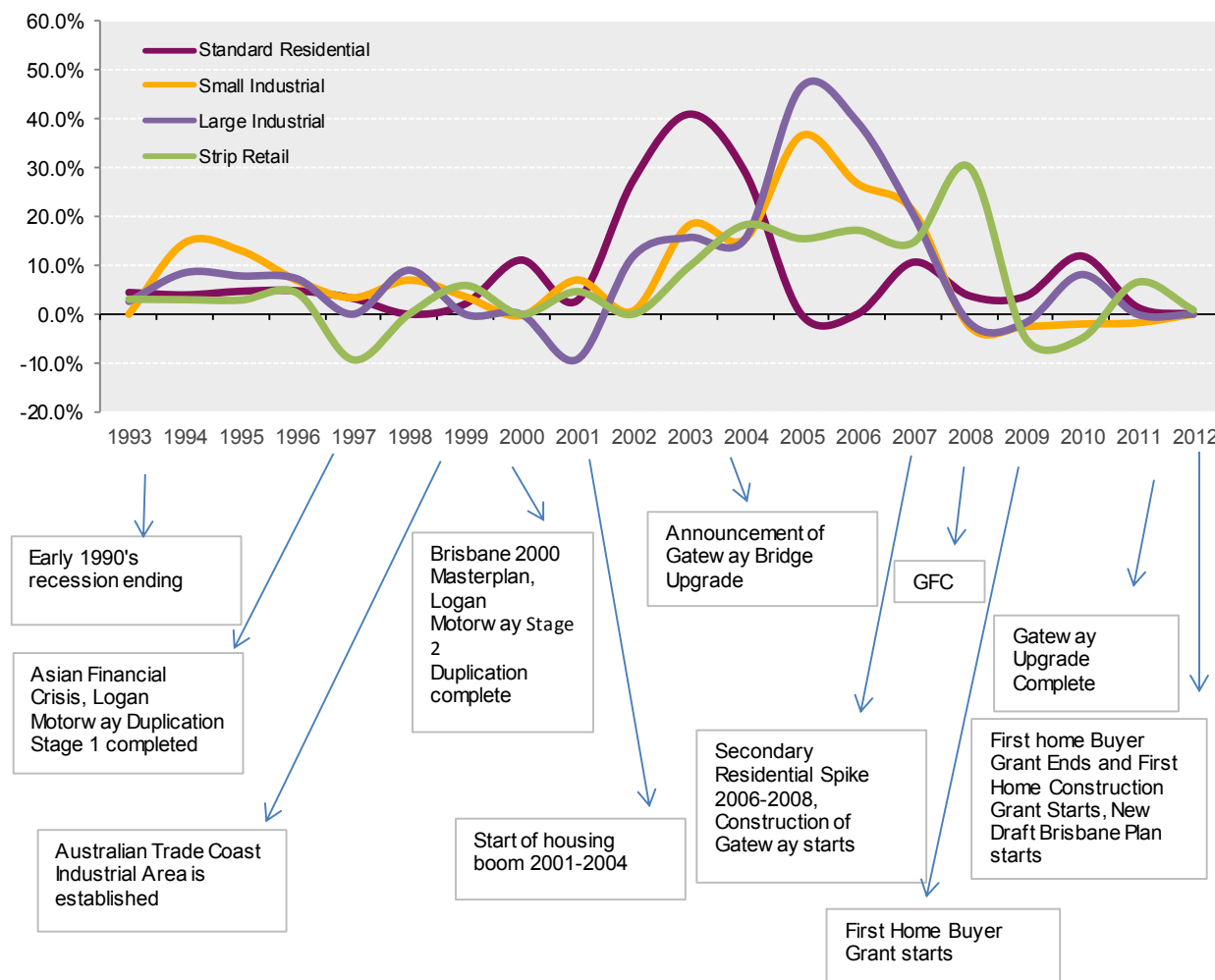


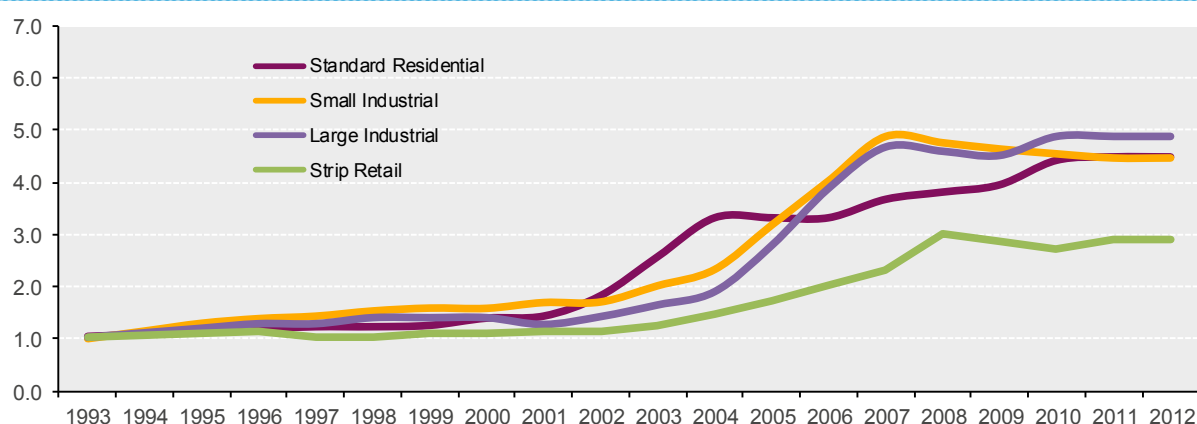
Chart 66 above brings together the Land Use types analysed for the Brisbane – Middle Zone above a timeline of economic and planning events to see what correlations may occur.

In terms of the trend lines there is some consistency between the Land Use types although Large Industrial shows a spike in the period leading up to the GFC before falling significantly in the years 2009-2011.

## Brisbane - Middle Zone Land Values

Brisbane Metro Middle Zone 1993-2012

CHART 67



Source : QLD Valuer General and Urbis

The Middle Zone Land Value Growth Indices chart above (Chart 67) reflects a relatively similar growth pattern for Standard Residential, Small Industrial and Large Industrial with only Strip Retail falling below this consistent trend.

## Brisbane - Middle Zone

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE

TABLE 33

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	4.29%	15.83%	4.16%	8.30%
Light Industrial	6.03%	17.98%	-1.75%	8.27%
Large Industrial	4.40%	20.01%	0.92%	8.99%
Strip Retail	1.23%	11.43%	5.55%	5.88%
<b>Overall</b>	3.99%	16.31%	2.22%	<b>7.86%</b>
CPI (Brisbane)	2.21%	3.45%	3.01%	2.84%
Capital Growth PA in Real Terms	1.78%	12.86%	-0.79%	5.02%

Source : Urbis

Table 33 summaries our analysis and reaffirms our assessment that over the 20-year time series there is a consistent average annual growth between the Standard Residential, Small Industrial and Large Industrial Land Uses within the Middle Zone, with annual growth for these sectors ranging between 8.99% and 8.27% per annum. Strip Retail exhibits lower average annual growth at 5.88%.

The Middle Zone overall is assessed as returning an annual 20-year growth rate figure of 7.86% (notional) and 5.02% (real).

We caution that the consolidated average figures are not “weighted” by value or number.

## 5.2.10 ALL GROWTH RATES – BRISBANE BASIN OUTER ZONE

### Brisbane - Outer Zone Rolling Annual Growth Rates

Brisbane Metro Outer Zone 1993-2012

CHART 68

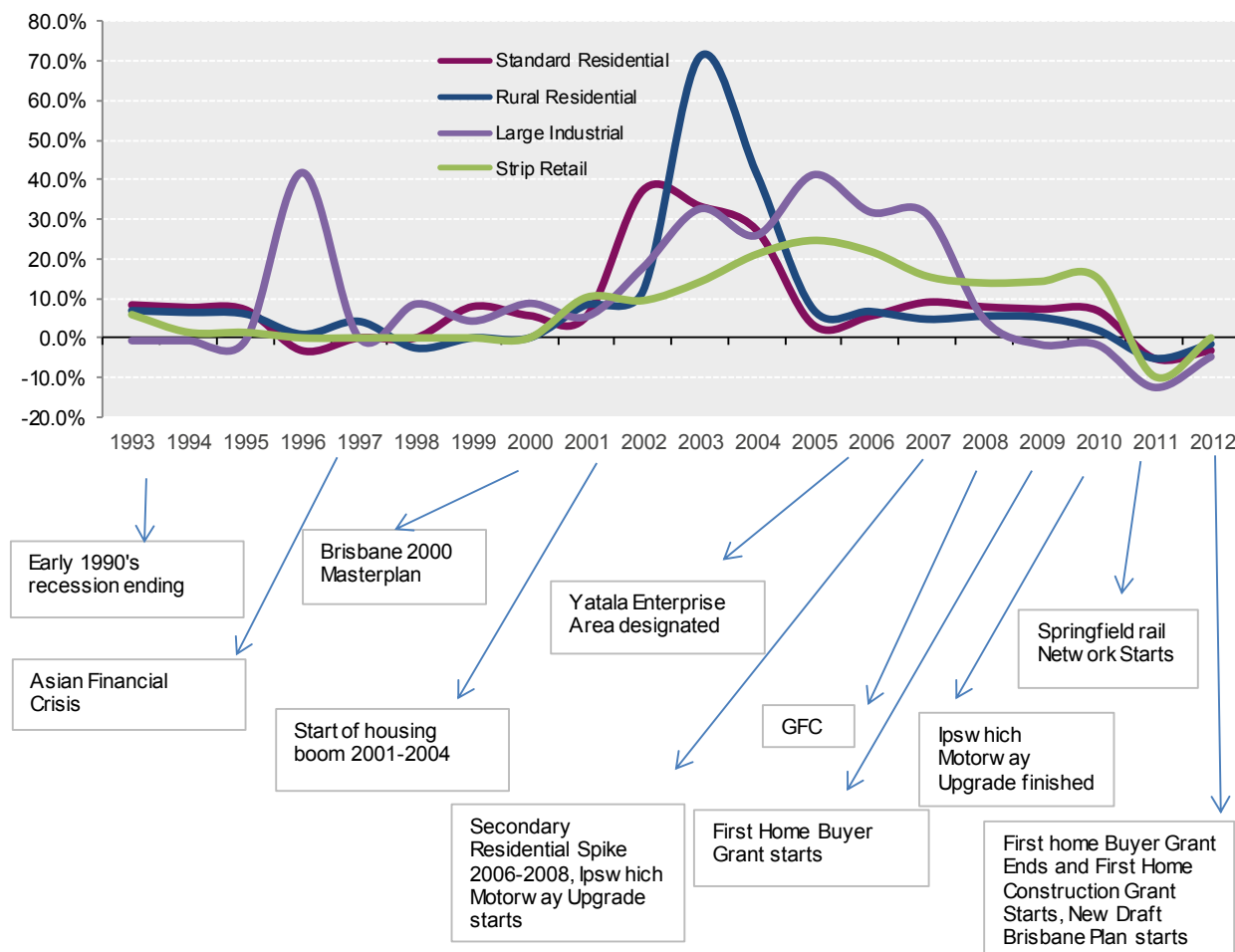


Chart 68 above brings together the Land Use types analysed for the Brisbane – Outer Zone above a timeline of economic and planning events to see what correlations may occur.

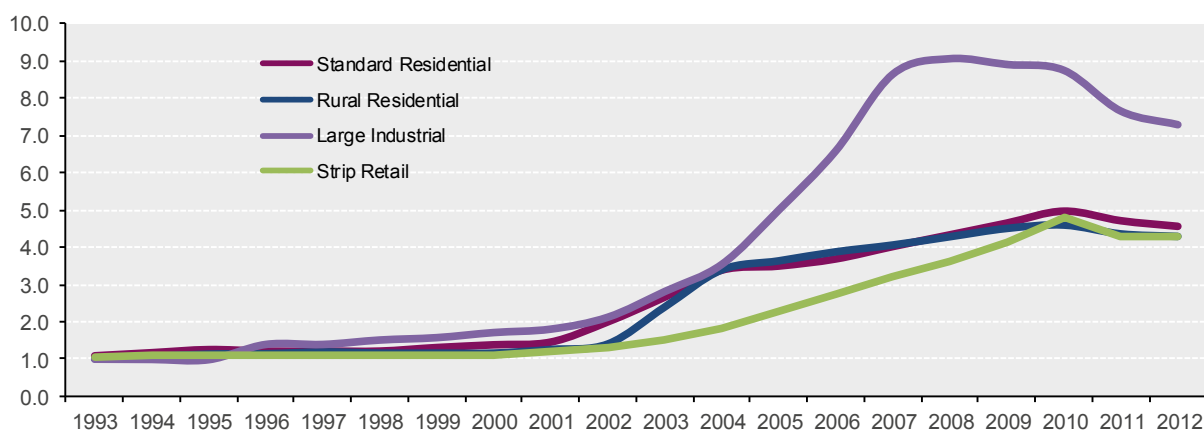
While there is some consistency in the timeline series between the Land Use types, there are some noticeable spikes in land value for Large Industrial in 1996, and 2003 for Rural Residential. The spike for Large Industrial in 1993 appears to reflect the strong economic conditions being experienced in Queensland during this period with GSP growing at above 6% per annum.

The spike in Rural Residential land values in 2003- 2004 appears a result of speculative buying just prior to the release of the South East Queensland Regional Plan 2005-2026. The downturn as a result of the GFC is clearly demonstrated in the period after 2008.

## Brisbane - Outer Zone Land Values

Brisbane Metro Outer Zone 1993-2012

CHART 69



Source : QLD Valuer General and Urbis

The Outer Zone Land Value Indices chart above (Chart 69) confirms the outperformance of Large Industrial as previously described – a situation similar to the Outer Zones of Sydney and Melbourne.

## Brisbane - Outer Zone

LONG TERM CAPITAL GROWTH RATE BY LAND USE TYPE

TABLE 34

	1993-2000	2001-2007	2008-2012	1993-2012
Standard Residential	4.18%	17.28%	2.73%	8.40%
Rural Residential	2.73%	21.61%	1.19%	8.96%
Large Industrial	7.65%	26.56%	-3.19%	11.56%
Strip Retail	1.08%	16.72%	6.72%	7.96%
<b>Overall</b>	3.91%	20.54%	1.86%	<b>9.22%</b>
CPI (Brisbane)	2.21%	3.45%	3.01%	2.84%
Capital Growth PA in Real Terms	1.71%	17.09%	-1.15%	6.38%

Source : Urbis

Table 34 summaries our analysis of the Brisbane Outer Zone, succinctly identifying the relative performance of each analysed Land Use class against milestone periods within the overall timeline that appear to have influenced performance.

The outperforming Large Industrial indicates an average annual growth rate of 11.56% over the period, with significant growth between 2001- 2007. The Outer Zone overall is assessed as returning an annual 20-year growth rate figure of 9.22% (notional) and 6.38% (real).

We caution that the consolidated average figures are not “weighted” by value or number.

The background features a dark, textured area on the left that appears to be torn or layered over a bright blue area on the right. A dark blue diagonal band runs across the lower half of the image. The text 'CASE STUDIES' is written in white, bold, sans-serif capital letters on this band. At the right end of the band, there are three parallel white lines.

# **CASE STUDIES**

The scope of this report is to estimate the annual rates of historic land value growth within the Sydney, Melbourne and Brisbane urban basins using select Land Use classes.

It appears undoubted, but more often said anecdotally, that infrastructure provision will improve the value of property in surrounding catchment areas that have received a beneficial impact – but there does not appear currently to be much in the way of publicly available, post operation studies to confirm.

Within this report, in overlaying infrastructure timelines to our estimates of running land value growth trends, there does appear correlation particularly for land in the Middle and Outer Zones of the Capital Cities analysed.

As supplementary work to this report we have researched the land value change impacts from selected motorway infrastructure corridors vs the wider urban area in each of Sydney, Melbourne and Brisbane.

The motorways that we have examined, the assessment period, and our conclusions regarding estimated land value uplift (as a percentage change from the original pro-rata value of the infrastructure catchment land value compared to that of the wider urban area) are recorded below:

## Motorway Provision - Land Value Uplift (Pro-Rata Approach)

ESTIMATED % UPLIFT IN LAND VALUES WITHIN CATCHMENT

TABLE 35

	Time Period	Growth Rate Premium (pa) over Surrounding Areas	Land Value Uplift - Route Identification to Operation
M7 Motorway Sydney	1993-2012	1.7%	21.4%
EastLink Motorway Melbourne	1993-2012	2.1%	26.4%
M1 Motorway Brisbane	2000-2012	5.8%	49.1%

Source : Urbis

Our case studies follow.

## 6.1 SYDNEY'S M7 MOTORWAY

PICTURE 1 – LIGHT HORSE INTERCHANGE, JUNCTION OF M7 AND M4 MOTORWAYS



### 6.1.1 OVERVIEW

The M7 motorway (also known as “Westlink M7” and the “Western Sydney Orbital”) is a 39.5 kilometre dual carriageway linking the M2 (Seven Hills), M4 (Eastern Creek) and M5 (Prestons) motorways in western Sydney.

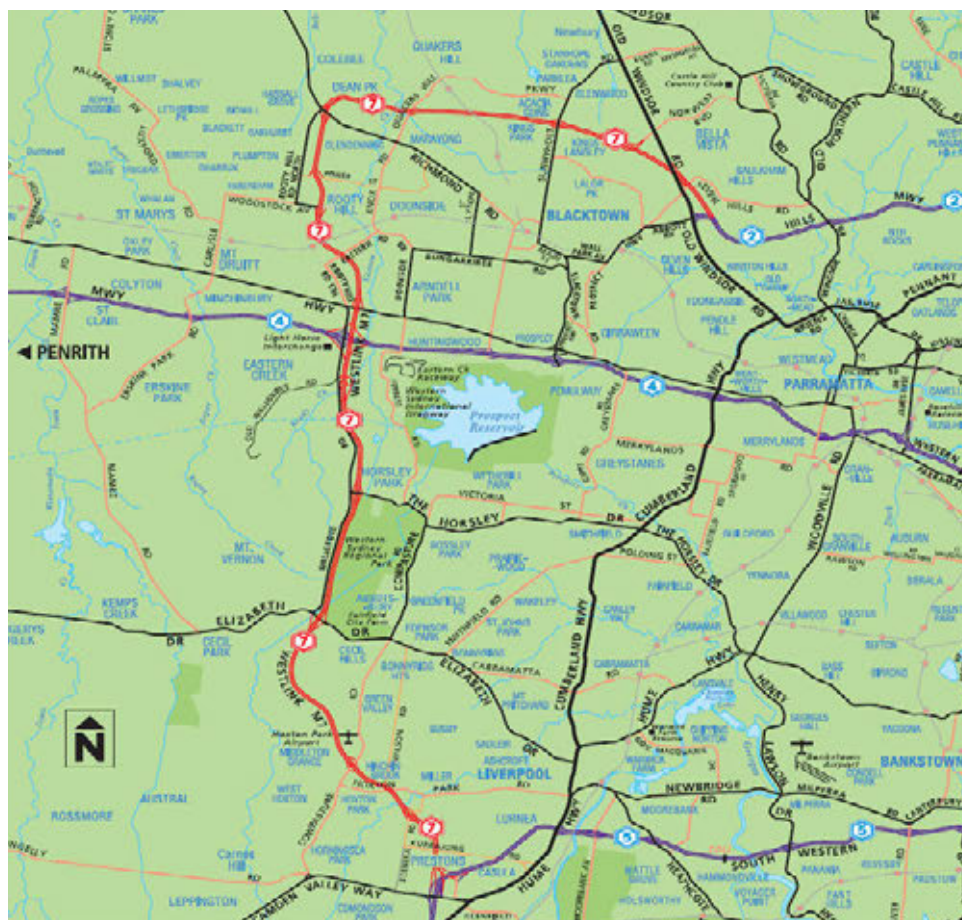
The roadway is a major north/south connector, linking one side of the city to the other, and enabling through traffic from outside of Sydney to avoid traditional metropolitan through routes such as the Cumberland Highway and Prospect Highway linkages.

The construction of the centrally located Light Horse Interchange at the junction of the M4 and M7 motorways, together with NSW Government employment land initiatives, has been the catalyst for considerable industrial development activity within the Eastern Creek and Erskine Park precincts (with flow on effects at Glendenning, Hoxton Park and Prestons). In the urban development context, the M7's north/south alignment also connects the emerging South West and North West Growth Centres.

Built to motorway standard, the M7 features 17 interchanges along the route that provide access to the communities of Liverpool, Fairfield, Blacktown and Baulkham Hills. There are 38 underpasses and overpasses that maintain local access for pedestrians, cyclists and motorists along the full length of the motorway. In addition, an off-road shared cycle / pedestrian pathway runs parallel to the entire motorway and connects with the Sydney Cycleway network.

The M7 is a distanced based cashless, free-flow electronic tollway with no toll booths. Tolls are collected using electronic tags or via number plate recognition. For trips of less than 20 kilometres the toll is calculated on a rate per kilometre. Above this distance the toll rate is capped (but adjusted quarterly in line with CPI). The April 2013 maximum toll for using the M7 is \$7.32 for all vehicles.

The M7's alignment is below<sup>6</sup>.



### 6.1.2 HISTORY

The M7 was planned over several decades by virtue of the *County of Cumberland Planning Scheme* (1948) and the *Sydney Region Outline Plan* (1968) which both established the principle of green belts, open space and service corridors in western Sydney.

The *Sydney Area Transportation Study* (1974) proposed the need for an outer metropolitan highway and confirmed a corridor for its route. This was followed by the *Liverpool to Hornsby Highway Strategy Study Final Route* (1993) which identified a preferred route for a future national Highway linking the M5 motorway at Prestons with the F3 freeway at Wahroonga. The preferred route was announced by the Commonwealth Minister for Transport in April 1994 (the M5 had already opened earlier in 1992).

The Western Sydney Orbital's *Environmental Impact Statement* was placed on public exhibition in January 2001 and the NSW Minister for Planning approved the project in February 2002. The NSW Government's *Action for Transport 2010 - An Integrated Transport Plan for Sydney* (1998) provided a timeline for the M7 being completed by 2007.

In October 2002 the Westlink Motorway consortium (being Leighton, Abigroup, Transurban and Macquarie Bank) was appointed to construct and operate the tollway, with construction starting in July 2003. The Commonwealth Government contributed \$360 million towards the M7's cost, with the remaining capital cost before debt being met by the private sector and estimated at \$1.54 billion<sup>7</sup>.

<sup>6</sup> Source : [www.westlinkm7.com.au](http://www.westlinkm7.com.au)

<sup>7</sup> Patronage Forecasts for Select Toll Roads, prepared by GHD on behalf of NSW Department of Infrastructure and Transport, dated December 2011

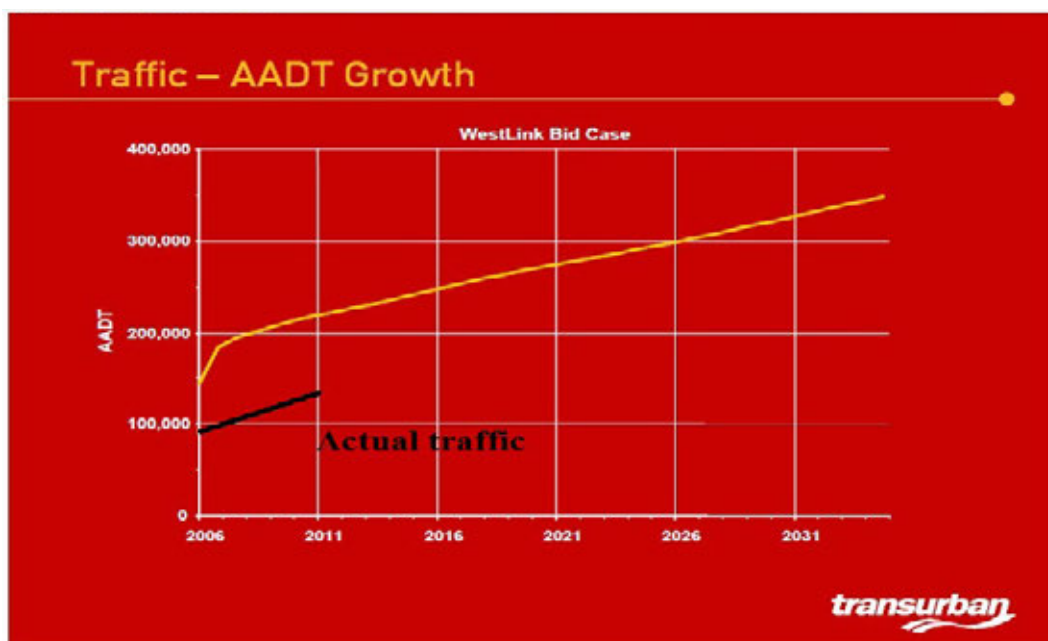
The total debt and equity outlay appears to have been \$2.23 billion<sup>8</sup>. The M7 opened for operation in December 2005.

### 6.1.3 OPERATIONAL PROFILE

Transurban (50%) and Western Sydney Road Group (50%) are the concession holders for the motorway, with Westlink Motorway Limited responsible for operations. The concession ends in 2037.

The Western Sydney Road Group is not publicly listed, and appears to be owned by Queensland Investment Corporation (50%) and the Canada Pension Plan Investment Board (50%).

Transurban is an ASX company operating toll roads in Australia and the US. It also owns, in addition to overseas assets, the M2 motorway (100%), the Lane Cove Tunnel (100%), the Eastern Distributor (75%) and the M5 motorway (50%). Transurban's traffic forecasts for the M7 just prior to completion of construction were for 175,500 daily trips<sup>9</sup>, however in the motorway's first year of operation the traffic count was approximately half of this.



Source : [www.transurban.com.au](http://www.transurban.com.au)

Perusal of recent Transurban ASX reports (50% ownership) indicates traffic AADT (average annual daily traffic) for the final 6 months of 2012 averaged 142,641 vehicles daily. Traffic growth and revenue growth appears to be increasing some 1% to 7% per annum respectively since the initial 2005/2006 year<sup>10</sup>.

Transurban's ASX reports also note that a significant level of toll revenue comes from short trips along the motorway (average length of trip being 13 kilometres), with these short trips providing a higher level of toll as they are based on kilometres travelled, as opposed to the capped rate for the longer distance. There is also consistent traffic growth on both weekends and weekdays, with the strongest increases being on the southern section of the M7 (where we assume interstate and Port Botany traffic travels northwards from the Hume Highway and M5, dispersing to the M4 at the Light Horse Interchange).

<sup>8</sup> Transurban ASX presentation dated 17 February 2003

<sup>9</sup> "M2 and M7 Growth Corridor" ASX analysis by Transurban dated August 2005

<sup>10</sup> Source: [www.transurban.com.au](http://www.transurban.com.au)

Transurban's most recent ASX report<sup>11</sup> notes that during 2012 passenger vehicle traffic increased by 2.5%, whereas truck movements increased 6.7% - no doubt as a result of the burgeoning development activity within the Western Sydney Employment Area near the Light Horse Interchange, and increasing port activity (where Port Botany container movements are escalating at some 5% per annum in recent years).

The M7 motorway facilitates improved truck accessibility to the majority of western Sydney's established industrial precincts from the established Hume Highway and the M4, M5 and M2 routes.

#### 6.1.4 BASE CASE STUDY METHODOLOGY

The objective of this case study is to examine the effect of the M7 motorway infrastructure on surrounding land values and relevant associated industrial precincts.

Given that the M7 has been mooted from the 1970's (its general alignment first appeared in UBD road directories at this time) with the project gaining real planning traction during the 1990's, we have adopted a 20-year time series using a basket of appropriately zoned industrial properties within the M7 "catchment" (being Blacktown, Moorebank, Smithfield, and Wetherill Park) and a basket of industrial properties in "Greater Sydney" as a base case (being Hornsby, Marrickville, Botany, Campbelltown, Silverwater, Taren Point and Rydalmere).

Our approach is to use running annual statutory land value assessments for each property in the basket as a proxy for the unimproved land value. This allows us to identify annual changes in notional value caused by economic circumstances, major planning initiatives and importantly the planning and construction delivery timetable of the M7 infrastructure itself.

Our Greater Sydney basket is intended to be representative of the wider Sydney industrial market excluding the M7 Catchment, and includes high value/high growth properties in Sydney's east (e.g. Botany) off-set by low value/lower growth properties in Sydney's outer west (e.g. Campbelltown). Some properties in the Greater Sydney basket already have values reflecting their location close to nearby motorway infrastructure (e.g. Silverwater with the M4) but such infrastructure was constructed prior to that of the M7. The Greater Sydney basket therefore does not necessarily have a direct value benefit created by the M7 infrastructure, and becomes our base case.

Further, aware that industrial land value growth is typically a function of supply and demand, employment growth and GSP, our use of a basket of already zoned and serviced properties in established areas provides annual value movements that intrinsically captures these value drivers.

Regardless, our land value growth charts also identify CPI (Sydney) as a proxy for an investor's minimum required land value growth expectations.

Our statutory land value assessments have been sourced from the NSW Valuer General Office which tracks and makes available long-term running annual statutory valuations for certain representative properties that are unchanged from 1984.

#### 6.1.5 LAND VALUE CHANGES CREATED BY THE M7

We firstly examined the rolling annual statutory value changes for small (average 2,000m<sup>2</sup>) and large (average 3.1 Ha) industrial properties within our M7 Catchment basket.

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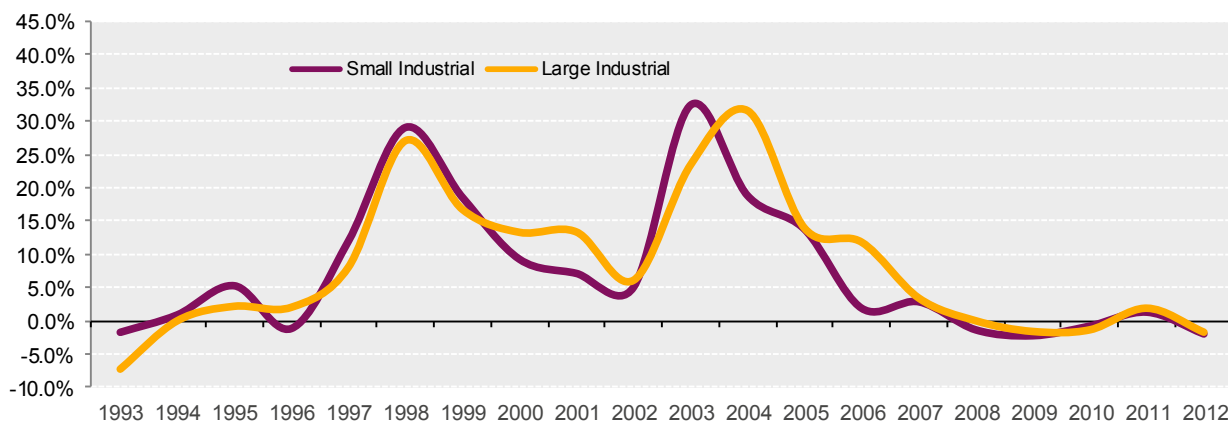
<sup>11</sup> Transurban ASX presentation 11 January 2013

Chart 70 below indicates early growth as the State recovers from the recession of the early 1990's; a rapid escalation of growth during 1996 to 1998 potentially contributable to the Olympics build program, the 1998 release of the Shaping Our Cities Metro Strategy, and the exhibition of SEPP 59 (which was gazetted in 2000); the rapid escalation of land values from 2003 to 2005 (average annual growth of 22% over 3 years) likely attributable to the opening of the nearby M5 and the commencement of the M7 construction; before softening to the GFC impact of 2008 where there was negative growth; and modest recovery since.

## M7 Catchment - Rolling Annual Growth Rates (pa)

% CHANGE IN ANNUAL LAND VALUES 1993-2012

CHART 70



Source : NSW Valuer General and Urbis

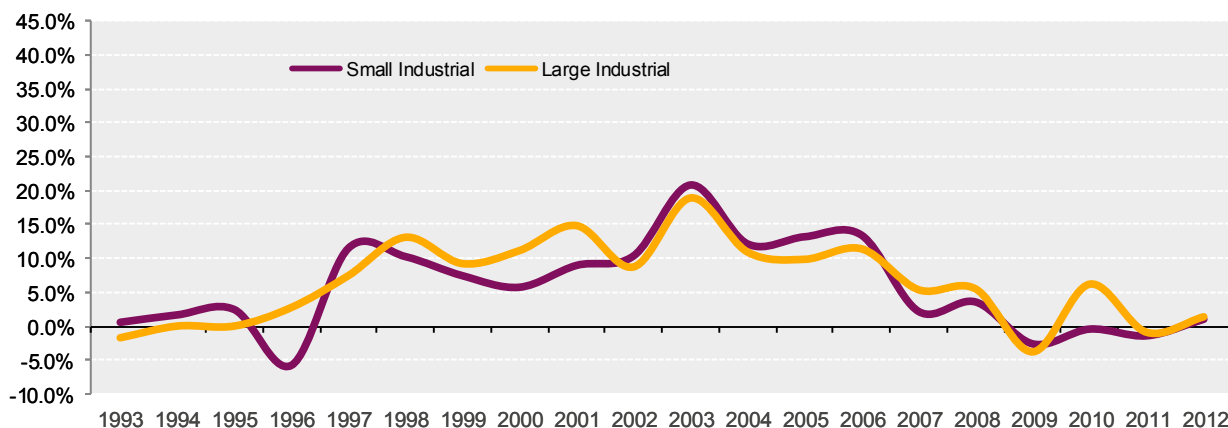
The consolidated average annual land value growth rate within the M7 Catchment study area (i.e. both Small Industrial and Large Industrial) over the 20-year timeline is 7.79% per annum (average, unweighted).

Chart 71 for Greater Sydney Industrial, in comparison, generally shows the same trend lines but without the spectacular growth rates seen within the M7 Catchment of the 1998 and 2003-2005 years. As indicated, this property basket includes a property in the Botany industrial precinct which, over the 20-year timeline, has experienced high annual average compounding growth of 8.8% per annum (including the GFC). By comparison a large Rydalmere property has returned 5.0% annual average compound growth rate over the same period.

## Greater Sydney Industrial - Rolling Annual Growth Rates (pa)

GREATER SYDNEY CATCHMENT - % CHANGE IN LAND VALUES 1993-2012

CHART 71



Source : NSW Valuer General and Urbis

The consolidated average annual land value growth rate within the Greater Sydney Industrial study area (i.e. both Small Industrial and Large Industrial) over the 20-year timeline is 6.12% per annum (average, unweighted).

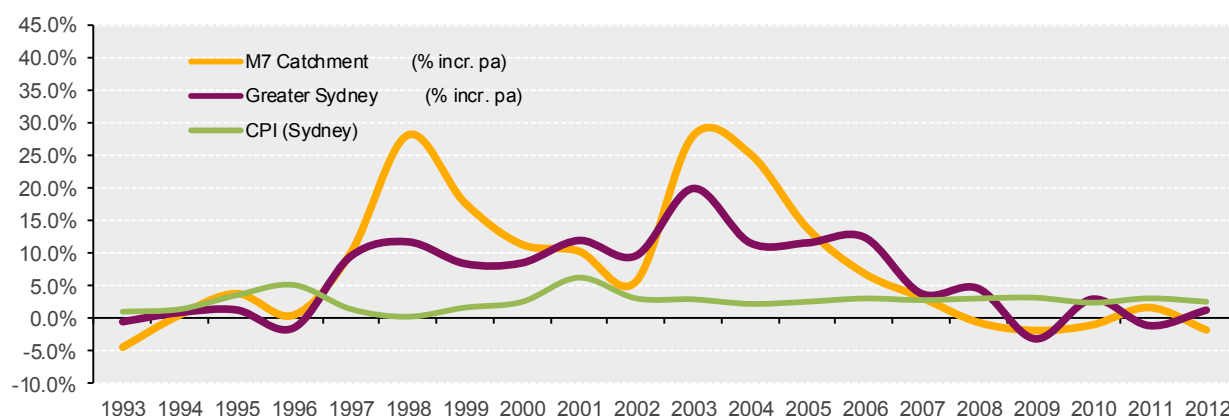
### 6.1.6 STUDY OUTCOMES

Chart 72 below illustrates analysed average growth rates (i.e. for both the Small and Large Industrial properties) for the M7 Catchment and Greater Sydney areas for the study period with CPI (Sydney) provided as a reference point. Clearly the M7 Catchment is experiencing beneficial value growth patterns during the aforementioned 1998 and the 2003-2005 years over that being experienced by the wider Sydney industrial market.

## Comparison - Industrial Land Growth Rates and CPI

INDUSTRIAL LAND VALUATIONS - M7 CATCHMENT vs GREATER SYDNEY 1993-2012

CHART 72



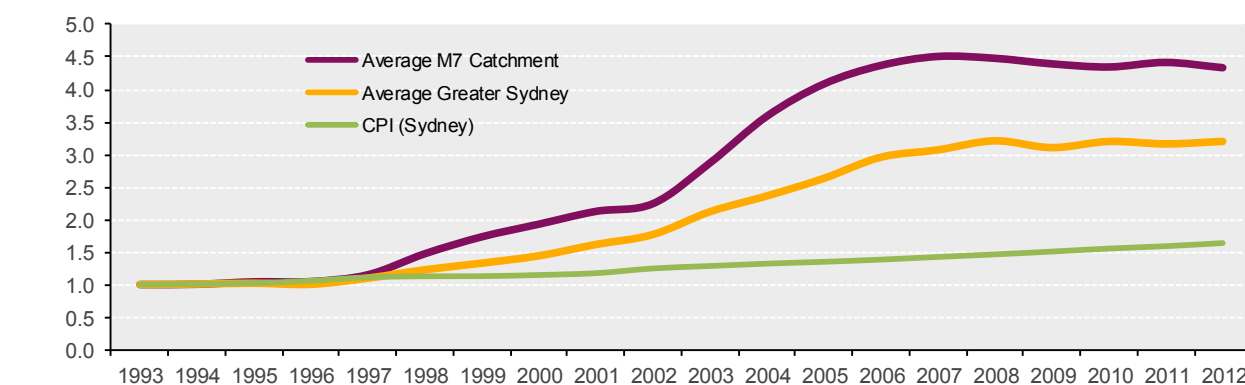
Source : NSW Valuer General and Urbis

This is also exhibited by the following indices analysis (Chart 73).

## Comparison - Land Value Indices and CPI

INDUSTRIAL LAND INDICES AND CPI - M7 CATCHMENT, GREATER SYDNEY 1993-2012

CHART 73



Source : NSW Valuer General and Urbis

With regard to the indices analysis both property baskets feature strong sustained capital growth from the period 2001-2007, when the property sector was extremely active by virtue of plentiful and cheap debt, and artificial demand – before the impact of the GFC in 2008.

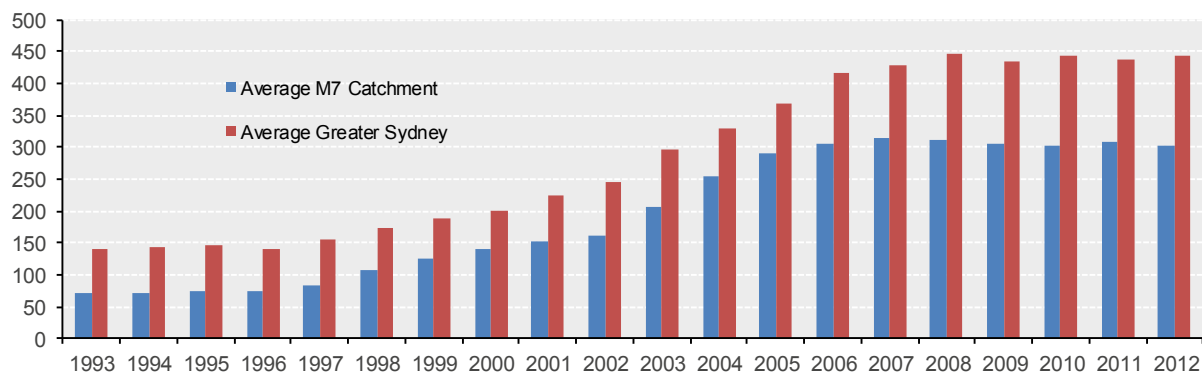
However the higher growth rate of the M7 Catchment is exhibited during the period 2003-2007, when M7 construction activity and associated land opportunities were evident to the market, firstly during the period 2003-2005 and secondly with the tollway's opening and early operation in 2006-2007.

Chart 74 below shows a comparison of average land values (\$/m<sup>2</sup>) over the study period i.e. we have averaged the small and large property values for a total representative value per \$/m<sup>2</sup> for each basket of properties.

## Comparison - Average Land Values (\$/m<sup>2</sup>)

AVERAGE LAND VALUES (\$/m<sup>2</sup>) - M7 CATCHMENT vs GREATER SYDNEY 1993-2012

CHART 74



Source : NSW Valuer General and Urbis

We highlight that for this comparison to be highly accurate a greater number of sample properties is required to be analysed. Regardless our analysis serves to identify that over the 20-year period M7 Catchment land values have moved from being approximately 50% of that of Greater Sydney Industrial land values to approximately 70%.

### 6.1.7 SUMMARY

In concluding our estimate of the beneficial impact of the M7 infrastructure on surrounding industrial land values we have had regard to certain project, planning and market timing milestone periods (i.e. critical phases over the 20-year study period) that appear to have shaped the land values analysed.

Our analysis is focused on both annual land value growth rate trends and changes in historic land values, concluding by noting the percentage change in the respective land value baskets on a pro-rata percentage basis (i.e. the average value of the M7 Catchment as a percentage of the Greater Sydney Industrial land value average).

We note that our statistical baskets comprise of serviced and appropriately zoned industrial assets, hence no speculative en-globo lands are captured which may distort the outcomes.

In the period 1993- 2000 Sydney's industrial development and investment markets, whilst active in the Olympics lead-up, was beginning to focus on the M7's potential. The route was known, the M5 motorway had been constructed, and the EIS exhibited. Perhaps due to this during this period the M7 Catchment was exhibiting a higher average annual growth rate (8.4% to 4.7%). However serviced and appropriately zoned land in the M7 Catchment still had a much lower average value base than that of the Great Sydney Industrial market (\$94/m<sup>2</sup> vs \$161/m<sup>2</sup> or 58% pro-rata value).

The period 2001- 2005 provided strong acquisition and development activity in the Western Sydney Employment Area. State Environmental Planning Policy No. 59 had been gazetted and the motorway was under construction – providing strong flow-on benefits to surrounding land in the M7 Catchment (this notwithstanding, the Greater Sydney Industrial market was not exempt from positive market sentiment and growth).

We perceive that because the industrial market could now see the infrastructure being constructed and better appreciate the locational and operational benefits, and that the base land values had been escalating more quickly than the wider market, land values increased dramatically. Accordingly during this period the M7 Catchment now appears to be exhibiting pro-rata pricing 73% of that of the Greater Sydney market, with the average annual growth rate only marginally higher (16.6% to 12.9%) as the opportunity “matured”.

Between 2006- 2012 the overall Sydney industrial market experienced a continuation of the earlier boom until 2008, when the GFC sent growth into negative territory for 2-years, with some modest improvement since. Despite the GFC, the M7 Catchment on our analysis has maintained its approximate 70% parity with that of the overall whole of Sydney industrial market, with annual growth rates broadly similar (7.8% vs 6.1%).

## Project Milestone Matrix - Pro-rata Land Values and Annual Growth Rates

LAND VALUE AND GROWTH DIFFERENTIALS (1993-2012) EXHIBITED BY M7 INFRASTRUCTURE

TABLE 36

	1993-2000	2001-2005	2006-2012	1993-2012 Differential increase from M7 route ID to sustained operation
	Years prior to M7 EIS, but general route is known	M7 EIS, project approval and completion	M7 in operation (includes GFC impact)	
Greater Sydney Average Land Value (\$/m2)	\$161	\$293	\$436	
M7 Catchment Average Land Value (\$/m2)	\$94	\$213	\$307	
<b>Pro-rata Comparison of Land Values</b>	<b>58.1%</b>	<b>72.7%</b>	<b>70.5%</b>	
<b>Infrastructure Provision % Change Benefit from 1993-2000</b>				<b>21.39%</b>
M7 Catchment Annual Land Value Growth Rate	8.4%	16.6%	1.8%	7.8%
Greater Sydney Annual Land Value Growth Rate	4.7%	12.9%	2.9%	6.1%
CPI (Sydney)	2.0%	3.3%	2.8%	2.6%
<b>M7 Annual Growth Differential (inclusive of CPI)</b>	<b>3.7%</b>	<b>3.7%</b>	<b>-1.1%</b>	<b>1.7%</b>

Source : NSW Valuer General and Urbis

Table 36 above identifies that the strongest land value uplift attributable to the motorway infrastructure within the immediate M7 Catchment has appeared to have happened once the construction of the motorway started through to its completion.

There appears to have been earlier market speculation (or anticipation?) via a higher annual value growth rate prior to construction, but the M7 Catchment values at this time appeared to have been coming off a much lower base than that of the Greater Sydney Industrial average. After completion of the infrastructure much of the earlier speculation appears to have been realised, with respective land value growth rates being closer to parity (though it would appear supply/demand pressures still appear to favour the M7 Catchment).

Accordingly it appears that, on a land value parity basis with Greater Sydney Industrial, the M7 motorway infrastructure provision and operation between 2006- 2012 has lifted the infrastructure catchment's land value parity from the 1993- 2000 period by 21.39% i.e. the M7 Catchment land in the earlier period exhibited a pro-rata value 58.1% of that of Greater Sydney Industrial, increasing to 70.5% once the motorway was operating.

The value uplift appears to have primarily occurred during the 2001- 2005 period when the motorway route was reaffirmed via the EIS, its construction commenced and completed.

## 6.2 MELBOURNE'S EASTLINK TOLLWAY



Source : [www.linkingmelbourne.vic.gov.au](http://www.linkingmelbourne.vic.gov.au)

### 6.2.1 OVERVIEW

EastLink is a tolled section of the M3 Freeway incorporating 39 kilometres of dual carriageway linking the Eastern Freeway (Ringwood), Burwood Highway (Vermont South), Monash Freeway (Noble Park North), Princes Freeway (Noble Park) and Mornington Peninsula Freeway (Frankston) in eastern and southern Melbourne.

The roadway is a major north/south connector, linking the north east and south east corridors of Melbourne, and alleviating congestion on surrounding secondary roads including most notably, Springvale Road. In an urban development context, the tollway's alignment also connects the emerging South East growth corridor with the more established East precinct.

The construction of EastLink tollway, together with the earlier development of major arterials including the Monash Freeway, has been the catalyst for considerable industrial development activity within the eastern and particularly south eastern industrial precincts over the last 20-years. The developing industrial localities of Dandenong South and Keysborough particularly benefited from improved connectivity/ linkages following the completion of the EastLink tollway.

The tollway is a twin/ three lane road of freeway standard which includes 1.6 kilometres of tunnels, 17 interchanges and 88 underpasses and overpasses. In addition, 40 kilometres of shared use recreational pathways extend parallel to the tollway.

The tollway begins at the eastern end of the Eastern Freeway at Springvale Road in Nunawading, before turning eastward towards Ringwood. It then extends approximately 39 kilometres south towards Frankston, passing through the suburbs of Wantirna, Wantirna South, Scoresby, Rowville, Mulgrave, Dandenong North, Noble Park, Keysborough, Dandenong South, Bangholme and Carrum Downs.

The tollway ends at the northern end of the Frankston Freeway, approximately 3 kilometres north of the Frankston city centre.

EastLink is electronically tolled via 'Breeze Tags', an electronic vehicle tag which is compatible/ inter-operable with other Australian tollways, including the Transurban e-TAG system used on Melbourne's other tollway, CityLink. The tolls are calculated based on distances and are capped for a car at \$5.15 for a one-way trip.

The alignment of EastLink is illustrated below.



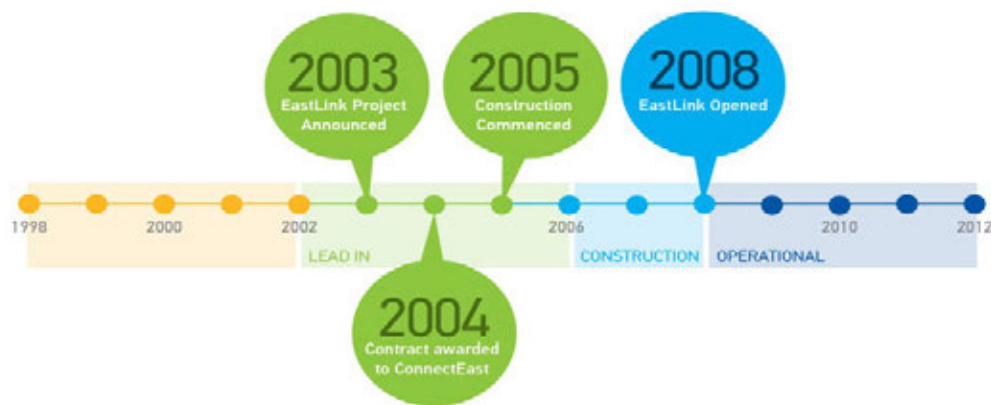
## 6.2.2 HISTORY

Original plans for an outer east freeway in Melbourne (known originally as the Scoresby Freeway) began in the 1960's which led to the State Government reserving much of the necessary land in the eastern corridor. By early 2000's the government elected to undertake business case analysis of the project which led to the decision to combine multiple infrastructure initiatives (Scoresby Freeway and Eastern Freeway Tunnels) into the Mitcham-Frankston Freeway Project.

In 2003 the government announced that the project would be funded by tolls and established the Southern and Eastern Integrated Transport Authority (SEITA) to oversee the procurement and commissioning of the project. Expressions of Interest (EOI) were called for in late 2003 and environmental approvals for the project were granted by the Federal Government. A request for proposal (RFP) was subsequently issued to two bidding consortia, being ConnectEast and Mitcham Frankston Motorway.

Proposals were submitted by the bidding consortia in April 2004 and by October 2004 ConnectEast was announced as the winning bidder and was awarded the contract for the design, construction and operation of EastLink. ConnectEast thereafter appointed Thiess John Holland (being a group partnership of two major construction companies) to undertake the detailed design and construction of the tollway.

Construction of EastLink began in March 2005 and the road opened for operation in June 2008, approximately 5 months ahead of schedule. The final project cost was estimated as \$2.5 billion. A timeline of the EastLink tollway project follows:

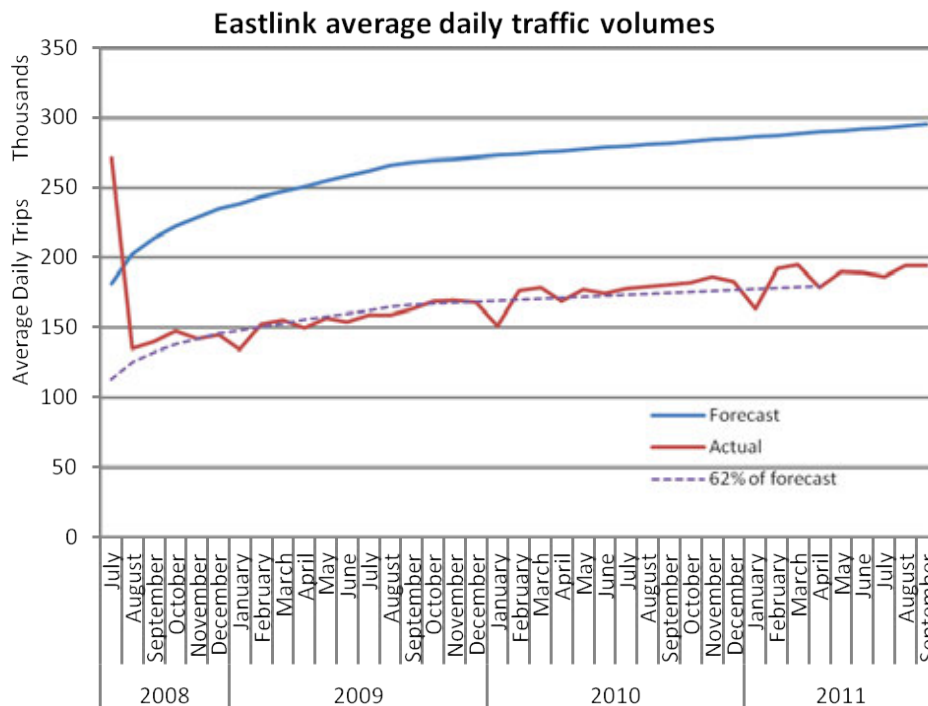


### 6.2.3 OPERATIONAL PROFILE

The EastLink tollway is operated by ConnectEast Group, a single-purpose entity responsible for the successful delivery of the tollway including the financing, design, construction, maintenance and operation of the project.

The Connect East Group was originally founded in 2002 and was later acquired in October 2011 by Horizon Roads, an investment vehicle established by an existing major shareholder (CP2). CP2 is an Australian-owned and headquartered infrastructure fund manager that was established in 1997.

Traffic patterns for the EastLink tollway appear similar to that of the M7 motorway in Sydney. Actual traffic volumes for the first year of operation fell notably below forecast (186,000 per day) and have since maintained levels at or about 60-65% of original forecasts as shown in the following chart.



Data sources: ConnectEast ASX releases, ConnectEast Product Disclosure Statement

The chart shows that actual vehicle movements have failed to reach forecasts, however the ramp-up-shape or continual increase in volume largely mirrors the estimated improvement/ increase.

Following Horizon Roads (CP2) acquisition of ConnectEast in October 2011, data reporting (traffic volume, company financials) are no longer available to the public. Anecdotally vehicle movements are reportedly continuing to improve and the recent opening of Peninsula Link (early 2013) and other network upgrades are likely to support post-ramp up growth rates.

#### 6.2.4 BASE CASE STUDY METHODOLOGY

The objective of this case study is to examine the effect of the EastLink tollway infrastructure on surrounding industrial land values.

Although originally earmarked in the 1960/70s, the EastLink project (or Scoresby Freeway as it was known previously) gained traction during the late 1990 and early 2000's. We have therefore elected to adopt a 20-year time series utilising a basket of industrial zoned properties located within proximity to the EastLink tollway (being Ringwood, Bayswater, Bayswater North, Scoresby, Knoxfield, Noble Park, Dandenong South and Keysborough) and a basket of industrial properties located in the western and northern industrial markets or 'Greater Melbourne' (being Newport, Spotswood, Campbellfield and Laverton North) that gained no material benefit from EastLink.

Our approach mirrors that of the M7 case study, whereby we have reviewed a series of statutory land value (site value) assessments for each property in the basket as a proxy for the unimproved land value. This provides a data set to identify annual changes in notional value caused by major land value drivers including economic circumstances, major planning initiatives and importantly the planning and construction delivery timetable of the EastLink infrastructure itself.

Our Greater Melbourne Industrial basket is intended to be representative of the wider Melbourne industrial market and excludes land located within the eastern and south eastern industrial precincts, being land affected/ directly benefiting from the introduction of the EastLink tollway. Whilst land located within the Greater Melbourne Industrial basket is in most cases located in proximity to major road infrastructure (e.g. West Gate Freeway) we note that such infrastructure was constructed prior to the study period (pre-1992).

Further, as we are also aware that industrial land value growth is typically a function of supply and demand, employment growth and GSP, our use of a basket of already zoned properties in established areas provides annual value movements that intrinsically capture these value drivers. Regardless, our land value growth charts also identifies CPI (Melbourne) as a proxy for an investor's minimum required land value growth expectations.

The primary data source for this case study was statutory land value (site value) assessments sourced from various municipalities (local government authorities) in metropolitan Melbourne.

In this context the State of Victoria requires local government to undertake statutory valuations for the purpose of charging council rates and state land tax. The valuation process is undertaken by Certified Valuers and is overseen and sanctioned by the Valuer General of Victoria. Since 2000 statutory valuations have been undertaken on 2-yearly cycles (2000, 2002, 2004, 2006, 2008, 2010 and 2012), however prior to this were undertaken on either four or six year cycles.

Given the irregularity of valuation cycles (valuation dates), intervening years have been populated assuming straight line appreciation / depreciation (constant change) between dates (e.g. Year 1 Valuation of \$100,000, Year 3 Valuation of \$120,000 therefore Year 2 Assumed Value of \$120,000). It is also important to note that as site values (statutory values) were used rather than actual purchase prices, the data is only an approximation of market values during the study period.

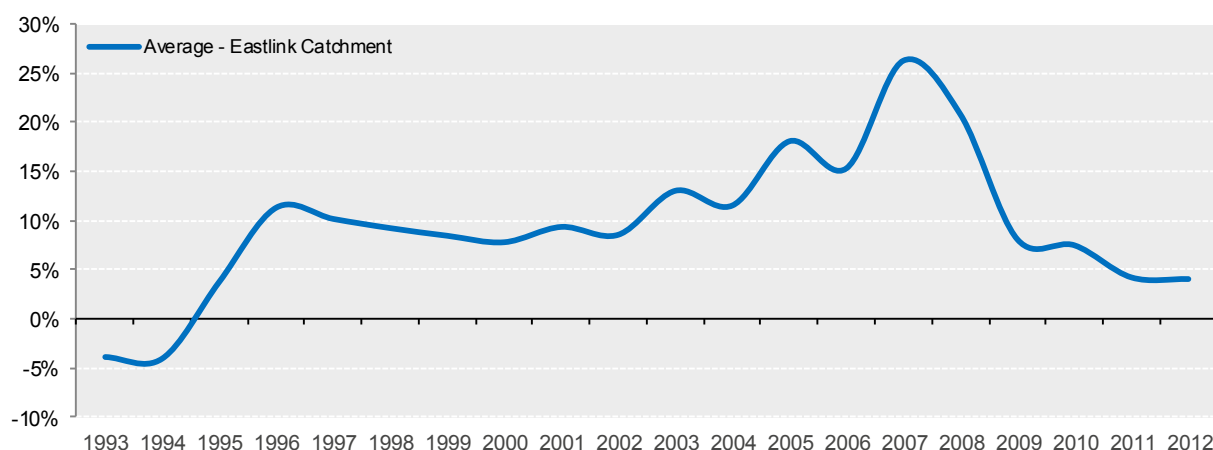
## 6.2.5 LAND VALUE CHANGES CREATED BY EASTLINK

We firstly examined the rolling annual statutory value changes for Large (average 2 Ha) industrial properties within our EastLink Catchment basket (affected land).

### Eastlink Catchment - Large Industrial

% CHANGE IN ANNUAL LAND VALUES (1993-2012) - Rolling Annual Average Value

CHART 75



Source : Local Government Authorities (LGA)

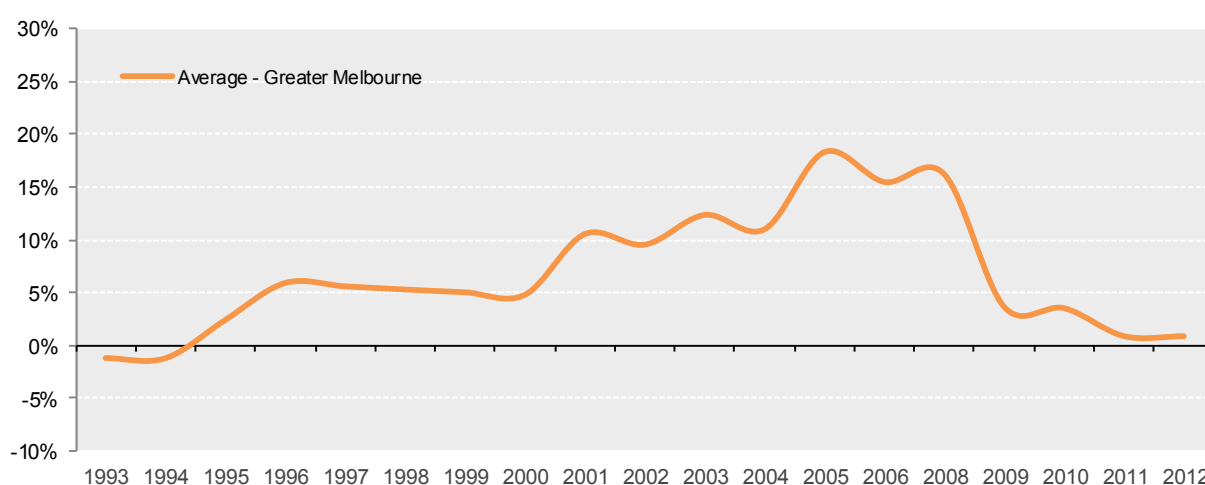
Chart 75 above indicates:

- Early growth as the state recovers from the recession of the early 1990's;
- Sustained positive growth during the late 1990 and early 2000's;
- The continued escalation of land values between 2003- 2006 (average annual growth of 14% over 3 years);
- Peak growth experienced during 2007- 2008 (average annual growth of 23% over 2 years) coinciding with the construction and commencement of the EastLink tollway; and
- Growth softening sharply between 2009- 2012 (post GFC era).

## Greater Melbourne - Large Industrial

% CHANGE IN ANNUAL LAND VALUES (1993-2012) - Rolling Annual Average Value

CHART 76



Source : Local Government Authorities (LGA)

Chart 76 for Greater Melbourne Industrial (non-affected land), in comparison, generally shows the same trend lines but with more modest growth rates experienced during 2006 and 2008. Average annual growth experienced during this 2-year period was circa 15%.

The basket includes properties located within the northern and western industrial sub-markets of Melbourne, which generally exhibit similar locational characteristics to properties within the EastLink catchment.

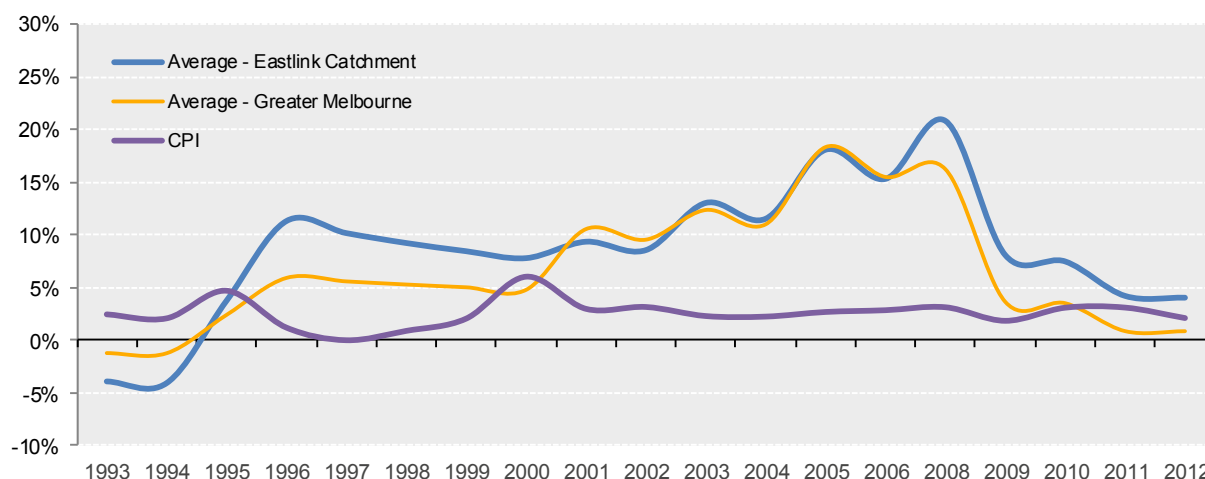
### 6.2.6 STUDY OUTCOMES

The following Chart 77 below illustrates analysed average growth rates for both the EastLink Catchment and Greater Melbourne Industrial areas for the study period, with CPI (Melbourne) providing a reference point.

## Comparison - Industrial Land Growth Rates & GSP

% CHANGE IN ANNUAL LAND VALUES (1993-2012) - Rolling Annual Average Value

CHART 77



Source : Local Government Authorities (LGA)

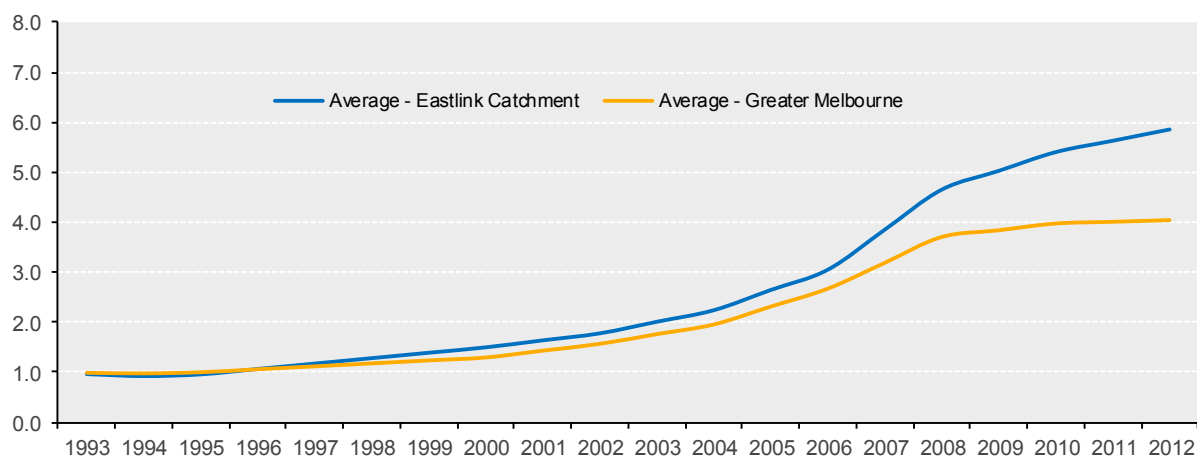
As demonstrated the EastLink Catchment experienced a beneficial value growth pattern (stronger annual growth) during the periods of 1995- 2000 and 2007- 2012, compared to the Greater Melbourne Industrial market.

This is also exhibited by the following indices analysis (Chart 78).

## Melbourne - Large Industrial Land Value Index

CHANGE IN ANNUAL LAND VALUES (1993-2012)

CHART 78



Source : Local Government Authorities (LGA)

With regard to the indices analysis both property baskets feature strong sustained capital growth from the period 2001- 2007 when the property sector was extremely active by virtue of plentiful and cheap debt, and artificial demand, and before the impact of the GFC in 2008.

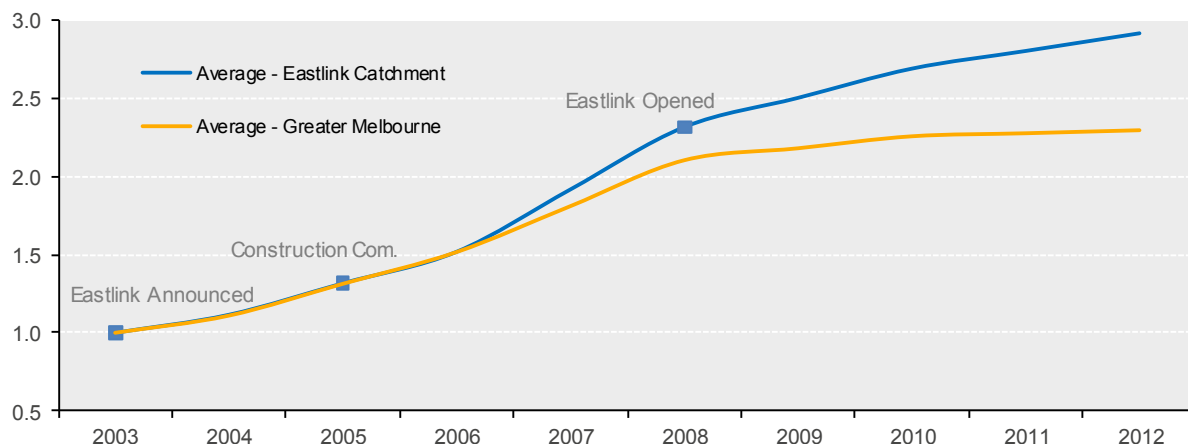
Noticeably however the EastLink Catchment exhibits higher growth during the period of 2006- 2008 when EastLink's construction activity and associated land opportunities were evident in the market.

The EastLink Catchment also exhibits stronger growth (although more modest growth by comparison to the preceding period) during the period post GFC (2008) where limited growth was recorded within the Greater Melbourne Industrial market.

## Comparison - Industrial Land Value Index

CHANGE IN ANNUAL LAND VALUES OVER PROJECT PERIOD (2003-2012)

CHART 79



Source : Local Government Authorities (LGA)

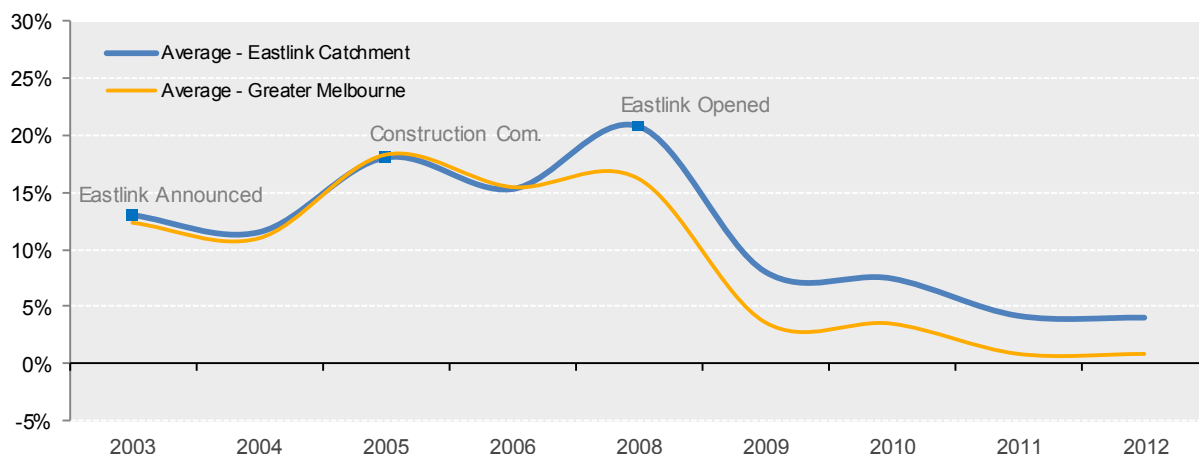
Chart 79 above demonstrates the varying land value change in both catchment areas over the course of the EastLink project.

Year 1 or 2003 (Index of 1.0) coincides with the announcement of the EastLink project, while Year 10 or 2012 represents the last year of the study period.

## Comparison - Industrial Land Growth Rates

% CHANGE IN ANNUAL LAND VALUES OVER PROJECT PERIOD (2003-2012)

CHART 80



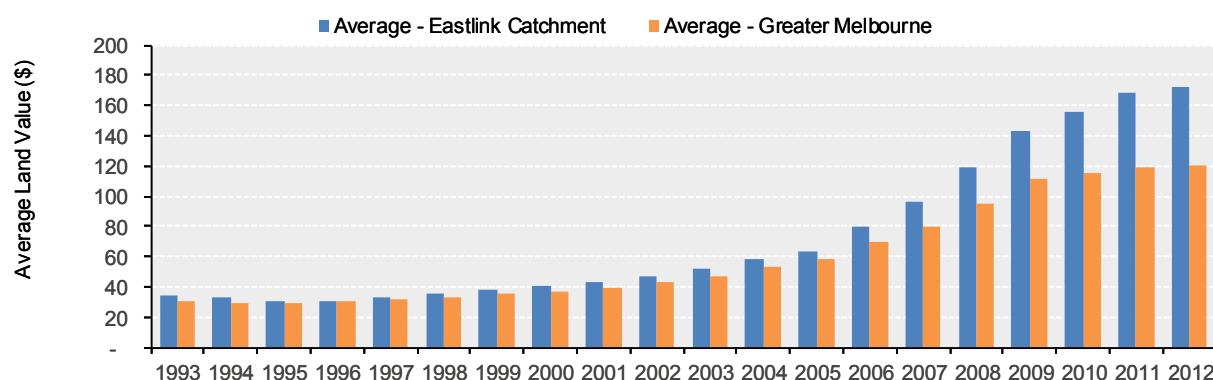
Source : Local Government Authorities (LGA)

As shown in Chart 80 above land value growth for the EastLink Catchment trended in line with Greater Melbourne Industrial before escalating at a greater rate from 2006 (1 year post construction commenced) to 2008 and thereafter sustaining consistently higher growth.

## Comparison - Average Land Values (\$/m<sup>2</sup>)

AVERAGE LAND VALUES (\$/m<sup>2</sup>) - Eastlink Catchment Vs. Greater Melbourne Industrial

CHART 81



Source : Local Government Authorities (LGA)

Chart 81 shows a comparison of average land values (\$/m<sup>2</sup>) over the study period for each basket of properties.

It is important to note that the suburbs that constitute the EastLink Catchment are generally higher value suburbs by comparison to the Greater Melbourne average, as evidenced in the latter half of the below chart. Nonetheless the chart illustrates the improved rate of growth evident from the construction of EastLink.

We highlight that for this comparison to be highly accurate a greater number of sample properties is required to be analysed.

### 6.2.7 SUMMARY

In concluding our estimate of the beneficial impact of the EastLink infrastructure on surrounding industrial land values, we have had regard to certain project, planning and market timing milestones i.e. critical phases over the 20-year study period.

Our analysis is focused on both annual land value growth rate trends and changes in historic land values, concluding by noting the percentage change in the respective land value baskets on a pro-rata percentage basis (i.e. the average value of the EastLink Catchment as a percentage of the Greater Melbourne Industrial land value average).

As found in classic economic theory - transportation improvements and the addition of new transport infrastructure will positively impact on the value of surrounding land. The extent of impact will vary and greatest impact is often reserved for those sectors that rely most heavily on transport.

As such the industrial market is considered to have experienced the greatest level of commercial benefit from the EastLink tollway. Whilst the broader Melbourne industrial property market experienced strong market activity during the early and mid 2000's which led to sustained growth in land values (average growth of circa 12% per annum), the GFC of 2008 significantly curtailed growth and transactional activity over the ensuing years (2008- 2012).

Analysis of industrial land value movements in both the Greater Melbourne and EastLink catchment areas supports the theory that economic and employment drivers principally influence land values, whereby positive land value growth is experienced in strong economic times, whilst limited or negative growth is experienced during weak economic conditions.

Nonetheless, a closer review of land value movements during the EastLink project period, being 2003-2008, suggests that values within the EastLink Catchment escalated more quickly during this period, particularly during the construction phase of the project. Additionally, the EastLink Catchment has consistently achieved higher growth for the operational period following construction (operational period), during a period of limited to no land value appreciation.

Limited to no growth premium appears to have occurred prior to this date. The EastLink Catchment has however continued to achieve above average growth post completion of the tollway in 2008, even despite weak economic and market conditions. We note that our statistical baskets comprise of serviced and appropriately zoned industrial assets, hence no speculative en-globo lands are captured which may distort the outcomes.

### Comparison Matrix - Infrastructure Impact on EastLink Catchment Land Values

POSITIVE LAND VALUE AND GROWTH DIFFERENTIALS (1993-2008) EXHIBITED BY EASTLINK INFRASTRUCTURE

TABLE 38

	1993-2002 Years prior to Eastlink, general route is known, EIS	2003-2004 Project approval and tender process	2005-2008 Construction period (March 2005 to June 2008)	2009-2012 Eastlink in operation (includes GFC impact)	1993-2008 Differential increase from Eastlink route ID to completion of construction	1993-2012 20-year timeline average
EastLink Catchment Average Land Value (\$/m2)	\$37	\$55	\$90	\$160	\$52	
Greater Melbourne Average Land Value (\$/m2)	\$34	\$50	\$76	\$116		
<b>Pro-rata Comparison of Land Values</b>	<b>109%</b>	<b>110%</b>	<b>118%</b>	<b>137%</b>		
<b>Infrastructure Provision % Change Benefit from 1993-2000</b>						<b>26.42%</b>
Eastlink Catchment Annual Land Value Growth Rate	6.06%	12.27%	20.11%	5.95%	10.35%	9.47%
Greater Melbourne Annual Land Value Growth Rate	4.66%	11.67%	17.35%	2.22%	8.71%	7.41%
<b>Eastlink Annual Growth Differential (inclusive of CPI)</b>	<b>1.40%</b>	<b>0.60%</b>	<b>2.77%</b>	<b>3.73%</b>	<b>1.64%</b>	<b>2.06%</b>
<b>Economic Indicators</b>						
CPI (Melbourne)	2.55%	2.27%	2.97%	2.53%	2.62%	2.60%
Gross State Product (Victoria)	3.95%	3.80%	3.30%	2.00%	3.79%	3.43%

Source : Urbis

Table 38 above identifies that the strongest industrial land value uplift within the immediate Eastlink Catchment attributable to the motorway infrastructure has appeared to have happened once the motorway has been in operation (i.e. pro-rate land value has risen from 118% of that of Greater Melbourne during construction to 137% of that of Greater Melbourne during the operational timeline).

Accordingly it appears that, on a land value basis, the relative land value parity of Eastlink tollway compared to that of Greater Melbourne from the early 1993- 2002 period to the later 2009- 2012 period has increased from 109% to 137%.

This appears to indicate that the Eastlink motorway infrastructure provision and operation has lifted the infrastructure catchment's original land value parity figure by 26.42%. As indicated, the majority of the value uplift appears to have occurred during the 2009- 2012 operational period post construction.

Eastlink's average annual capital growth rate over the time series is 9.47% per annum, exceeding the long-term capital growth rate for that of Greater Melbourne by 2.06%.

## 6.3 BRISBANE'S M1 MOTORWAY



Source : Google Images

### 6.3.1 OVERVIEW

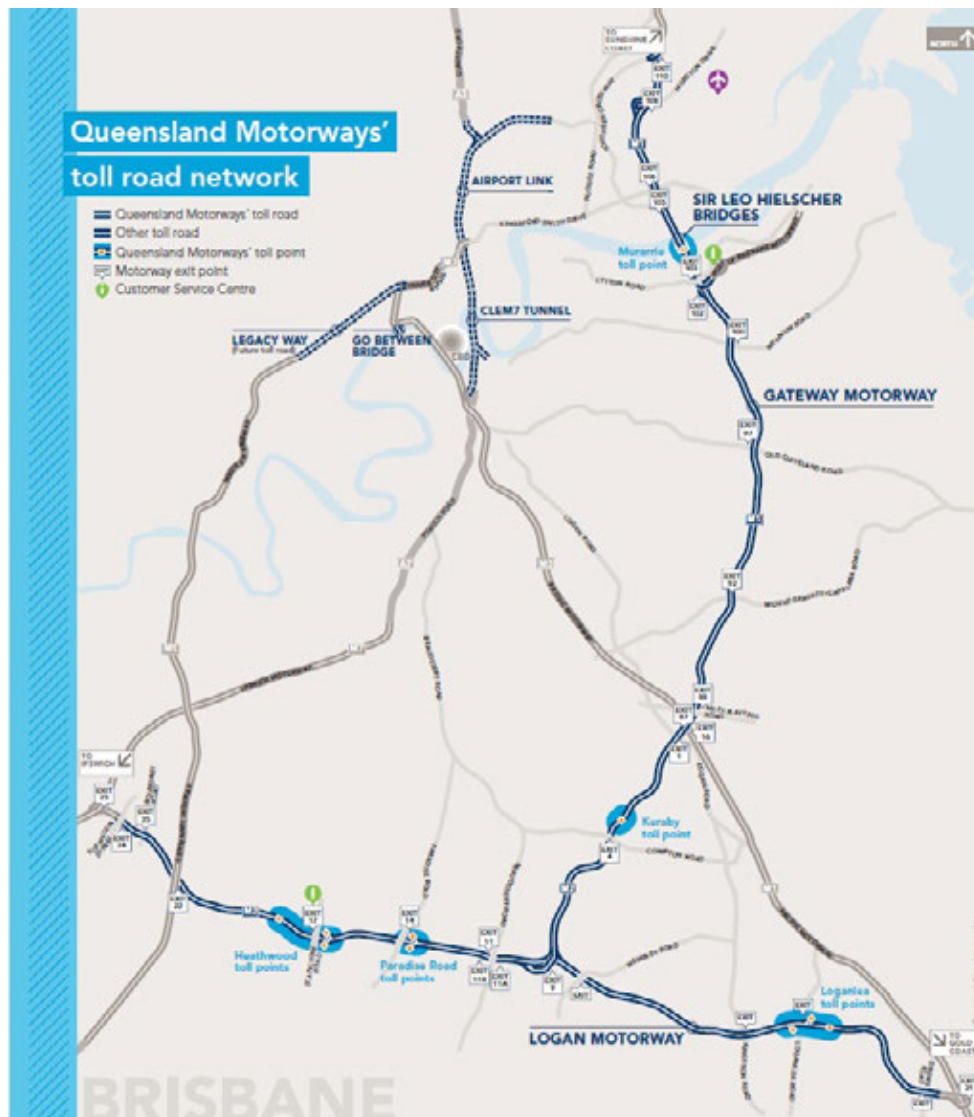
The M1 motorway (also known as “Gateway Motorway”) is a 29 kilometre dual carriageway linking the M2 (Logan Motorway) and M1 (Pacific Motorway north/south) motorways in eastern Brisbane.

The roadway is a major north/south connector, linking one side of the city to the other, and enabling through traffic from outside of Brisbane to avoid the need to enter the inner city area of Brisbane. The motorway also services as a major connector for the Brisbane Airport and Port of Brisbane.

The motorway was originally constructed as a single carriageway arterial road and was called the Gateway Arterial Road. In August 2011 as part of the Gateway Upgrade Project to upgrade the road to motorway standard, the Gateway Arterial Road was re-opened and renamed the M1 Gateway Motorway. There are 10 interchanges along the route including the upgraded interchanges for the Brisbane Airport and the M4 Port of Brisbane Motorway.

The M1 is a cashless, free-flow electronic tollway with no toll booths. Tolls are collected using electronic tags or via number plate recognition. Tolling charges are based on a point to point system with a trip extending from the Gympie Arterial Road in the north to the Kuraby Interchange in the south costing between \$3.23 and \$17.02 depending on the class of vehicle. All tolls are inclusive of GST and are increased annually to CPI (Brisbane).

The M1's alignment is below.



### 6.3.2 HISTORY

The M1 Gateway Motorway originated out of the Gateway Arterial Road which was originally designed and constructed over an 8-year period between 1978 and 1986. The Gateway Bridge (renamed Sir Leo Hiescher Bridge) provided Brisbane with a third river crossing to meet the demands of the growing population base with the existing Captain Cook and Story bridges nearing full capacity. In 1978, the Queensland Government called for tenders to finance, design, construct, operate and maintain a tunnel or bridge and associated approaches across the Brisbane River.

A site between Eagle Farm in the north and Queensport in the south (now known as Murarrie) was identified. This location was chosen to service the industrial areas in the eastern section of the city, as well as Brisbane Airport and the port facilities at Fisherman Island. The Bridge would also form part of the city bypass for traffic destined for the Pacific and Bruce Highways.

In June 1980 the bridge construction contract was awarded, with the project being completed in December 1986. The Gateway Arterial Road was only constructed to an arterial grade road standard and was predominately a single carriageway extending ending the Gympie Arterial Road in the north to the Pacific Highway in the south. Between 1991 and 1995 sections of the road were duplicated to four lanes.

On 16 December 2003 an Initial Advise Statement was lodged with the Department of State Development and Innovation and the Gateway Upgrade Project was declared on 22 December 2003 as a significant project pursuant to Section 26 of the State Development and Public Works Organisation Act 1971. The project was referred to the Commonwealth Government under the *Environment Protection and Biodiversity Conservation Act* 1999 and on the 12 February 2004 the Commonwealth Minister for the Environment and Heritage determined that the Gateway Upgrade Project did not constitute a controlled action pursuant to Act.

The Gateway Upgrade Project Environment Impact Statement was approved for release and distributed to Advisory Agencies on 23 August 2004 and in 2005 the project was formally announced with the key components as follows:

- Duplication of the Sir Leo Hielscher Bridge (formerly the Gateway Bridge), doubling vehicle capacity with a total of 12 lanes across the Brisbane River;
- Refurbishment of the original six lane bridge;
- A new pedestrian and cycle way, including four viewing platforms looking east to Moreton Bay;
- 7 kilometres of new motorway north of the bridges to Nudgee Road, including enhanced access to the Brisbane Airport;
- 12 kilometres of new lanes and upgrades south of the Brisbane River between Lytton Road and Mt Gravatt-Capalaba Road;
- Improved access and connection to the M4 Port of Brisbane Motorway; and
- Free-flow electronic tolling and Intelligent Transport Systems (ITS) to improve traffic flow and better manage capacity.

In September 2006 the Leighton Abigroup Joint Venture was awarded the design, construct and maintenance contract for the project with construction starting in 2007. The M1 was opened for traffic in November 2010 after the refurbishment of the original bridge was completed.

### 6.3.3 OPERATIONAL PROFILE

Queensland Motorways Pty Limited commenced its operations as the Gateway Bridge Company in 1980. In 1995, the government owned Queensland Motorways Limited was established to operate the Sir Hielscher Bridges, the Logan Motorway and the Gateway Extension. In 2011 the State Government transferred ownership of Queensland Motorways Limited to the State's Defined Benefit Fund as managed by QIC Limited. Queensland Motorways Limited operates these toll roads under a 40-year Road Franchise Agreement with the concession ending in 2051.

For the year to 30 June 2010 the reported annual number of trips was 34,252,000 or a daily equivalent to 93,841 trips. Based on information on the Queensland Motorways website the current vehicle count for the M1 Gateway Motorway is currently over 100,000 vehicles per day.

### 6.3.4 BASE CASE STUDY METHODOLOGY

The objective of this case study is to examine the effect of the M1 motorway infrastructure on surrounding land values and relevant associated industrial precincts.

Given that the M1 Gateway Upgrade Project was mooted in 2003 we have adopted a 12-year time series using a basket of appropriately zoned industrial properties within the M1 "catchment" (being Hemmant and Lytton) and a basket of industrial properties in "Greater Brisbane" as a base case (being industrial properties located within the traditional industrial precincts of Brisbane including the Inner South, North and West).

Our approach is to use running annual statutory land value assessments for each property within the basket as a proxy for the unimproved/site land value. This allows us to identify annual changes in notional value caused by economic circumstances, major planning initiatives and importantly the planning and construction delivery timetable of the M1 Gateway Upgrade Project itself.

Our Greater Brisbane basket is intended to be representative of the wider Brisbane industrial market excluding the M1 Catchment, and includes high value/high growth properties in Brisbane's inner south (e.g. Archerfield) off-set by low value/lower growth properties in Brisbane's outer west (e.g. Wacol).

Some properties in the Greater Brisbane basket already have values reflecting their location close to nearby motorway infrastructure (e.g. Wacol with the Ipswich Motorway) but such infrastructure was constructed prior to that of the M1. The Greater Brisbane basket therefore does not necessarily have a direct value benefit created by the M1 infrastructure, and becomes our base case.

Further, aware that industrial land value growth is typically a function of supply and demand, employment growth and GSP, our use of a basket of already zoned and serviced properties in established areas provides annual value movements that intrinsically captures these value drivers. Regardless, our land value growth charts also identifies CPI (Brisbane) as a proxy for an investor's minimum required land value growth expectations.

Our statutory land value assessments have been sourced from the Queensland Valuer Generals Office who track, and make available, long-term running annual statutory valuations for certain representative properties that are unchanged from 1989.

### 6.3.5 LAND VALUE CHANGES CREATED BY THE M1 GATEWAY UPGRADE PROJECT

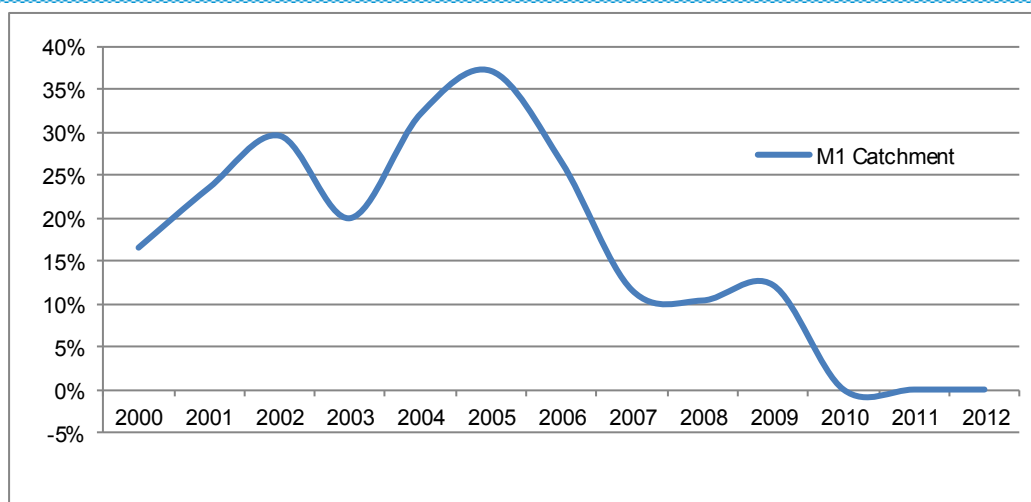
We firstly examined the rolling annual statutory value changes for industrial land (average 20,000m<sup>2</sup>) within our M1 Catchment basket, commonly refer to as the Australian Trade Coast precinct.

Chart 82 below indicates the sustained positive growth for industrial land values within the M1 catchment area throughout the period between 2000 and 2009 before growth falls away from 2010 onwards due to the global financial crisis and tougher economic conditions experienced in QLD including the 2011 natural disasters and weakening demand for coal. Notable rapid escalations in land values from 2003 to 2006 averaged 30% per annum and corresponded with the planning and announcement stage of the Gateway Upgrade Project.

#### M1 Catchment - Rolling Annual Growth Rates (pa)

% CHANGE IN ANNUAL LAND VALUES 2000-2012

CHART 82



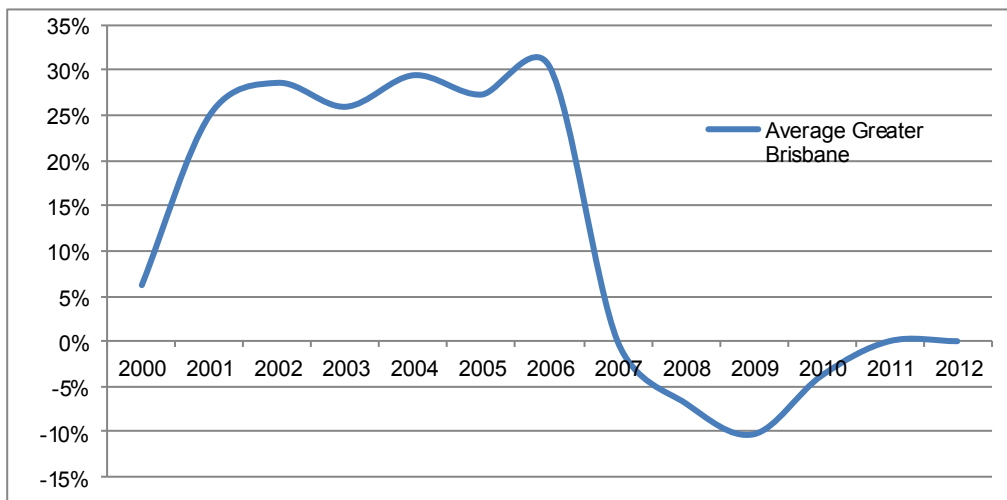
Source: QLD Valuer General and Urbis

Chart 83 for Greater Brisbane industrial, in comparison, generally shows the same trend lines between 2000 and 2007 but after the impact of the GFC showed negative growth between 2008 and 2011.

## Greater Brisbane - Rolling Annual Growth Rates (pa)

% CHANGE IN ANNUAL LAND VALUES 2000-2012

CHART 83



Source: QLD Valuer General and Urbis

### 6.3.6 STUDY OUTCOMES

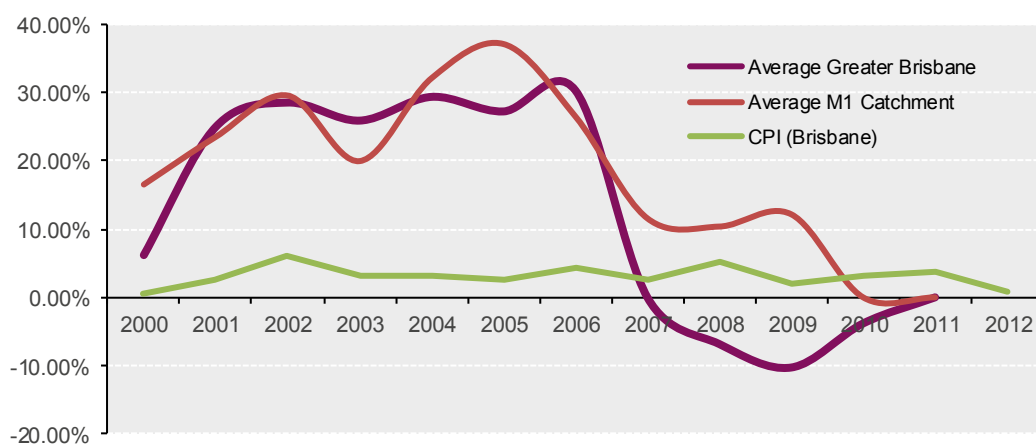
Chart 84 below illustrates analysed average growth rates for the M1 Catchment and Greater Brisbane areas for the study period, with CPI (Brisbane) provided as a reference point.

Clearly the M1 Catchment is experiencing beneficial value growth patterns over the planning, construction and delivery of the Gateway Upgrade Project between 2003 and 2010. The average annual growth over this period was 22% as compared to the wider Brisbane industrial market of 16%.

## Comparison - Industrial Land Growth Rates and CPI

INDUSTRIAL LAND VALUATIONS - M1 CATCHMENT VS GREATER BRISBANE 2000-2012

CHART 84



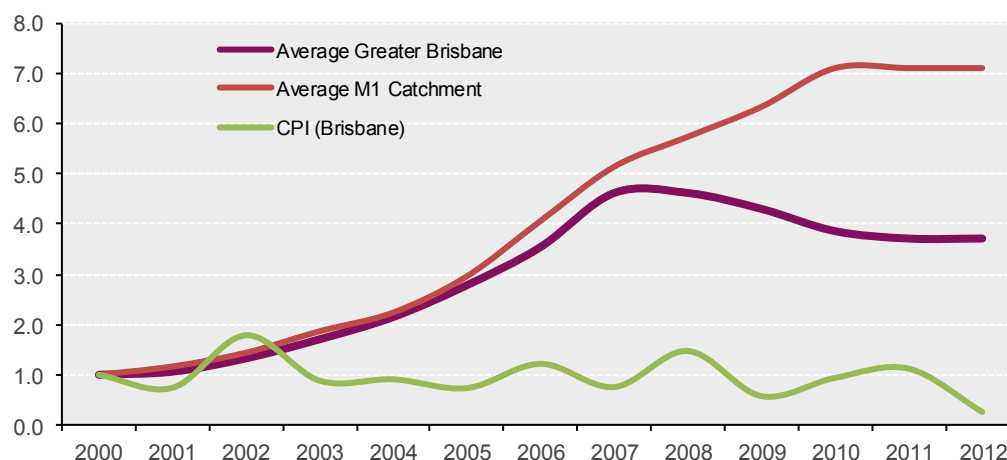
Source: QLD Valuer General and Urbis

This is also exhibited by the following indices analysis (Chart 85).

## Comparison - Land Value Indices and CPI

INDUSTRIAL LAND INDICES AND CPI - M1 CATCHMENT, GREATER Brisbane 2001-2012

CHART 85



Source: QLD Valuer General and Urbis

With regard to the indices analysis both property baskets feature strong sustained capital growth from the period 2001- 2007 when the property sector was extremely active by virtue of plentiful and cheap debt, and artificial demand – and before the impact of the GFC in 2008.

However during the planning stage of the Gateway Upgrade Project, between 2003- 2006, the M1 Catchment exhibited 2% higher annual growth rate than the Greater Brisbane area with this difference increasing to 12% over the construction period between 2007- 2010.

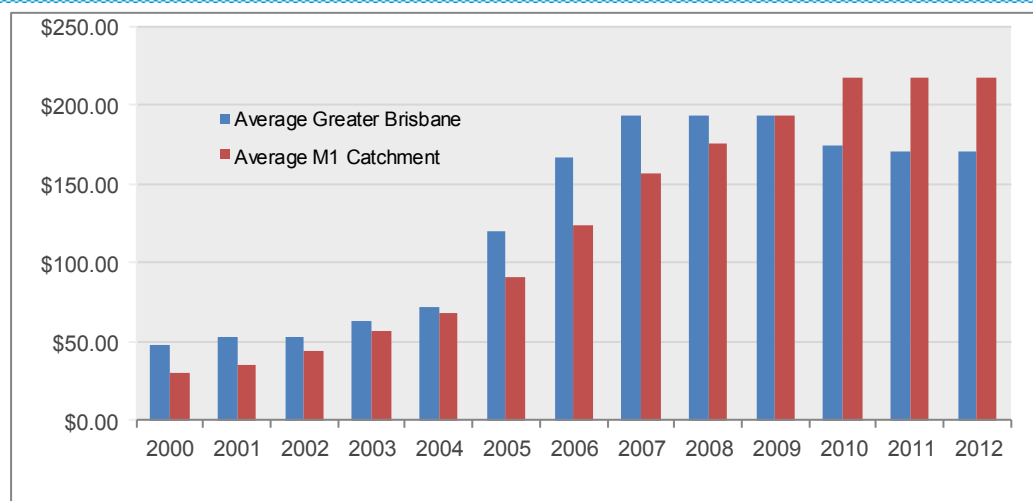
Since the November 2010 opening the M1 Catchment area industrial land values have remained flat whereby the Greater Brisbane area has fallen by a further 4%.

Chart 86 below shows a comparison of average land values (\$/m<sup>2</sup>) over the study period for each basket of properties.

## Comparison - Average Land Values (\$/m2)

AVERAGE LAND VALUES (\$/M2) - M1 CATHMENT VS GREATER BRISBANE 2000-2012

CHART 86



Source: QLD Valuer General and Urbis

We highlight that for this comparison to be highly accurate a greater number of sample properties would be required to be analysed.

### 6.3.7 SUMMARY

In concluding our estimate of the beneficial impact of the M1 Gateway Upgrade Project on surrounding industrial land values, we note that we have had regard to certain project, planning and market timing milestones i.e. critical phases over the 12-year study period. Our analysis is focused on both annual land value growth rate trends and changes in historic land values, concluding by noting the percentage change in the respective land value baskets on a pro-rata percentage basis (i.e. the average value of the M1 Catchment as a percentage of the Greater Brisbane land value average).

In the period leading up to the announcement of the Gateway Upgrade Project between 2000- 2002 land values in the M1 Catchment area increased greater than the Greater Brisbane industrial market although this higher growth rate (23.23% per annum) corresponded with the opening up of the M4 Port of Brisbane Motorway which extended 4 kilometres from the Gateway Arterial Road to Lytton Road at Hemmant.

However serviced and appropriately zoned land in the M1 Catchment still had a much lower average value base than that of the Great Brisbane market (\$37/m<sup>2</sup> vs \$51/m<sup>2</sup> or 72.5% pro-rata value).

During the EIS and project approval period (2003- 2006) land values in the M1 Catchment area generally reflected the movement in the Greater Brisbane market with an annual increase of 28.24% as compared to 28.24%. This period represented a strong growth period for the Queensland economy with a relative shortage of appropriately zoned and serviced industrial land across the wider Brisbane market to service the growing demand for industrial accommodation.

Between 2007- 2012 including the construction and initial operational phase of the M1, the M1 Catchment area saw significant land value growth of 5.69% per annum, as compared to the Greater Brisbane area of -3.49% per annum. This period was impacted by the GFC with land values in the Greater Brisbane area falling by 21% between 2008- 2010. In comparison land values in the M1 Catchment area increased by 23% during the same period representing a pro-rata value of 107.4%.

### Comparison Matrix - Infrastructure Impact on M1 Catchment Land Values

POSITIVE LAND VALUE AND GROWTH DIFFERENTIALS (2000-2012) EXHIBITED BY M1 INFRASTRUCTURE

TABLE 39

	2000-2002 Years prior to M1 EIS	2003-2006 M1 EIS, project and approval	2007-2012 M1 Construction to operation (includes GFC impact)	2000-2012 Differential increase from M1 route ID to completion of construction
Greater Brisbane Average Land Value (\$/m <sup>2</sup> )	\$51	\$105	\$183	
M1 Catchment Average Land Value (\$/m <sup>2</sup> )	\$37	\$85	\$196	
<b>M1 Catchment Pro-rata Land Value</b>	<b>72.04%</b>	<b>80.96%</b>	<b>107.40%</b>	
<b>Infrastructure Provision %Change Benefit from 2000-2012</b>				<b>49.08%</b>
Greater Brisbane Annual Land Value Growth Rate	19.92%	28.24%	-3.49%	9.20%
M1 Catchment Annual Land Value Growth Rate	23.23%	28.96%	5.69%	15.00%
CPI (Brisbane)	3.10%	3.22%	2.94%	3.05%
<b>M1 Annual Growth Differential (inclusive of CPI)</b>	<b>3.31%</b>	<b>0.72%</b>	<b>9.19%</b>	<b>5.80%</b>

Source : Urbis

Finally, we conclude that strongest value uplift attributable to the motorway infrastructure within the immediate M1 Catchment has appeared to have happened once the construction of the motorway started through to its completion.

Accordingly it appears that, on a land value parity basis with Greater Brisbane, the M1 motorway infrastructure provision and operation between 2003- 2012 has lifted the infrastructure catchment's land value parity from the 2000- 2002 period by 49.08% i.e. the M1 Catchment land in the earlier period exhibited a value 72.04% of that of Greater Brisbane increasing to 107.4% once the motorway was operating.

The 49% value uplift appears to have primarily occurred during the 2006- 2012 period when the motorway was under construction and completed in comparison to the Greater Brisbane market which saw declining land values.

The background features a dark, textured area on the left that appears to be torn or layered over a bright blue background on the right. A dark blue diagonal band runs across the lower half of the image, containing the word 'CONCLUSIONS' in white capital letters. At the end of this band on the right side, there are three parallel white lines.

# CONCLUSIONS

This Urbis report examines historic urban land price movements in Sydney, Melbourne and Brisbane (East Coast Capital Cities), over long-term horizons, to demonstrate the potential opportunity cost savings for jurisdictions and therefore the overall community in the early acquisition (or protection) of infrastructure corridor land.

We have examined the long-term statutory land value growth trend for certain classes of residential, retail, industrial and rural residential zoned land within inner, middle and outer bands of each Capital City. The Land Use types adopted, we perceive, are those that are commonly acquired by jurisdictions for urban infrastructure corridors.

Our analysis has identified relatively strong, long-term land value capital growth performances by the Outer Zones (all land use types) of each Capital City in comparison to their respective Inner and the Middle Zones.

We anticipated strong demand fundamentals associated with a desire for inner city living, and limited land supply for retail and industrial land users, creating high performing rates of annual land value growth for the Inner Zones. However whilst Brisbane's Inner Zone overall average (9.53% per annum) only just exceeded that of its Outer Zone average (9.22% per annum), the Outer Zone long-term growth rates for both Sydney (6.42%) and Melbourne (8.49% per annum) exceeded their respective Inner Zones (particularly so for Sydney, and just so for Melbourne).

Our assessment as to why the Outer Zones for each Capital City over the study period have performed beyond expectations is that such locations have been coming off a particularly low value base, and then benefitting strongly with both infrastructure provision and cycles of economic sentiment (we note in particular the period between 2001- 2007).

The average annual land value growth rates for each urban Zone, for "all Land Use types", and for each Capital City are as follows:

## City by City Summary

### LONG TERM ANNUAL CAPITAL GROWTH RATE - ALL LAND USE CATEGORIES

	Inner Zone	Middle Zone	Outer Zone	20-year Growth Average	20-year CPI Average
Sydney	5.31%	5.34%	6.42%	5.69%	2.63%
Melbourne	8.47%	7.44%	8.49%	8.13%	2.60%
Brisbane	9.53%	7.86%	9.22%	8.87%	2.84%
<b>Overall East Coast Capital City Average</b>	<b>7.77%</b>	<b>6.88%</b>	<b>8.04%</b>	<b>7.56%</b>	<b>2.69%</b>

Source : Urbis

Case studies within this report also illustrate the beneficial collateral land value impact that can be provided by motorway infrastructure. The analysis indicates land values within a benefitting infrastructure catchment are likely to escalate above trend during the construction period (e.g. the M7 in Sydney) or during initial operation (e.g. the M1 in Brisbane). This is as opposed to when the route was first mooted and any associated land speculation.

Such conclusions are made by identifying the estimated land value uplift as a percentage change from the original infrastructure catchment land value, compared to that of the wider urban area, on a pro-rata basis.

Of the three motorways studied, there was infrastructure associated land value uplift ranging 21% (Sydney's M7 motorway) to 49% (Brisbane's M1 motorway) in percentage value pro-rata terms from when the infrastructure route was first announced/identified, to construction and operation.

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