

4143

Property Market Analysis

October 2015

**PERTH FREIGHT LINK
POTENTIAL URBAN
OUTCOMES:
SECTION TWO
ROAD OPTIONS**

EXECUTIVE SUMMARY

Our analysis and reporting is broken up into two options under consideration for **Section Two of the Perth Freight Link:** improving the surface road system (base case option) versus a tunnel option.

Studies were undertaken on five major road-related infrastructure projects across Australia as a basis for this report.

Headline results

Our headline result is that improving the **surface road system (base case option)** has a very positive impact on residential property values. Local values can lift by as much as 25% as a result.

Our work also shows a much higher increase in local values if traffic is diverted away from residential streets via a **tunnel**; with a potential uplift in residential values in the vicinity of 70% to 85%.

The timing for such uplift depends on the wider property cycle. Unless the overall city or region is improving, then the local area benefiting from the improved infrastructure does not seem to break the wider market influences. But over the longer term (usually ten or more years), there is quantitative evidence to show that values in the improved local areas rise higher than the city wide average, and therefore, more than in the absence of any local infrastructure improvements.

We conclude that the tunnel option is likely to have a much greater positive impact on local residential values than improving surface traffic routes.

We stress that current local end prices (which are high when compared to the Perth average), might not rise as much as our findings suggest. All of our case studies are based on infrastructure provision which took place many years ago, at a time when end price points were more affordable than today.

Also, in some cases, such as in the circumstances surrounding our Orrong Road case study, other factors may have influenced the proceeding uplift, including unique property rezoning that allowed for increased housing density and more non-residential development. Other factors in play include sewer and other urban utility improvements in the area, plus the development of the Burswood Peninsula.

We suggest, therefore, treating our revealed property value multipliers on the high range of any potential uplift and doing any base modelling on, say, 20% for substantially improved surface transport and 50% for a tunnel option.

Similar caution has been applied across our secondary findings as well.

These secondary findings are summarised overleaf.

Secondary findings

In addition, the **base case** option could:

- lift residential rents by 10%
- lift residential sales volumes by 20% to 25%
- lift the value of new housing starts and non-residential building by 15% to 20%
- reduce fatal road accidents by 50%

A **tunnel option** could:

- lift residential rents by 30%
- lift residential sales volumes and the value of new housing starts by 40% to 50%
- lift the value of non-residential building by 25% to 30%
- reduce fatal road accidents by 60% to 70%
- See 25% more population growth than the base case option

Both options have the potential to create more local jobs than would otherwise be the case.

REPORT PARAMETERS

Report parameters

Matusik Property Insights Pty Ltd (MPI) has been engaged by Main Roads Western Australia to provide analysis in relation to the potential effect/s of the Perth Freight Link on a range of urban outcomes.

Moreover, MPI has been asked to provide comparative analysis on the two options being considered for Section Two of the Perth Freight Link. These two options include a base case solution of improved surface road related infrastructure, versus a tunnel option.

See **pages 5 and 6** for more detail.

Case studies

Case studies were undertaken of five major road-related infrastructure projects across Australia. These include:

1. Perth – **Servetus Street** project.
2. Perth– Graham Farmer Freeway (**Orrong Road section**).
3. Brisbane – **Centenary Highway**.
4. Gold Coast – **Tugun Bypass**.
5. Sydney – **The Lane Cove Tunnel**.

Appendix 1 outlines each case study in more detail.

These studies derived a range of potential effects resulting from the provision of new surface road related infrastructure versus tunnel option including:

- **Real estate** – property values; rents; sales volumes; local values as at 2015; Perth market position and outlook
- **Demographics** – population growth; age profile; household structure; housing tenure; housing types
- **Developments** – housing approvals; new residential activity
- **Social** – local unemployment; reported motor vehicle fatalities

Our report is set out accordingly. How our tables work is explained on **page 8**.

Data sources

The most recent data sets were used for this report. The report was compiled in October 2015. Data sets include:

- Australian Property Monitors (APM)
- CoreLogic-RPData
- Qld RTA
- Housing New South Wales
- NSW, WA and Qld Police Service
- Australian Bureau of Statistics
- REIWA, REIQ and REINSW

- Google Maps
- Main Roads Western Australia

PERTH FREIGHT LINK

The project

The Perth Freight Link is the largest road infrastructure development of its kind ever undertaken in Western Australia.

This \$1.6 billion project will create a free-flowing freight connection between Perth's key industrial areas (including Kewdale, Welshpool and Canning Vale) and Fremantle.

Section One is a 5.2km extension of Roe Highway from Kwinana Freeway to just west of Coolbellup Avenue. The preferred proponent for this section was announced on 27th October 2015.

Section Two is a free flowing connection between Roe Highway and Stirling Highway south of Marmion Street. With contracts expected to be awarded by the end of calendar 2015.

Two options are being considered:

- 1. Base case (surface road system):**
Upgrading Stock Road through O'Connor and Willagee, with interchanges/flyovers at Winterfold Road, South Street and constructing a new four lane highway aside Leach Highway and High Street with flyovers at Carrington and Marmion Streets.
- 2. Tunnel option:** Running from the intersection of Stock and Winterfold Roads in the South East to Stirling Highway in the North West.

Our engagement and this report is focused on Section Two options.

See **Map on page 6** for road location and outline of our case study area.

Objectives

The Perth Freight link is expected to resolve two major problems:

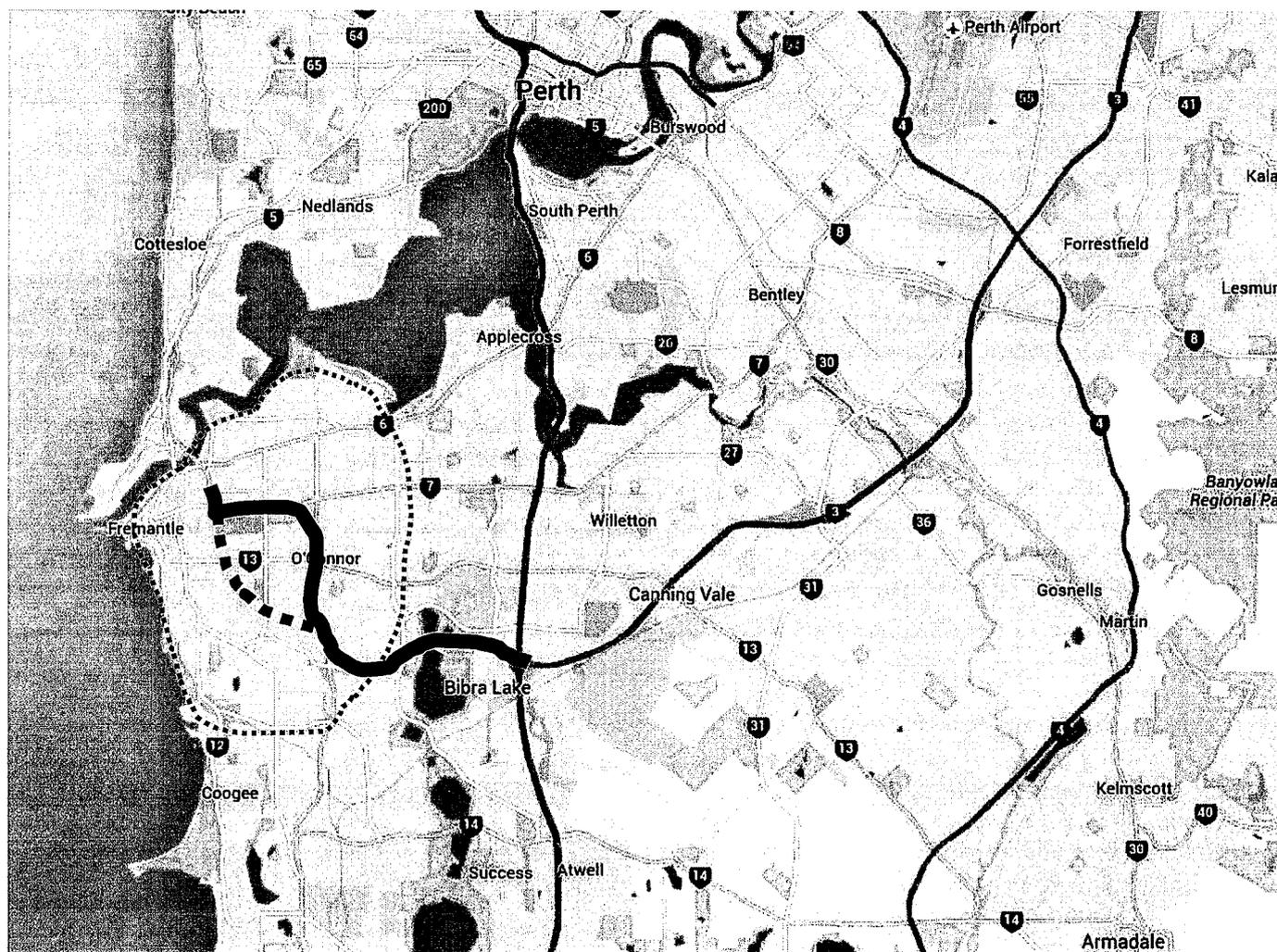
- The increase in vehicles that is negatively impacting public safety – highlighted by the higher than average number of crashes involving heavy vehicles in Perth's southern suburbs.
- The high volume of freight traffic along the Leach Highway, which is constrained by the large number of traffic lights – thus impeding travel times, reliability and productivity for the freight industry.

Select key Benefits

- 14 traffic lights bypassed.
- Shorter journey times for all motorists.
- An estimated 500 trucks per day removed from Leach Highway between Kwinana Freeway and Stock Road by 2031.
- Reduced operating costs for the transport industry, business and commuters through more free flowing traffic movement.
- Improved safety; reduced traffic congestion and noise; lower emissions.

Perth Freight Link

Locational map and case study area



-  Section One
-  Section Two – Base case
-  Section Two – Tunnel option
-  Case study area

Section Two case study area comprises:

East Fremantle, Fremantle, White Gum Valley, Palmyra, Melville Willagee, O'Connor, Samson and Hilton.

LOCAL DWELLING VALUES

The suburbs affected by Section 2 of the Perth Freight Link (which include East Fremantle, Fremantle, White Gum Valley, Palmyra, Melville, Willagee, O'Connor, Samson and Hilton) currently (as at June 2015) have an estimated gross value (in terms of residential real estate) of approximately \$16,950,000,000. (Just under \$17 billion).

There are 23,600 dwellings in this area, with a median dwelling value of \$718,000 (\$810,000 for detached houses and \$510,000 for attached dwellings). There are 16,600 detached houses in the area and 7,000 apartments/townhouses. The average price of a detached house in Perth is currently \$520,000.

1. Local dwelling values (June 2015)

Section 2 Perth Freight Link

Local suburbs	Number of residential properties	Median price as at 2015	Estimated property value	Estimated total house value
Detached houses	16,633			\$13,399,015,000
East Fremantle	1,927	\$1,180,000	\$2,273,860,000	
Fremantle	3,003	\$815,000	\$2,447,445,000	
White Gum Valley	949	\$750,000	\$711,750,000	
Palmyra	2,037	\$705,000	\$1,436,085,000	
Melville	4,973	\$847,000	\$4,212,131,000	
Willagee	1,602	\$617,000	\$988,434,000	
O'Connor	115	\$590,000	\$67,850,000	
Samson	715	\$700,000	\$500,500,000	
Hilton	1,312	\$580,000	\$760,960,000	
Attached dwellings	6,967			\$3,548,774,000
East Fremantle	882	\$540,000	\$476,280,000	
Fremantle	3,041	\$524,000	\$1,593,484,000	
White Gum Valley	261	\$565,000	\$147,465,000	
Palmyra	970	\$450,000	\$436,500,000	
Melville	1,075	\$475,000	\$510,625,000	
Willagee	432	\$565,000	\$244,080,000	
O'Connor	32	\$410,000	\$13,120,000	
Samson	96	\$565,000	\$54,240,000	
Hilton	178	\$410,000	\$72,980,000	
Total dwellings	23,600			\$16,947,789,000

Data sources: Australian Bureau of Statistics and REIWA.

UNDERSTANDING THE DATA

Our findings have been displayed in a series of short tables. Each contains our five case study areas, which are grouped together by either surface road improvements (potentially relevant to Section Two's base case scenario), or potential tunnel outcomes.

In most cases, our summary tables consist of five columns, outlining our key findings.

These are explained below.

1. **Each case study road project.**
See **Appendix 1** for more detail on each project.
2. **Circumstances before or leading up to the opening** of the selected road project in question.
3. Select indicator as it is either in **financial 2015 or in recent years leading up to 2015.**
4. **The magnitude of change in the select indicator** between now and prior to the road improvement.
5. Our key finding (column 4) **compared with the relevant city wide trend** over the same time period.

1. Potential impact on residential property values

Select road project case studies

Road project	Median house price prior to road project	Median house price as at 2015	Change since road project opening	Change compared to wider average
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Surface road improvements Average 22%

Servetus Street	\$394,000	\$1,606,000	308%	17%
Orrong Road	\$168,000	\$611,000	264%	26%
Centenary Hwy	\$296,000	\$438,000	48%	24%

Tunnel/Bypass road improvements Average 78%

Tugun Bypass	\$425,000	\$518,000	22%	69%
Lane Cove Tunnel	\$753,000	\$1,523,000	102%	86%

All figures as at financial 2014/15.

See **Appendix 1** for more details about each road project.

Data sources: REIWA, CoreLogic-RPData; REIQ; REINSW and APM.

PROPERTY MARKET VALUES

Our analysis shows that improving the **surface road system** (i.e. proposed base case for Section Two) has a very positive impact on residential property values over the longer term.

Our work shows that end values can lift between 17% and 26% when compared to the wider city average.

Our work also shows a substantially higher increase in local residential values if heavy and/or through traffic is diverted away from residential streets via a **tunnel**. The potential uplift in residential values, again over the longer term, can be in the vicinity 69% to 86%.

The tunnel option is likely to have a much greater positive impact on local residential values than just improving surface traffic routes. A 70% to 85% lift in values, over, say, a ten year period after completion of a tunnel, is possible. Major surface improvements could also see local residential values lift by up to 25% over the longer term.

We suggest that our multipliers should be treated on the high range of any potential uplift. **In might be best to do any base modelling on, say, 20% for substantially improved surface transport (i.e. base case option for Section Two), and 50% for a tunnel option.**

2. Potential impact on residential property values

Select road project case studies

Road project	Median house price prior to road project	Median house price as at 2015	Change since road project opening	Change compared to wider average
Surface road improvements			Average	22%
Servetus Street	\$394,000	\$1,606,000	308%	17%
Orrong Road	\$168,000	\$611,000	264%	26%
Centenary Hwy	\$296,000	\$438,000	48%	24%
Tunnel/Bypass road improvements			Average	78%
Tugun Bypass	\$425,000	\$518,000	22%	69%
Lane Cove Tunnel	\$753,000	\$1,523,000	102%	86%

All figures as at financial 2014/15.

See **Appendix 1** for more details about each road project.

Data sources: REIWA, CoreLogic-RPData; REIQ; REINSW and APM.

RESIDENTIAL RENTS

Our analysis also shows that improving the **surface road system** (i.e. proposed base case for Section Two) has a very positive impact on local residential weekly rents over the longer term.

Our work shows that end values can lift between 13% and 42% when compared to the wider city average.

Our work also shows a substantially higher increase in local residential weekly rents if heavy and/or through traffic is diverted away from residential streets via a **tunnel**. The potential uplift in residential values, again over the longer term, can be in the vicinity 37% to 43%.

The tunnel option is likely to have a much greater positive impact on local residential weekly rents than just improving surface traffic routes. A 35% to 40% lift in values, over, say, a ten year period after completion of a tunnel is possible. Major surface improvements could also see local residential values lift by up to 20% over the longer term.

Again, as we suggested when it came to property values, our rental multipliers should be treated on the high range of any potential uplift. **We suggest using 10% for the base case option for Section Two of the Perth Freight Link and 30% for a tunnel option.**

3. Potential impact on residential rents

Select road project case studies

Road project	Average house rent/wk prior to road project	Median house rent/wk as at 2015	Change since road project opening	Change compared to wider average
Surface road improvements			Average	24%
Servetus Street	\$245	\$730	198%	42%
Orrong Road	\$205	\$430	110%	18%
Centenary Hwy	\$215	\$350	63%	13%
Tunnel/Bypass road improvements			Average	40%
Tugun Bypass	\$300	\$475	58%	43%
Lane Cove Tunnel	\$455	\$825	81%	37%

All figures as at financial 2014/15.

See **Appendix 1** for more details about each road project.

Data sources: REIWA, Qld RTA and Housing New South Wales.

RESIDENTIAL SALES VOLUMES

The impact of local road improvements is less clear-cut on sales volumes than it appears to be for property values and weekly rents.

Our study of surface road improved areas, suggests that sales volumes lifted between 21% and 35% after the improved road opened. However, at best, these lifts in the number of properties being traded is in line with, or just marginally, more than what has taken place over the wider city area over the same time period.

As explained on page 12, when any uplift in values, rents or even sale volumes actually occurs, depends on the wider property cycle.

This can be clearly seen with the Tugun Bypass results, as the Gold Coast property cycle has been in a downturn/stagnation phase for much of the time since the bypass opened in 2008. The Gold Coast property market has only started to recover.

However, sales in the Lane Cove case study area have lifted substantially (81%) since the tunnel opened.

Again, we suggest some caution. **It might be best to expect a 20% to 25% lift in sales volumes as a result of the base case option, and a 40% to 50% lift in sales (both over the long term) for a tunnel.**

4. Potential impact on residential sales volumes

Select road project case studies

Road project	Annual sale volume prior to road project	Recent annual sales volumes 2010-2015	Change since road project opening	Impact compared to wider average
Surface road improvements			Summary	some impact
Servetus Street	360	470	31%	some impact
Orrong Road	490	595	21%	little impact
Centenary Hwy	475	639	35%	some impact
Tunnel/Bypass road improvements			Summary	big impact
Tugun Bypass	1,530	1,445	-6%	no impact
Lane Cove Tunnel	849	1,539	81%	big impact

All figures as at financial 2014/15.

See **Appendix 1** for more details about each road project.

Data sources: REIWA, CoreLogic-RPData; REIQ; REINSW and APM.

PROPERTY CYCLE INFLUENCE

When any uplift in our property indicators actually occurs – as shown in all five of our case studies – **depends on the wider property cycle.** Unless the overall city or region is improving, then the local area benefiting from the improved infrastructure does not seem to break the wider market influences. But over the longer term (usually ten or more years), there is quantitative evidence that shows that

property indicators in the improved local areas rise higher than the city wide average – and therefore more than if no infrastructure improvements had occurred.

The Perth residential market is in the downturn phase of its property cycle. It could be several years, maybe longer, before the Perth market starts to enter a housing market recovery again.

5. Select property cycle indicators

Perth Metropolitan Area

Financial years	Annual change in dwelling sales	Annual change in median price	Estimated vacancy rate	Position in property cycle
1997	1,149	4%		
1998	1,790	8%		
1999	2,583	5%		
2000	6,395	7%		
2001	2,208	4%		Recovery
2002	4,115	12%		
2003	298	13%	4.5%	
2004	3,258	16%	3.3%	
2005	1,177	17%	2.5%	
2006	-92	38%	2.3%	Upturn
2007	-12,951	13%	2.1%	
2008	-611	-1%	3.2%	Downturn +
2009	1,096	-3%	3.5%	Stagnation
2010	1,792	12%	4.3%	
2011	-6,162	-7%	3.4%	
2012	3,307	1%	2.0%	Recovery +
2013	4,839	10%	3.3%	Upturn
2014	-317	4%	4.2%	
2015	-3,600	-1%	4.7%	Downturn

Data sources: REIWA.

POPULATION GROWTH

Road improvements seem to have little real influence on local population growth unless new development areas are opened up or rezoned to encourage more urban development.

That has been the case in the Orrong Road area, in the southern suburbs near the Centenary Highway extension and also in northern New South Wales (Tugun Bypass).

Where development sites are scarce and/or local town planning restrictive, road improvements (for both surface solutions or tunnels/bypasses) have little impact on the local population count.

However, if the road improvements being considered in Section Two of the Perth Freight Link were to be accompanied by a progressive town planning agenda and brownfield redevelopment, then the local area is likely to see a lift, and maybe a large one, in local residents. This is more likely so, than if such urban gentrification was contemplated without major local road improvements.

So, assuming local urban gentrification takes place, then the local population would lift more via a tunnel than the base case option. This differential could be as high as 25%.

6. Potential impact on population growth

Select road project case studies

Road project	Total pop prior to road project	Total population 2015	Change since road project opening	Impact compared to wider average
Surface road improvements			Summary	some impact
Servetus Street	64,500	72,500	12%	little impact
Orrong Road	52,750	74,750	42%	some impact
Centenary Hwy	105,000	137,000	30%	some impact
Tunnel/Bypass road improvements			Summary	little impact
Tugun Bypass	93,000	125,000	34%	some impact
Lane Cove Tunnel	119,750	132,750	11%	little impact

All figures as at financial 2014/15.

See **Appendix 1** for more details about each road project.

Data sources: Australian Bureau of Statistics.

SELECT DEMOGRAPHICS

Again, if a local road improvement is accompanied by appropriate planning policies, then more urban development takes place. This takes time to eventuate and more often than not results in higher residential densities in the form of townhouses; duplexes and apartments.

Local road improvements, especially those which facilitate faster travel times, seem to attract a younger demographic profile.

Overall, there appears to be little change in the local household structure (i.e. the

proportion of couples, families or single person households), as a result of road improvements, tunnels or otherwise. It appears that more younger families or couples move into an area, rather than just more couples at the expense of, say, families.

Housing tenure changes show mixed results. In summary, more renters should be expected, due to road improvements.

In short – more medium density; younger residents and more renting.

7. Potential impact on local demographics

Select road project case studies (since each opening)

Road project	Age profile	Household Structure	Housing tenure	Housing type
Surface road improvements				
Servetus Street	little impact	little impact	more owners, fewer renters	more apartments
Orrong Road	more younger people	more couples and singles	little impact	little impact
Centenary Hwy	more younger people	little impact	more renters	more townhouses
Tunnel/Bypass road improvements				
Tugun Bypass	more younger people	more families	more renters	more townhouses
Lane Cove Tunnel	little impact	little impact	little impact	more apartments

All figures as at financial 2014/15.

See **Appendix 1** for more details about each road project.

Data sources: Australian Bureau of Statistics.

DWELLING APPROVALS

We need to exclude Orrong Street and Tugun Bypass from our analysis of both housing and non-residential starts.

Orrong Street appears 'out of line' and must have been influenced by external factors. Being adjacent to the Perth CBD could have seen events influence the value of new housing starts beyond the local road improvement.

In contrast, the wider Gold Coast/Northern NSW market downturn – as outlined earlier – has negatively influenced the value of local housing starts in the Tugun Bypass case study area.

So when scaling back our sample to three road projects, we see a big change in the value of new housing being built in an area due to local road improvements.

For surface road improvements, this value uplift ranges from 17% to 39%. In the Lane Cove Tunnel case study area, it has been 139%.

Again, we suggest some caution with these base figures. **It might be best to expect a 15% to 20% lift in the value of new housing starts as a result of the base case option, and a 40% to 50% lift in new housing values (both over the long term) for a tunnel.**

8. Potential impact on new dwelling approvals

Select road project case studies

Road project	Annual avg prior to road project (\$m)	Recent annual avg 2010-2015 (\$m)	Change since road project opening	Change compared to wider average
Surface road improvements			Average	28%
Servetus Street	\$269	\$595	121%	39%
Orrong Road	\$190	\$810	326%	278%
Centenary Hwy	\$259	\$365	41%	17%
Tunnel/Bypass road improvements			Average	139%
Tugun Bypass	\$175	\$210	20%	-43%
Lane Cove Tunnel	\$167	\$331	98%	139%

All figures as at financial 2014/15.

See **Appendix 1** for more details about each road project.

Averages exclude Orrong Road and Tugun Bypass.

Data sources: Australian Bureau of Statistics.

NON-RESIDENTIAL ACTIVITY

How much non-residential development takes place after a local road improvement is also subject to site availability and land use zoning.

But improving local traffic conditions does seem to attract more new retail, restaurants and office premises. The lift in local non-residential approvals appears higher in areas which have undergone road improvements than the wider city average.

For surface road improvements, this value uplift ranges from 16% to 30%. In the Lane Cove Tunnel case study area it has been 33%.

Again, our caveat – as outlined on the previous page – applies here.

And we also suggest some caution with these base figures. **It might be best to expect a 15% to 20% lift in the value of new housing starts as a result of the base case option and a 25% to 30% lift in non-residential building values (both over the long term) for a tunnel.**

9. Potential impact on new non-residential activity

Select road project case studies

Road project	Annual avg prior to road project (\$m)	Recent annual avg 2010-2015 (\$m)	Change since road project opening	Change compared to wider average
Surface road improvements			Average	23%
Servetus Street	\$119	\$232	95%	16%
Orrong Road	\$179	\$1,499	737%	798%
Centenary Hwy	\$236	\$296	25%	30%
Tunnel/Bypass road improvements			Average	33%
Tugun Bypass	\$227	\$279	23%	0%
Lane Cove Tunnel	\$252	\$335	33%	33%

All figures as at financial 2014/15.

See **Appendix 1** for more details about each road project.

Averages exclude Orrong Road and Tugun Bypass.

Data sources: Australian Bureau of Statistics.

UNEMPLOYMENT TRENDS

There is some evidence that a local road improvement has a positive influence on local job creation, and in particular the incidence of unemployment.

Moreover, improvements in local employment conditions appear to coincide with the lift (or otherwise) of non-residential development in the area. Revisit the previous page.

As a conclusion here, it would appear that **local road improvements, if they help facilitate more non-residential development activity, can result in more local work and lower rates of local unemployment.**

10. Potential impact on level of local unemployment

Select road project case studies

Road project	Prior to road opening		Current (2015)	
	Local area	Wider average	Local area	Wider average
Surface road improvements			Summary	some impact
Servetus Street	5.6%	8.0%	2.4%	6.1%
Orrong Road	10.2%	8.0%	4.8%	6.1%
Centenary Hwy	4.2%	5.1%	5.4%	5.7%
Tunnel/Bypass road improvements			Summary	little impact
Tugun Bypass	6.5%	4.6%	4.9%	5.1%
Lane Cove Tunnel	4.6%	6.8%	4.7%	5.3%

All figures as at financial 2014/15.

See **Appendix 1** for more details about each road project.

Data sources: Australian Bureau of Statistics.

FATAL MOTOR VEHICLE ACCIDENTS

Our analysis also shows that improving the surface road system has a very positive impact on the number of reported motor vehicle fatalities.

Our work shows that reported fatal road accidents can fall between 11% and 90% when compared to the wider city average.

Our work also shows a decrease in serious local car crashes if heavy and/or through traffic is diverted away from residential streets via a tunnel. The potential decrease ranges can be in the vicinity 57% to 68%.

The tunnel option is likely to have a slightly more greater positive impact on the occurrence of fatal car crashes than just improving surface traffic routes.

Our work suggests that the base case option for Section Two of the Perth Freight Link could see local fatal accidents decrease by as much as 50% when compared against the wider city average.

A tunnel option could see this decrease register in the 60% to 70% range.

11. Potential impact on local reported motor vehicle fatalities

Select road project case studies

Road project	Avg annual prior to road project	Avg annual recent years 2010-2015 (\$m)	Change since road project opening	Change compared to wider average
Surface road improvements			Average	48%
Servetus Street	5	4	-20%	43%
Orrong Road	10	6	-40%	90%
Centenary Hwy	9	6	-33%	11%
Tunnel/Bypass road improvements			Average	63%
Tugun Bypass	18	7	-61%	57%
Lane Cove Tunnel	6	2	-67%	68%

All figures as at financial 2014/15.

See **Appendix 1** for more details about each road project.

Data sources: NSW, WA and Qld Police Service.

Appendix 1

CASE STUDY 1 – SERVETUS STREET

Overview

The Servetus Street project involved construction of a four-lane dual carriageway in a deep cutting alongside Servetus Street, from Alfred Road to Curtin Avenue and Claremont Crescent, in the Perth suburb of Swanbourne.

Becoming an extension of the West Coast Highway, the \$30 million Servetus Street Project was designed to provide a smooth, north-south route for the high volumes of regional and general traffic through Cottesloe, Swanbourne, Claremont and Nedlands, as well as improve the movement of local traffic.

Servetus Street, which was the former main thoroughfare, was modified to service local traffic and is linked by an east-west bridge crossing the West Coast Highway to the coastal side of the suburb.

Construction commenced in 1997 and the project was **officially opened on June 30th, 1999.**

Prior to completion of the project, there were conflicting traffic demands in Swanbourne, resulting in heavy congestion during peak periods, many traffic accidents, and general safety problems for road users and pedestrians. The traffic issues resulted in a reduced quality of life for people living around Servetus Street.

Study area

Our focus for this study includes the suburbs of Claremont, Cottesloe, Mount Claremont, Peppermint Grove and Swanbourne.

See **Map on page 21** for road location and outline of our case study area.

Methodology

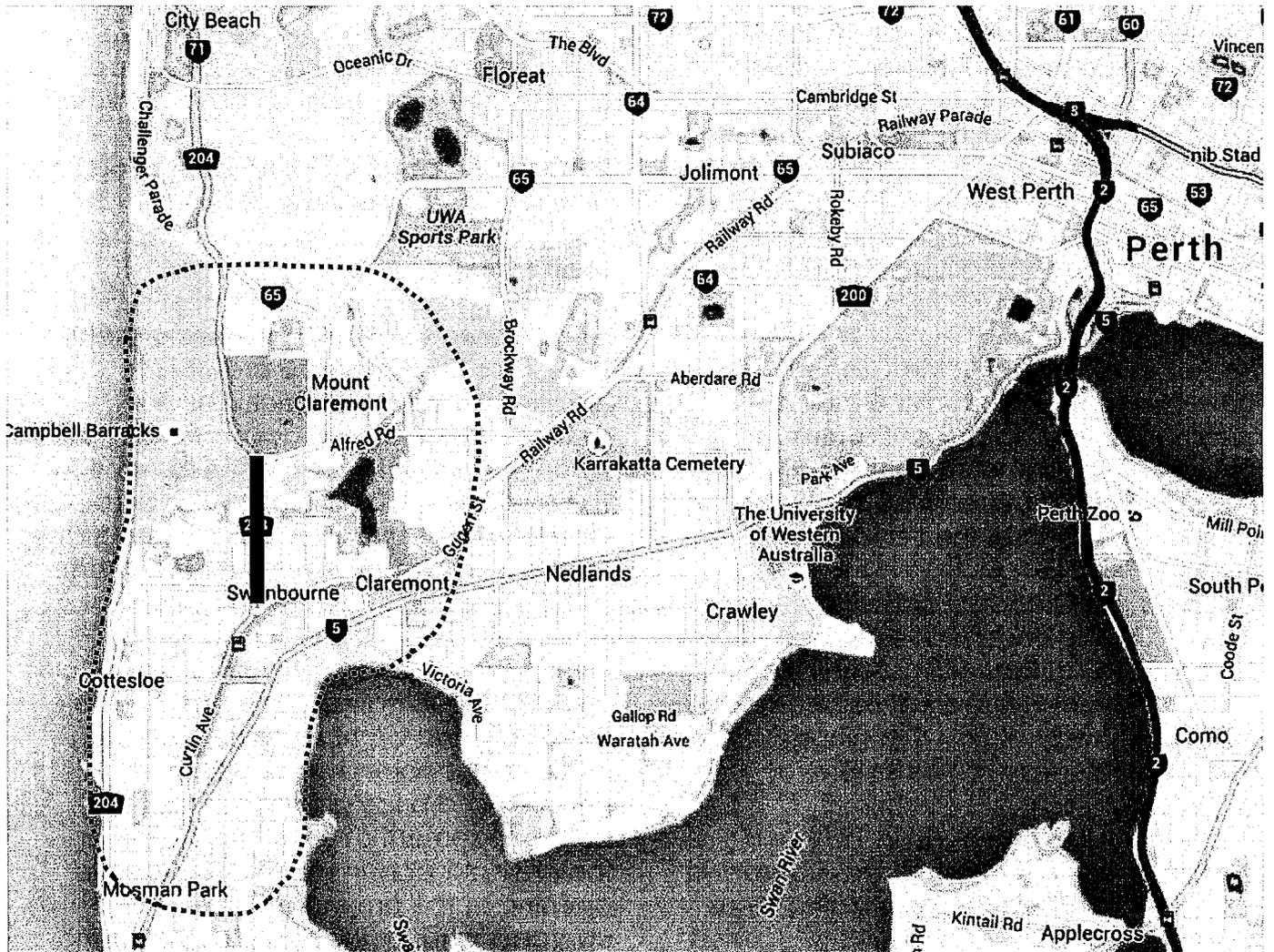
Census data from 1991 provides a useful "base case" as the project was only in its early concept phase at the time. The 1996 Census coincides with more detailed design of the project; and the 2001, 2006 and 2011 Censuses all capture changes subsequent to the project's opening.

In relation to the residential property market, annual sales figures are available from 1997 and we have sales figures for 1990. This enables us to assess sales volumes and price growth prior to the project's construction, throughout the project's construction phase, and in the years thereafter.

Note that residential sales data is as at 30th June each year.

Servetus Street Project

Locational map and case study area



- Servetus Street
- Case study area

CASE STUDY 2 – ORRONG ROAD

Overview

The Graham Farmer Freeway provides a vital 6.5 kilometre east-west link from Perth's busy eastern precincts of Burswood and Rivervale through to West Perth and Leederville, bypassing Perth's Central Business District (CBD) by way of the 1.6km Northbridge Tunnel.

This offers drivers a valuable, time-saving option compared to driving through the CBD itself.

The eastern terminus of the Graham Farmer Freeway is a modified diamond interchange with the great Eastern Highway in Burswood. **Orrong Road** acts as a connector between the Graham Farmer Freeway and the Leach Highway.

As part of the Graham Farmer Freeway project, Orrong Road was extended to Welshpool Road East, ultimately linking the Graham Farmer Freeway at Burswood with the Roe Highway at East Cannington and the Tonkin Highway at Wattle Grove.

Construction commenced in 1996 and **opened in 2000**. The tunnel was upgraded in early 2013 to provide three traffic lanes in each direction.

Prior to the 2013 upgrade, the Northbridge Tunnel was already carrying close to 100,000 vehicles every weekday, making it one of the busiest road tunnels in Australia.

Study area

Our focus for this study are Perth's inner south-eastern suburbs most affected by the Graham Farmer Freeway and the Orrong Road, which include Burswood, Carlisle, Kewdale, Lathlain and Rivervale.

See **Map on page 23** for road location and outline of our case study area.

Methodology

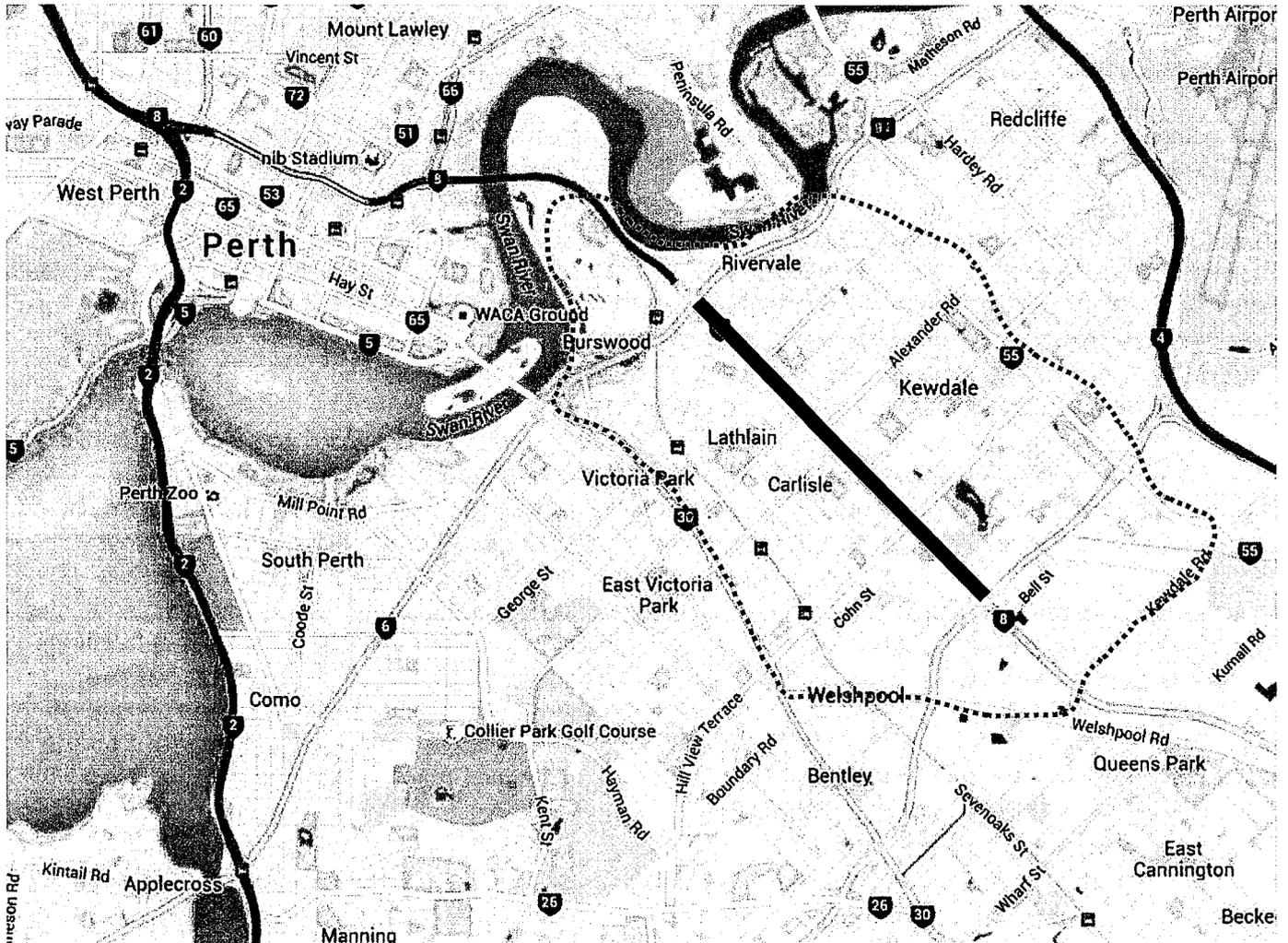
Census data from 1996 provides a useful "base case" as this data pre-dates construction of the project. The 2001 Census predominantly covers the period when the project was under construction. The Census of 2006 and 2011 captures changes subsequent to the opening of the Graham Farmer Freeway and the Orrong Road extension.

In relation to the residential property market, annual sales figures are available from 1996 and we have sales figures for 1990. This enables us to assess sales volumes and price growth prior to commencement of construction, during the project's construction, between the opening of the project and the 2013 upgrade, and for the two years following the 2013 upgrade.

Note that residential sales data is as at 30th June each year.

Orrong Road Project

Locational map and case study area



- Orrong Road
- Case study area

CASE STUDY 3 – CENTENARY HIGHWAY

Overview

The Centenary Highway is a limited access road in the western suburbs of Brisbane. The 8 kilometre highway was constructed in the 1970s to link the Western Freeway (which runs from Indooroopilly to Toowong) with Ipswich Road in the suburb of Darra.

In January 2005, construction began on the 14 kilometre Centenary Highway Extension, running south from Darra to the newly-developed suburbs of Springfield and Springfield Lakes. **This two lane extension was opened in June 2006.**

Later in 2006, construction began on further extensions of the Centenary Highway southbound from Springfield.

In 2008, duplication of the Darra-Springfield section of the Centenary Highway commenced; this was finally completed in 2014.

This project was stage 2 of the "Darra to Springfield Transport Corridor", which also saw extension of the railway line from Darra to Richlands (4.5 kilometres, which opened in January 2011) and from Richlands to Springfield (9.5 kilometres, which opened in December 2013).

Study area

This report focuses on the effects on a range of urban outcomes that arose through construction of the initial two-lane

Centenary Highway Extension from Darra to Springfield that commenced construction in January 2005 and which opened in June 2006.

Our study area is focused on the suburbs of Springfield, Springfield Lakes, Augustine Heights and Brookwater.

See **Map on page 25** for road location and outline of our case study area.

Methodology

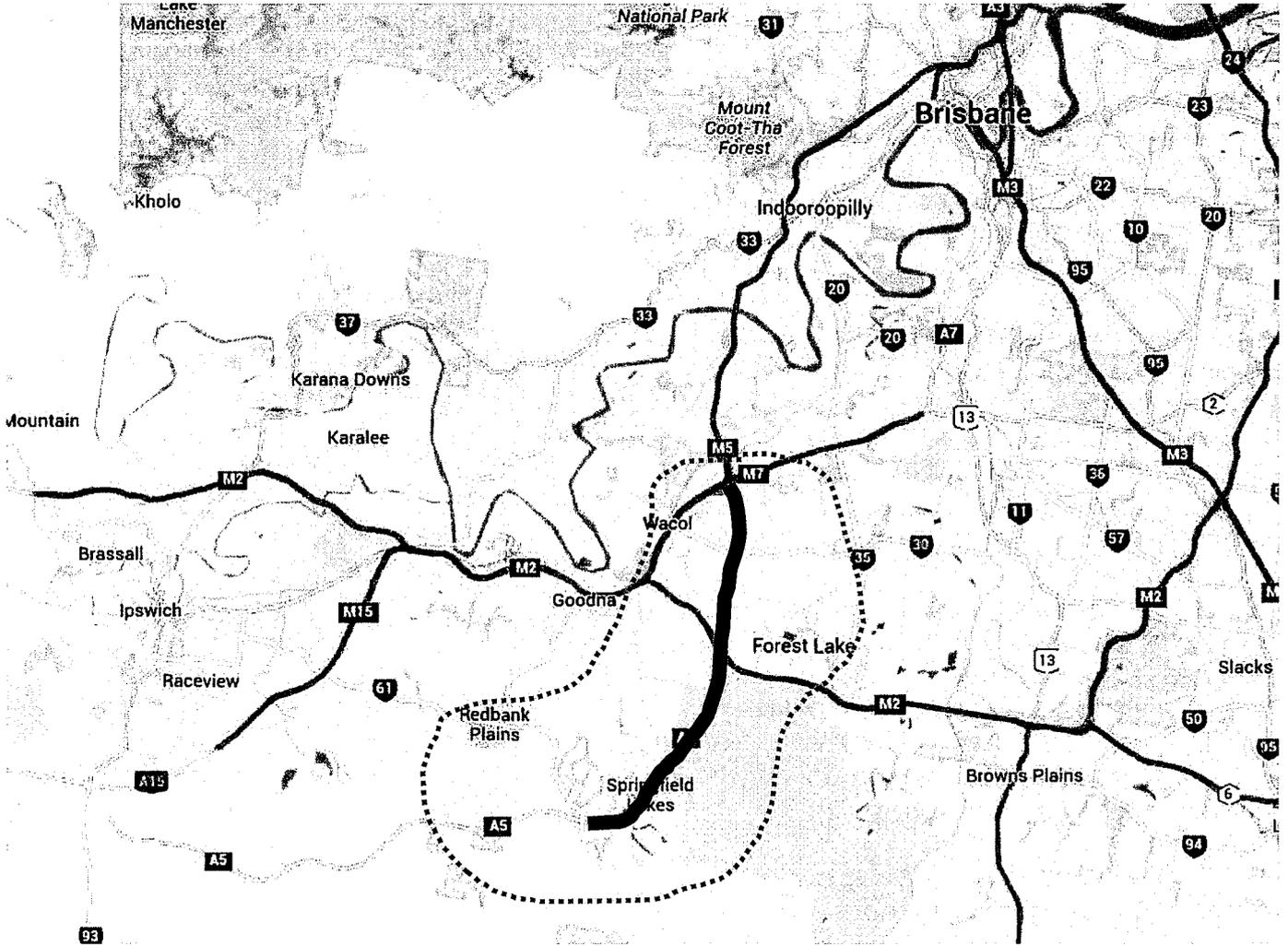
Census data from 2001 provides a useful "base case" as this data pre-dates consideration of the Centenary Highway Extension. Whilst the 2006 Census was undertaken only two months after the opening of the Centenary Highway Extension, it may show changes reflecting some level of "expectation" about the likely effect of the project. The Census of 2011 captures changes subsequent to the opening of the Centenary Highway Extension.

In relation to the residential property market, we likewise use 2001 as a "base case" and track annual changes thereafter, noting in particular data for 2005 (construction begins), 2006 (two-lane Centenary Highway Extension opens), and 2014 (duplication of the Centenary Highway Extension completed). In reality, however, it is probably too early to gauge the effect of the 2014 duplication.

Note that residential sales data is as at 30th June each year.

Centenary Highway Extension

Locational map and case study area



— Centenary Highway Extension

..... Case study area

CASE STUDY 4 – TUGUN BYPASS

Overview

The 7.5 kilometre Tugun Bypass has provided a new, motorway-standard link between Queensland and New South Wales. Taking traffic to the west of the Gold Coast Airport, bypassing the suburbs of Tugun and Bilinga. The project effectively continues the Pacific Motorway (M1) at its former terminus at the Stewart Road interchange at Currumbin to the Tweed Heads Bypass, north of Kennedy Drive at Tweed Heads West.

The project comprises four lanes; grade-separated interchanges at Stewart Road, Currumbin and at the Tweed Heads Bypass, Tweed Heads West; a 334-metre tunnel below the Gold Coast Airport's runway extension, twin bridges over Hidden Valley, and a preserved rail corridor for the future.

Prior to the opening of the Tugun Bypass, serious traffic congestion occurred along the Gold Coast Highway through Tugun and Bilinga, with delays of up to 30 minutes common on weekends and holidays. Traffic modelling suggested such delays would become a daily occurrence by 2017.

The Tugun Bypass effectively separates local traffic from tourist and most heavy vehicle traffic and is estimated to have taken 55% of traffic off the existing Gold Coast Highway, thus improving local traffic and reducing travel time between Currumbin and Tweed Heads West to five minutes. It has also reduced air pollution along the existing highway and provided opportunities for improved public transport.

Tugun Bypass opened in June 2008.

Study area

Firstly, we examined the effect of the project on suburbs to the immediate north of the Tugun Bypass, namely Currumbin, Currumbin Waters, Elanora and Palm Beach. Local traffic from these suburbs would have been negatively affected by the congestion associated with through traffic from the Pacific Motorway entering the Gold Coast Highway via Stewart Road at Tugun.

Secondly, we examined those suburbs effectively bypassed by the project, namely Tugun and Bilinga, as well as the adjoining suburbs of Kirra and Coolangatta.

Finally, we examined the effect the Tugun Bypass has had on those suburbs to the immediate south of its joining with the pre-existing Tweed Heads Bypass, namely Tweed Heads, Tweed Heads West, Tweed Heads South and Banora Point.

See **Map on page 27** for road location and outline of our case study area.

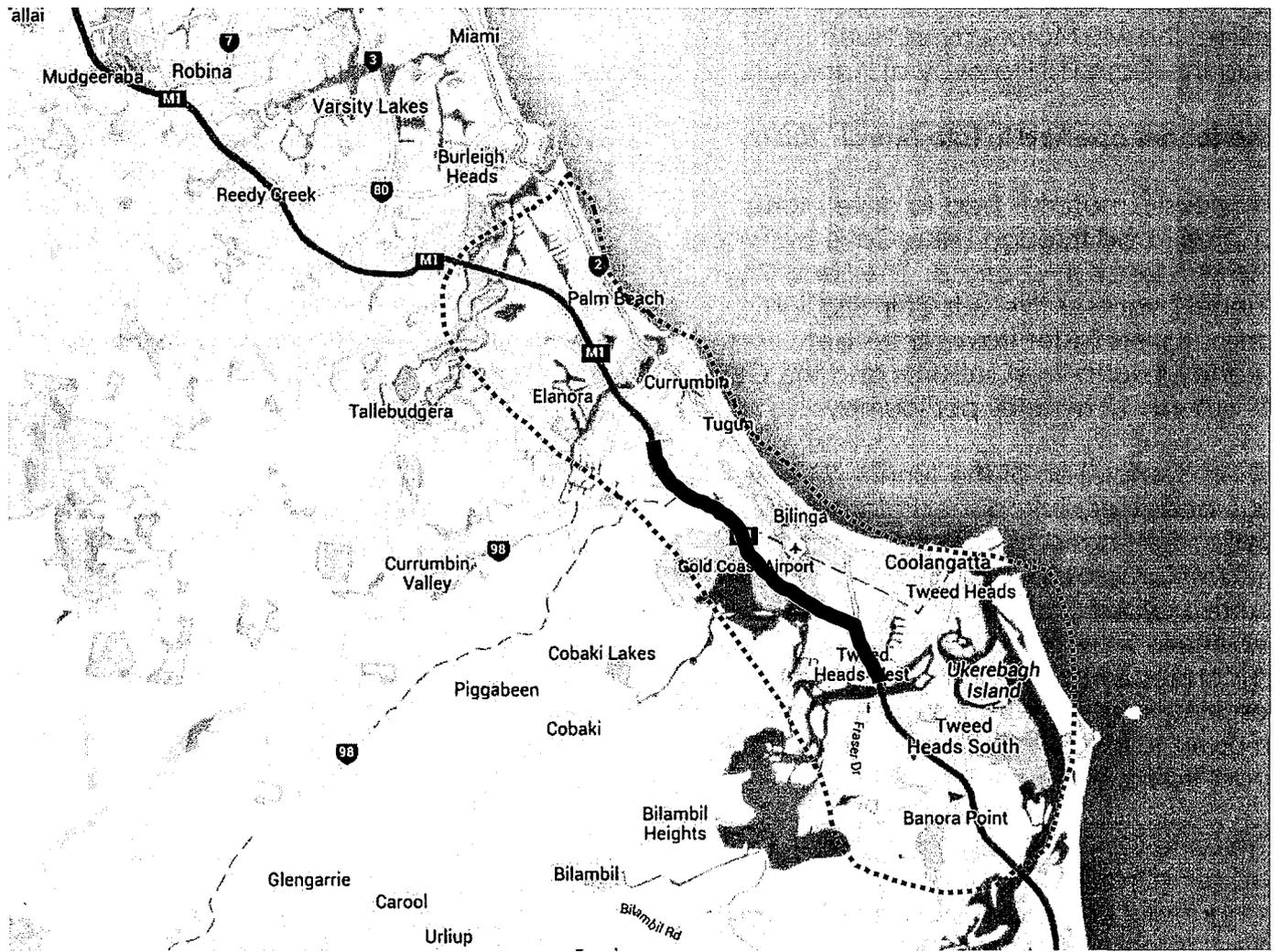
Methodology

2006 census data provides a useful "base case" as it pre-dates consideration of the Tugun Bypass. The Census of 2011 captures changes subsequent to the opening of Tugun Bypass.

In relation to the residential property market, we likewise use 2001 as a "base case" and track annual changes thereafter, noting in particular data for 2006 (construction begins), 2008 (project opens), and 2015 (current). Note that residential sales data is as at 30th June each year.

Tugun Bypass

Locational map and case study area



———— Tugun Bypass

..... Case study area

CASE STUDY 5 – LANE COVE TUNNEL

Overview

The Lane Cove Tunnel is a 3.6 kilometre twin-tunnel motorway under Epping Road, linking the M2 Motorway at North Ryde with the Gore Hill Freeway at Artarmon.

The tunnel opened in late March 2007.

Previously, motorists had to drive along Epping Road through Lane Cove between the two freeway sections. The Lane Cove Tunnel bypasses five sets of traffic lights and delivers faster travel times between Sydney's north-west suburbs and the CBD of around 17 minutes per journey.

Upon completion of the tunnel, 24-hour bus lanes were introduced along Epping Road, right-hand turn lanes reinstated, pedestrian crossings added, as well as a shared cyclist and pedestrian path. These measures were designed to overcome the disconnection of the local community resulting from the extensive road network in order to improve public transport and local traffic in the corridor.

The Lane Cove Tunnel was successful in reducing traffic along Epping Road, Longueville Road and Mowbray Road West, remedying arguably the worst traffic problem in the upper North Shore.

Study area

We firstly examined the effect of the tunnel on the municipality of Lane Cove, in particular the suburbs of Lane Cove,

Lane Cove North, Lane Cove West, Riverview, Longueville and Greenwich.

We also examined the tunnel's effect on the suburbs that comprise the City of Ryde, as many of these, such as North Ryde, East Ryde, Macquarie Park and Marsfield are situated either along or close to Epping Road and have likely benefited from the Lane Cove Tunnel.

See **Map on page 29** for road location and outline of our case study area.

Methodology

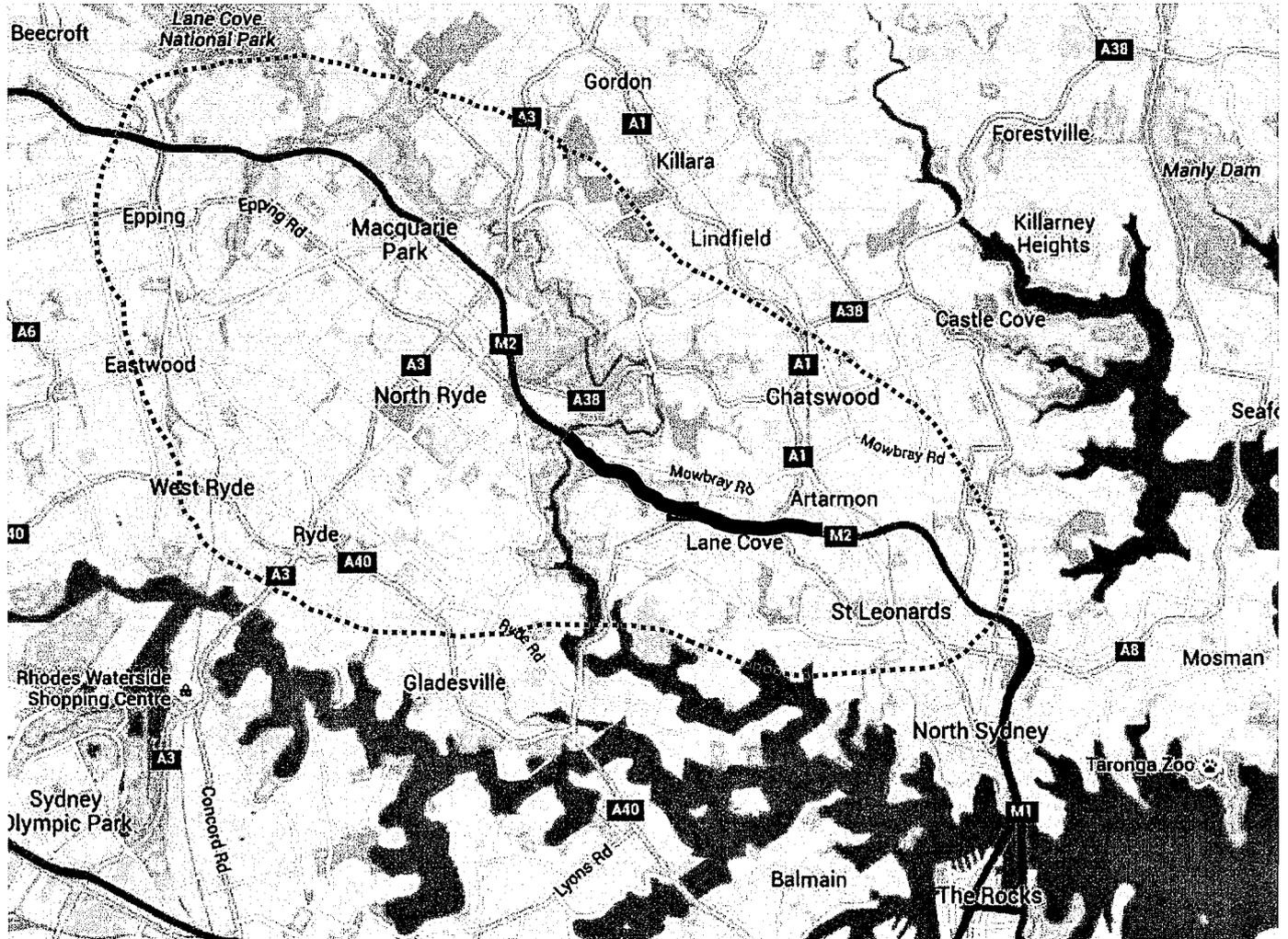
Census data from 2001 provides a useful "base case" as this data pre-dates serious consideration of the Lane Cove Tunnel. Whilst the 2006 Census also pre-dates the opening of the Lane Cove Tunnel, construction was well underway and may show changes reflecting some level of "expectation" about the likely effect of the tunnel. The Census of 2011 captures changes subsequent to the opening of the tunnel.

In relation to the residential property market, we likewise use 2001 as a "base case" (prior to serious consideration of the tunnel proposal). We then examine data in three-year periods being 2004 (construction begins) and 2007 (tunnel opens), before tracking annual changes thereafter.

Note that residential sales data is as at 30th June each year.

Lane Cove Tunnel

Locational map and case study area



———— Lane Cove Tunnel

..... Case study area

End notes

MATUSIK PROPERTY INSIGHTS

Matusik Property Insights (MPI) is an independent property consultancy, providing detailed research and analysis for industry, government and individuals.

A leader in residential market analysis and strategic property advice, MPI prides itself as a trusted source of reliable property intelligence.

Infrastructure case study work

Our infrastructure work typically involves 'benchmarking' which forms a significant component of our approach for infrastructure studies and recommendations.

Infrastructure case studies – Matusik Property Insights

- **Gold Coast Airport** – Noise impact study on suburbs potentially affected by proposed emergency flight path.
- **Brisbane Airport** – Noise impact on select suburbs.
- **Springfield Land Corporation** – Centenary Highway upgrade and rail line extension impact on values and future land use planning.
- **Leda Holdings** – Tugun Bypass impact on project definition for both Kings Forest and Cobaki Lakes.
- **Brisbane City Council** – City-wide housing recommendations based on increasing densities around existing and future infrastructure plans.
- **Brisbane Port Authority** – Overall master planning with variations allowing for proposed CityKat terminals and a potential additional Brisbane River crossing.
- **Toowoomba Chamber of Commerce** – Local economic drivers (including proposed infrastructure) and the potential impact on local property market.
- **Stockland Corporation (Lend Lease)** – Redcliffe railway extension impact on North Lakes estate and land use delivery.

For more information:

Email office@matusik.com.au

Phone (07) 3368 2878

Website www.matusik.com.au

Michael Matusik is a thought leader in the Australian housing industry and a member of the Future Housing Taskforce.

A 26 year veteran in this business, Michael has helped close to 600 new residential projects come to fruition and in the late 1990s established his own advisory business – Matusik Property Insights.

Michael is a qualified Town Planner with first class honours from the University of Queensland.



Matusik Property Insights Pty Ltd
Unit 12, 65-69 Macgregor Tce,
Bardon Q 4065
PO box 1175, Kenmore Q 4069
07 3368 2878
office@matusik.com.au
www.matusik.com.au

IMPORTANT NOTES

RISKS OF INVESTING IN PROPERTY

Direct investment in residential property, like all investments, involves a number of risks. If these eventuate, your income might be lower than expected. There may even be none. In addition, the capital value of your investment could fall.

The key risks of investing in property are outlined below:

- The property purchased may not provide the income or capital gains the asset was expected to produce.
- There is a risk that your property may, for periods of time, lie vacant & hence not generate income. Maintenance & repair costs are the investor's responsibility & can vary, and at times be significant. Such costs are sometimes recoverable from rental bonds or under insurance policies.
- There are a number of factors that affect the general property market including increases in supply & falls in demand; the cyclical nature of property values; increases in taxes & operating expenses; overall economic conditions; demographic changes; changes in town planning laws; casualty & condemnation losses; environmental risks; regulation on rents; detrimental new developments in the area; increases in interest rates; similarly, inflation & changes to bank funding policies.
- Gearing increases the volatility in the value of your investment. In the early stages of residential investment, a significant fall in the property's value may see balances fall to less than the total amount of borrowings.
- Increases in interest rates often increase the cost of borrowings.
- Changes in laws or their interpretations including taxation, superannuation & corporate regulatory laws, practice & policy could have an impact on your investment. You should seek professional tax advice before investing in residential property.

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