Reports, recommendations and supporting documentation can be accessed via the Darwin City Council Website at www.darwin.nt.gov.au, at Council Public Libraries or contact Linda Elmer on (08) 89300 670.

DARWIN CITY COUNCIL

SPECIAL COUNCIL MEETING

TUESDAY, 8 MARCH 2011

MEMBERS: The Right Worshipful, Lord Mayor, Mr G R Sawyer (Chairman); Member J D Bailey; Member R T Dee; Member R K Elix; Member H I Galton; Member R M Knox; Member G A Lambert; Member R Lesley; Member F P Marrone; Member A R Mitchell; Member K M Moir; Member J L Sangster; Member H D Sjoberg.

OFFICERS: Chief Executive Officer, Mr B Dowd; Acting General Manager Corporate Services, Mr L Carroll; General Manager Community & Cultural Services, Mr J Banks; General Manager Infrastructure, Mr L Cercarelli; Executive Manager, Mr M Blackburn; Committee Administrator, Ms L Elmer.

GUESTS Professor Daniela Stehlik from The Northern Institute Charles Darwin University will be in attendance to brief the Council on Population and Planning.

Mr David Malone and Mr Mark Meldrum from the Department of Lands Planning, will be in attendance to brief the Council on Weddell Design Forum – Outcomes and Options for the future and Greater Darwin Land Use Plan – Towards 2030.

Enquiries and/or Apologies: Linda Elmer
E-mail: l.elmer@darwin.nt.gov.au - PH: 8930 0670

*** * * I N D E X * * *** **PAGE**

1 MEETING DECLARED OPEN

2 APOLOGIES AND LEAVE OF ABSENCE

2.1 Apologies

2.2 Leave of Absence Granted

THAT it be noted that Member J L Sangster is an apology due to a Leave of Absence being previously granted on 22 February 2011 for the period 24 February 2011 to 10 March 2011.

DECISION NO.20\() (08/03/11)

2.3 Leave of Absence Requested

3 DECLARATION OF INTEREST OF MEMBERS AND STAFF

4 CONFIDENTIAL ITEMS

Nil

5 DEPUTATIONS AND BRIEFINGS

5.1 Population and Planning
Common No. 1267297

Professor Daniela Stehlik from The Northern Institute Charles Darwin University will be in attendance to brief the Council on Population and Planning.

THAT the presentation from The Northern Institute Charles Darwin University in relation to Population and Planning, be received and noted.

DECISION NO.20\() (08/03/11)

5.2 Council on Weddell Design Forum – Outcomes and Options for the future and Greater Darwin Land Use Plan – Towards 2030
Common No. 1267297

Mr David Malone and Mr Mark Meldrum from the Department of Lands and Planning will be in attendance to brief the Council on Weddell Design Forum – Outcomes and Options for the future and Greater Darwin Land Use Plan – Towards 2030.

THAT the presentation from Department of Lands and Planning in relation to Weddell Design Forum – Outcomes and Options for the future and Greater Darwin Land Use Plan – Towards 2030, be received and noted.

DECISION NO.20\() (08/03/11)

6 MISCELLANEOUS ITEMS

6.1 Intensification of the Darwin Municipality

Report No. 10TS0198 CR:kb (22/10/10) Common No. 1870934

Report Number 10TS0198 CR:kb attached

ENCL: YES

DARWIN CITY COUNCIL

DATE: 22/10/2010

REPORT

TO:	SPECIAL COUNCIL MEETING/OPEN	**APPROVED:**	CR
FROM:	GENERAL MANAGER INFRASTRUCTURE	**APPROVED:**	DC
REPORT NO:	10TS0198 CR:kb	**APPROVED:**	LC
COMMON NO:	1870934		

SUBJECT: INTENSIFICATION OF THE DARWIN MUNICIPALITY

ITEM NO: 6.1

SYNOPSIS:

There has been ongoing discussion at the national, state and local levels, regarding greenfield developments versus urban intensification. This report provides an introductory overview of urban intensification.

INTRODUCTION:

As part of a strategic planning workshop, this report provides background discussion on the potential positive and negative implications to Council, of intensification of the Darwin municipality. It is understood that the question has been raised as to whether current urban areas can accommodate a portion of the expected future population growth deferring the need for Weddell.

The Darwin municipality is a defined area with a limited supply of developable land. Once remaining greenfield sites are fully developed, the options for accommodating population growth are to extend the urban front (i.e. Weddell), undergo a process of urban intensification, or a combination of both. In planning for higher densities, the questions of where and how must arise first, followed closely by what configuration.

Darwin has an existing established character that changes by street and suburb. While they are defined by many similarities, there are also significant differences which make them distinct. In deciding where, how much, and by what configuration intensification should occur in an established city, consideration must be given to what should be retained and inversely, what should be designated for a higher and better use.

Recently there has been an increase in the frequency of proposals to change the zoning of isolated properties from Zone SD (Single Dwelling Residential) to Zone MD (Multiple Dwelling Residential) and MD to Zone MR (Medium Density Residential). 'Up-zoning' provides the opportunity to increase the number of dwellings on a site, and potentially the number of residents. The capacity of each zone will be discussed within the body of this report, as well as the broader implications of any increase.

Recent discussions regarding greenfilled versus urban intensification have centred on the affordability issue.

Intensification (where, how much and by what configuration)

Strategic planning is about managing the growth and development of an area over a long term period. It provides direction to the community about what an area is likely to look like in the future, so that people can make decisions about where they want to live and business can make decisions about their own service delivery.

Strategic planning objectives are translated into a format that can be used to assess development in the form of principles and performance criteria within a planning scheme.

The assessment of developments is undertaken in a statutory framework where the principles and performance criteria are considered and compared to the outcomes achieved by any proposed development. Statutory planners use the intent of the strategic work and the resulting criteria to make assessments of the suitability of developments at particular sites.

Statutory planning is about assessing development applications with regard to the established performance criteria and the intent of strategic plans.

When considering how to increase the density of a city, there are a number of methods that can be employed. In order to achieve a higher density within existing urban areas. There will be an inevitable transition from the established urban form, to that of a more compact arrangement, through a process referred to as ‘urban infill’.

To have an understanding of what outcomes are possible for an area, there are a number of considerations to be made. Developing a strategic plan for an area, is to have a goal and method of achieving that goal, whether that be at a fine grained lot by lot basis or a broader neighbourhood level.

There is a considerable amount of research and investigation that must take place to have a full understanding of the likely population growth, capacity of both the land and existing services and infrastructure, before a maximum potential can be determined. Once this understanding has been achieved, the decision then turns to what is desired within the area?

With a better understanding of the development potential and the desired outcomes, a framework can be developed.

How does this work with what we have currently?

Darwin is approaching the situation where the land we choose to build on is becoming more constrained by both natural and constructed features. It has come to the point that there is very little readily identifiable unconstrained land to develop. Once available greenfield sites are exhausted, pressure to redevelop existing urban areas will increase. Identifying suitable areas for future urban infill and the level of development appropriate, should include consideration of factors such as:

Accessibility to services and public infrastructure

- Public Transport
- Schools
- Recreation (social gathering places, active spaces, local parks)
- Medical Facilities
- Shops
- Employment
- Road networks
- Essential infrastructure capacity for sewer, water, power, stormwater

Urban form

- Streetscape
- Suburb layout
- Scale of development
- Useable open space
- Mix of housing options
- Climate Change

SD to MD to MR

The increased number of applications for spot rezoning proposals in recent months, has raised the question whether such ad-hoc development can deliver a desirable and efficient urban form. Between October 2009 and October 2010 the Town Planning Committee received reports on twelve proposed planning scheme amendments to change the existing use to either MD or MR. As of 1 March 2011, six applications had been approved, one application was approved subject to limitations, four applications refused and one application had not been determined. The planning scheme amendments are listed below in Table 1, and are shown in the context of the municipality in Figure 1.

Table 1 – Planning Scheme Amendments seen by the Town Planning Committee Oct 09 – Oct 10

TPC Meeting	PA	Address	From – to	Determination
October 09	2009/0155	Lot 8537, 7 Sabine Road, Millner	SD -> MD	Approved
	2009/1271	Lot 796 67 Ryland Road, Rapid Creek	SD -> MD	Refused
November 09	2009/1420	Lot 8623 11 Vanderlin Drive, Casuarina	C -> MR	Refused
December 09	2009/1527	Lot 2900 31 Conigrave Street, Fannie Bay	SD -> MD	Refused
June 10	2010/0215	Lot 5591 7 Cahill Crescent, Nakara	SD -> MD	Refused
	2010/0233	Lot 2017 6 Queen Street, Stuart Park	MD -> MR	Approved
August 10	2010/0464	Lot 1964 6 Winston Avenue, Stuart Park	MD -> MR	No Determination
	2010/0546	Lot 2085 31 Eden Street, Stuart Park	SD -> MD	Approved
September 10	2010/0602	Lot 7114 4 Bishop Street, Woolner	MD -> MR	Approved
	2010/0965	Lot 1310 38 Ryland Road, Millner	SD -> MD	Approved
	2010/0996	Lot 7162 42 Marrakai Street, Tiwi	SD -> MD	Approved (note: approval was given for a Specific Use (no.35) zoning rather than MD, restricting the development to single storey dwellings.
October 10	2010/0982	Lot 1080 57 Trower Road, Rapid Creek	SD -> MD	Approved

It can be seen that the proposed rezoning has occurred in three general areas; Stuart Park, Rapid Creek/Milner, and within the vicinity of Casuarina Shopping Centre.

Since October 2010, three rezoning reports have been presented to Council. At the time of writing this report, these applications had not yet been determined. These applications were located in Stuart Park and Rapid Creek.

The majority of applications received have sought an incremental density increase of only one step i.e. SD to MD or MD to MR, not SD to MR.

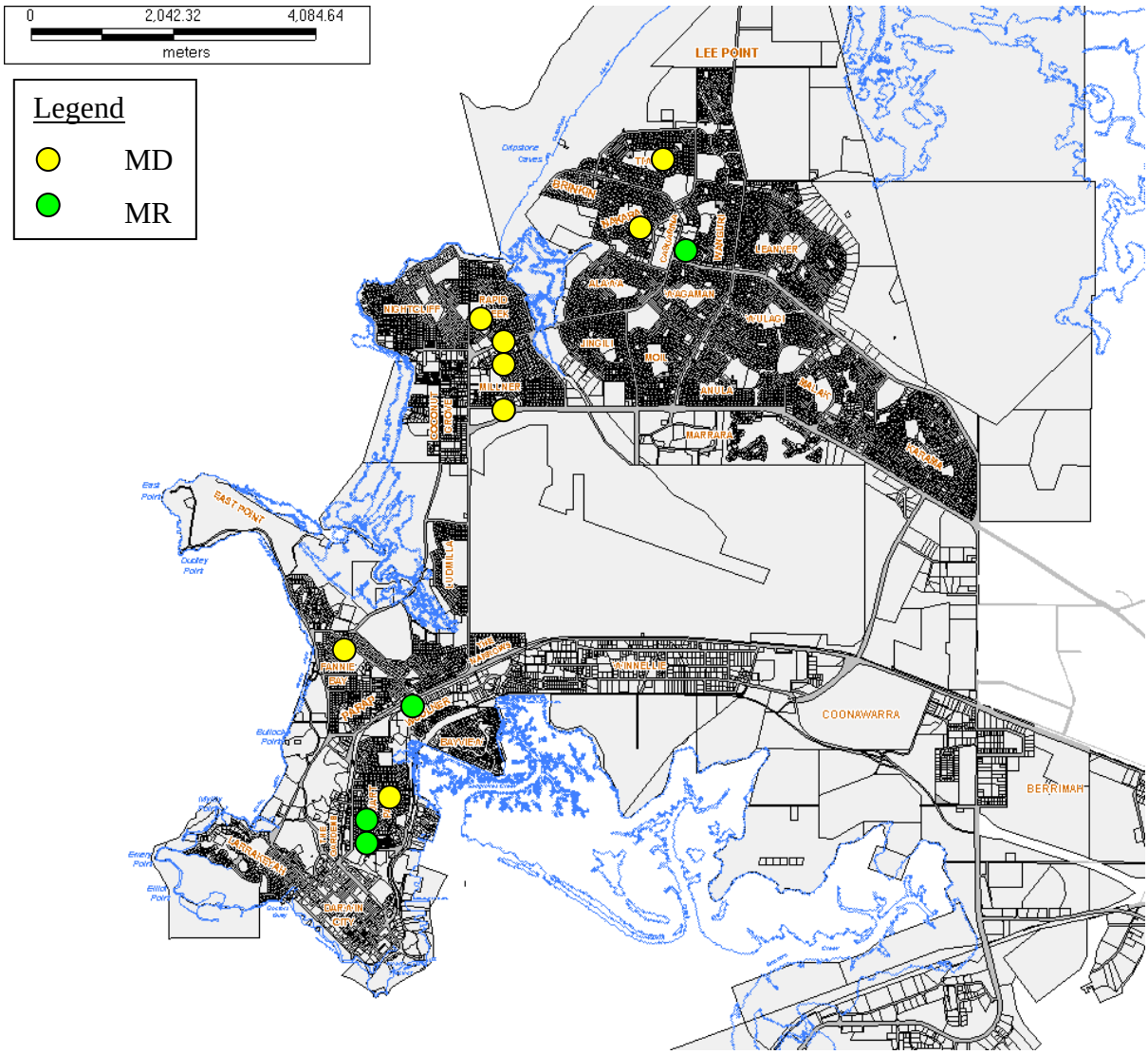

Figure 1 – Proposed rezoning applications between October 2009 and October 2010

Zone Provisions	SD (Single Dwelling)	MD (Multiple Dwelling)	MR (Medium Density)
Minimum Lot Size[1]	800m^2	800m^2	800m^2
Density – Dwellings	1 per lot	1 per 300m^2	1 per 215m^2, up to 1 per 85m^2 dependant on number of bedrooms
Setback – Primary Front	6m	6m	7.5m
Setback – Secondary Front	2.5m	2.5m	2.5m
Setback – Side	1.5m	1.5m	1.5m – no views 3m – with views
Setback – Rear	1.5m	1.5m	1.5m – no views 3m – with views
Height	2 Storeys (8.5m)	2 Storeys (8.5m)	4 Storeys
Private Open Space – Ground Level	50m^2 (Min area: 6x6m)	45m^2 (Min area: 5x5m)	45m^2 (Min area: 5x5m)
Private Open Space – Balcony	-	12m^2 (Min area: 2.8x4m)	12m^2 (Min area: 2.8x4m)
Communal Open Space	-	15% (Min area: 6x6m)	15% (Min area: 6x6m)
Landscaped area	-	30%	30%

[1] As part of an integrated residential development (min 50 lots), lots of less than 800m^2 may be created provided that; not more than 50% of lots are than 800m^2, the minimum lot size is 450m^2, and the average lot size is at least 700m^2.

Urban Infill and its relationship to Council

A document produced in July 2009 by the City of Melbourne and the Victorian Department of Transport stated:

> *'If Australia's major cities are to meet future demands for population growth without simply repeating past practices of taking over farmland on the urban fringe, a new paradigm needs to be found. This needs to involve containing future development and infrastructure within the current city boundaries to the greatest extent possible, while achieving greater efficiencies and affordability. This is the aspiration of most cities but achievement typically falls short.*
>
> *Strategies to achieve liveability and sustainability within the confines of existing city boundaries need to comprise the six key ingredients of existing successful cities, namely:*
>
> - *Mixed use*
> - *Density*
> - *Connectivity*

- *High quality public realm*
- *Local character*
- *Adaptability'*

(Transforming Australian Cities, For a More Financially Viable and Sustainable Future, Transportation and Urban Design, July 2009)

Unlike most other Australian cities, Darwin City Council does not control town planning, which is key to this discussion. Council however, should and does have an important role to play. Council has a core responsibility to provide and maintain efficient waste collection, stormwater, local road networks, public open space and other social infrastructure and community services which directly impact on the discussion of urban infill. Council also plays and important advocacy role on behalf of the community in relation to these matters.

Should the municipality undergo a shift to higher densities the usage of services and infrastructure such as parks, roads and libraries are also likely to increase as the population growth occurs within the municipality and the region.

It should not be assumed however, that increased demand for services and infrastructure will result in higher costs to ratepayers. All services and infrastructure have built-in thresholds for maximum usage or capacity and much of the existing infrastructure in Darwin Municipality potentially has some capacity to accommodate higher densities, which if better utilised, would reduce the per household cost of provision.

Identifying this capacity in existing systems and the likely threshold points where upgrading will be required and provide a guide for the best economy of scale. This would likely involve an extensive study to assess existing infrastructure, local conditions and external inputs such as climate change.

Economic research is also required in the local context to fully understand the financial benefits or otherwise of any proposal to the community. To have the best outcome given the planning operating status in the Northern Territory, any such study should be undertaken in partnership with the Northern Territory Government.

Nationally there is significant bodies of work regarding urban intensification and resulting outcomes including cost of developments, impact on communities and various patterns for urban infill. The following is a 'snap shot' of some of this work. There are many other publications relating to urban infill outlining issues and considerations.

Victoria

The Victorian Department of Transport and the City of Melbourne jointly commissioned a study to establish the potential to transform metropolitan Melbourne to meet the projected population of 5 million by 2029. The resulting report titled, 'Transforming Australian Cities', July 2009 is **Attachment A** to this report.

The following are extracts from the document:

> *'In meeting this challenge, it is important to realise that in 2029 over 90% of the infrastructure of Australian cities would have been built prior to 2010. Transformation by this definition cannot simply be read as rebuilding infrastructure but rather will need to, in the main, involve the rationalisation and better utilization of our existing infrastructure.*
>
> *Buildings, roads, railways, parks, waterways, energy, communications and fluid distribution systems will all need to be looked at in a new and open minded way. Only one thing is certain: if we continue to understand, develop and utilise our infrastructure in the traditional ways of the 20th century we are doomed to perpetuate our current problems.' (page 4)*
>
> *' To save the Australian dream we first need to genuinely understand the current costs and vulnerabilities of our existing cities and then develop transformational strategies that will retain the quality of lifestyle we desire while producing cities which are liveable, economically viable, socially inclusive and ecologically sustainable.' (page 9)*
>
> *'Recent research undertaken by Curtin University that found that for every 1000 dwellings, the costs for infill and fringe developments are $309 million and $653 million respectively (Trubka et. al.2008). Additional fringe development costs incurred include hard infrastructure such as power and water, increased transport and health costs and greenhouse gas emissions.' (page 9)*
>
> *By encouraging infill development, the economic savings to society would equate to over $300 million per 1000 housing units, or in Melbourne's case $110,000,000,000 over the next 50 years.' (page 17)*

New South Wales

Sydney's population is projected to grow by 1.7 million people by 2036. The New South Wales Government has identified the need to provide the right housing in the right locations. The development of a Metropolitan Plan for Sydney 2036, **Attachment B** *(Summary sheet of Metropolitan Plan)* begins to explain the issues.

Amongst other issues the Plan identifies, Sydney's future housing needs at least 70% of new housing will be located within existing urban areas and up to 30% in new release areas.

The Metropolitan Plan for Sydney 2036 also contains a document titled, 'Strategic Direction D, Housing Sydney's Population', **Attachment C** of this report, which discusses the issues in detail.

The following are some extracts of the Plan:

> *'A stronger emphasis on achieving efficient use of existing urban areas where small, medium and large centres enjoy good access to services, jobs and public transport.' (page 106)*

'Increasing densities without compromising the amenity of existing properties and contributing to a high quality urban domain.' (page 112)

Refer: Housing Sydney's Population, 2010 – Page 113

In regards to the financial issues relating to the mix of 70% within existing developments and 30% greenfield, the Plan states:

'This approach is confirmed by the Centre for International Economics whose analysis indicated the most beneficial urban form for Sydney would be achieved by locating at least 70% of new housing within the existing area.' (page 114)

Northern Territory

The Darwin City Council has been calling for the development of a Metropolitan Plan for Darwin which would explore these and other relevant issues.

In February of this year the Northern Territory Government released the *Greater Darwin Region Land Use Plan Towards 2030 – Consultation Paper*. A presentation regarding this will be made to Council and the document will be the subject of future reports to Council. A CD containing the full document has previously been provided to elected members. The document identifies that:

'*The Territory has the Challenge and opportunity to develop the region for the 21st century'.*

The consultation paper is designed to support the Government's aim to build a prosperous and sustainable future for the Territory.

It is expected an extra 53,000 to 70,000 people will call the Greater Darwin Region home by 2025. With regard to residential growth the plan states that:

> *'In the long term, planned residential land and housing development will continue to be balanced between land releases – greenfield sites and redevelopment of vacant or underdeveloped land – brownfill or infill sites.'*

'*Dual occupancy on blocks 1,200 square metres or larger is proposed, helping meet residential demand close to urban centres though infill developments.'*

The Region's residential development potential

Name	Number of additional dwellings up to 2025	Development Potential
1 Darwin City Centre	up to 3,320	Growth will be accommodated through infill and redevelopment of vacant or underdeveloped sites. Higher density is expected within this area. Existing zoning allows residential development up to 90m or 30 storeys. Key waterfront sites are identified as places for higher density.
2 Darwin Inner Suburbs	up to 2,900	There will be redevelopment of underdeveloped or vacant sites. There is potential for more multiple dwellings along rapid transit corridors or activity corridors taking into account capacity and servicing costs.
3 Darwin Northern Suburbs	up to 3,185	There will be a balance between new Greenfield development, such as Muirhead, and redevelopment of underdeveloped or vacant sites. There is potential for more medium density residential development for a targeted number of dwellings. Casuarina Shopping Centre area has been identified for increased density.
4 Winnellie/ Berrimah	up to 1,825	Redevelopment of Berrimah Farm and Berrimah Prison as infill sites will produce a well located, sustainable mixed commercial, industrial and residential development. Proposed redevelopment will be in line with COAG principles and international objectives to decrease urban carbon footprints.
5 Palmerston	up to 5,470	Greenfield development, such as Bellamack, Johnston, Zuccoli and Mitchell and the Charles Darwin University site at Durack, will comprise the major growth within the Palmerston area. Increased residential development within the CBD will be encouraged.
6 Weddell	up to 7,230	The vision for Weddell is to provide 10,000 housing lots in a tropical, sustainable and liveable city. As the Territory's newest city on a Greenfield site, Weddell presents the opportunity to design a sustainable city that will be a model for cities and towns of the future. The area will need to accommodate various housing types and densities. Planning for Weddell is underway, and approximately 7,230 dwellings are needed to accommodate the growth within the next 15 years.
7 Litchfield	up to 3,130	Growth will be accommodated through more dense development within and around rural villages, with lots down to minimum 800 sqm, and rural residential land rural living subdivision of between 4,000 sqm, 1ha, 2ha and 8ha. Infrastructure head works and services will be required to support this in a cost efficient way. Girraween, Howards Springs Pine Forest, Coolalinga, Fred's Pass, Virginia, Humpty Doo, Noonamah and Berry Springs will see development of infill sites.
8 Cox Peninsula	up to 1,000	The Territory Government, Northern Land Council and Traditional Owners reached agreement regarding the Kenbi Land Claim in 2009. The Larrakia Development Corporation has flagged its intention for a mixture of residential and industrial development on the Peninsula, pending final resolution of the Land Claim. The cost of delivering infrastructure to the area will be significant. Based on current infrastructure capacity, the Cox Peninsula could deliver about 241 additional services. Pending the resolution of the Kenbi Land Claim, potential private development could deliver between 5,000 to more than 30,000 dwellings, pending the delivery of appropriate infrastructure. This Land Use Plan provides for 1000 dwellings.

Refer: Greater Darwin Region Land Use plan towards 2030 Consultation Paper – Page 39

This consultation paper presents the opportunity for Council to raise any issues regarding the regions development and the use and impact of urban infill. The consultation period is for three months.

Summary

The discussion of urban infill versus greenfield development is a complex and will no doubt attract much community debate.

Development solutions to address various issues including population growth need to be developed in the local context as “one model does not fit all”. There are substantial bodies of work that can be drawn upon to guide and inform, however significant local work needs to be undertaken as identified in this report to fully understand what should be the model for Darwin and the surrounding region.

The Greater Darwin Region Land Use Plan Towards 2030 – Consultation Paper is a starting point for further work and community discussion. The document requires careful consideration by Council and appropriate feedback to the Northern Territory Government. Work is progressing on preparing a report on the document for Council’s consideration.

FINANCIAL IMPLICATIONS:

Any study specific to Darwin would require significant funding and resources to ensure rigour of outcome.

STRATEGIC PLAN IMPLICATIONS:

The issues addressed in this Report are in accordance with the following Goals/Strategies of the Darwin City Council 2008 – 2012 as outlined in the ‘Evolving Darwin Strategic Directions: Towards 2020 and Beyond’:-

Goal

1 Achieve Effective Partnerships and Engage in Collaborative Relationships

Outcome

1.1 Improve relations with all levels of Government

Key Strategies

1.1.4 Play a strategic role in the planning and developmental processes that impact Darwin

1.1.5 Influence Government and developers to develop sustainable projects which reflect Darwin’s lifestyle

1.2 Effectively engage with Community

1.2.1 Increase involvement of the Business Community for developing solutions to local issues

Goal

2 Enhance Darwin’s Active, Positive and Flexible Lifestyle

Outcome

2.1 Improve urban enhancement around Darwin

Key Strategies

2.1.1 Manage and maintain the municipal landscaping and infrastructure to a standard that meets community needs

2.1.4 Provide a clean and liveable municipality

Goal

3 Assist Individuals and the Community Stay Connected with the Darwin Region

Outcome

3.1 Promote the use of public spaces

Key Strategies

3.1.1 Enhance public spaces and encourage greater use by the community

3.2 Enhance transport

3.2.1 Review transport and parking needs systems

3.2.4 Provide parking facilities and management systems which meet the needs of the community.

Goal

4 Create and Maintain an Environmentally Sustainable City

Outcome

4.2 Improve water conservation

Key Strategies

4.2.2 Manage and maintain Council's storm water management system.

LEGAL IMPLICATIONS:

Various

PUBLIC RELATIONS IMPLICATIONS:

This matter may generate significant community debate.

COMMUNITY SAFETY IMPLICATIONS:

Not Assessed.

DELEGATION:

Nil.

CONSULTATION:

Not applicable at this stage.

PROPOSED PUBLIC CONSULTATION PROCESS:

Nil

APPROPRIATE SIGNAGE:

Not Applicable.

RECOMMENDATIONS:

THAT it be a recommendation to Council:-

THAT Report Number 10TS0198 CR:kb entitled Intensification of the Darwin Municipality, be received and noted.

CINDY ROBSON
STRATEGIC TOWN PLANNER
INFRASTRUCTURE & PLANNING

LUCCIO CERCARELLI
GENERAL MANAGER
INFRASTRUCTURE

Any queries on this report can be directed to Cindy Robson on 8930 0528 or email c.robson@darwin.nt.gov.au

ATTACHMENT A

TRANSFORMING AUSTRALIAN CITIES

FOR A MORE FINANCIALLY VIABLE AND SUSTAINABLE FUTURE

Transportation and urban design

July 2009

city of Melbourne

Victoria
The Place To Be

TRANSFORMING AUSTRALIAN CITIES FOR A MORE FINANCIALLY VIABLE AND SUSTAINABLE FUTURE

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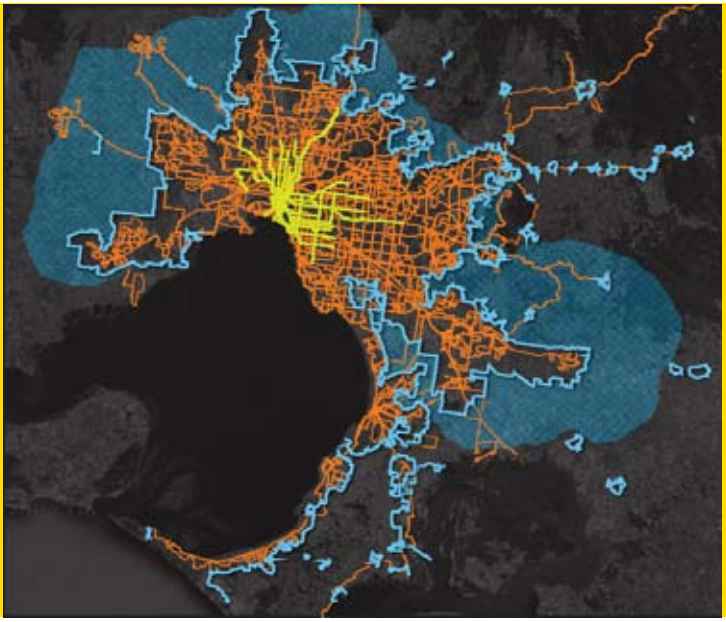
Introduction

This study was jointly commissioned by the Victorian Department of Transport and the City of Melbourne to establish the potential to transform metropolitan Melbourne to meet the projected population of 5 million by 2029. The study specifically does not deal with rail based public transport and Activity Centres as these have been the subject of extensive investigation over the last ten years.

The Victorian Government's Melbourne 2030 Strategy and more recently Melbourne @ 5 Million are both based on the Activity Centre or Transport Orientated Design principles and are widely regarded as both important and necessary strategies to meet the future needs of metropolitan Melbourne. This study concentrates on the 'missing links' in the above strategies, namely the potential of the tram and bus corridors to not only accommodate a significant proportion of Melbourne's future growth, but to do so in a way that will help to meet the aspirations and needs of the greater population while enhancing the performance of the existing infrastructure of the City, particularly the existing public transport infrastructure.

For the Strategy offered by this study to be successful it needs to be not only pragmatic in its implementation but politically 'palatable'.

Melbourne at 5 million if status quo development patterns prevail



'...it is important to realise that in 2029 over 90% of the infrastructure of Australian cities would have been built prior to 2010'

Context

More than 80% of Australians and over half of the world's population now live in cities — cities that are responsible, directly or indirectly, for nearly 75% of the world's greenhouse gases. The design and operation of our cities is therefore a critical challenge facing humanity in the 21st century. Our successes or failures to transform cities over the next 20 years will be a key legacy to future generations.

In meeting this challenge, it is important to realise that in 2029 over 90% of the infrastructure of Australian cities would have been built prior to 2010. Transformation by this definition cannot simply be read as rebuilding infrastructure but rather will need to, in the main, involve the rationalisation and better utilization of our existing infrastructure.

Buildings, roads, railways, parks, waterways, energy, communications and fluid distribution systems will all need to be looked at in a new and open minded way. Only one thing is certain: if we continue to understand, develop and utilise our infrastructure in the traditional ways of the 20th century we are doomed to perpetuate our current problems.

On a daily basis we are witnessing the failure and short comings of these traditional systems. It is no longer simply an argument about economy of production but increasingly an argument about capacity — the capacity of our cities to withstand the pressures of the future, notably population expansion, climate change and outdated modes of operation.

As recently as January 2009 (just prior to Victoria's horrific February bushfires), Melbourne experienced some of these limitations. As temperatures rose, and then settled in the 40s the city experienced a number of failures:

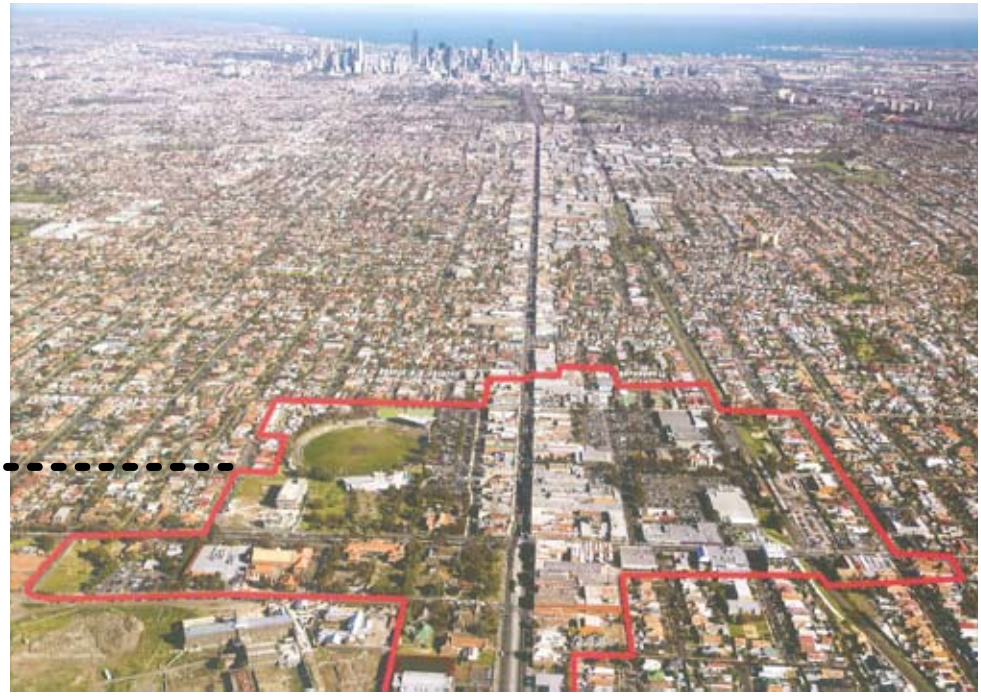
> Pressures on the electrical generation and distribution network saw blackouts and failures affect large areas of the city.

> Rail systems designed for cooler conditions overheated and failed, with up to half of the scheduled trips being cancelled.

> Fires threatened not only lives and property but also narrowly missed bringing down the main power distribution network from the Latrobe Valley – an occurrence that would have closed down the whole city.

> Water consumption trebled at a time when the water storage levels sat at a perilous 33%.

> The soil moisture levels in all the major parks and gardens fell to below 40%, the trigger point to significant stress for the municipality's 60,000 trees (including over 15,000 hundred year old tree stock).



Aerial view of Melbourne showing a major activity centre (Coburg)

‘Power generation at its peak could have been better secured and off set by distributed solar power generation fed into the grid from the suburban roofs’

These were some of the most significant recorded impacts on the city and surrounds, leading to loss of life and potentially 100s of millions of dollars of lost income, productivity and property damage. The biggest regret should be the realisation that much of this was avoidable. For example, power generation at its peak could have been better secured and offset by distributed solar power generation fed into the grid from the suburban roofs. The collection and filtration of stormwater and greywater closer to source could also have provided the necessary backup during peak demands, while protecting the capacity of our long term storage and river flows.

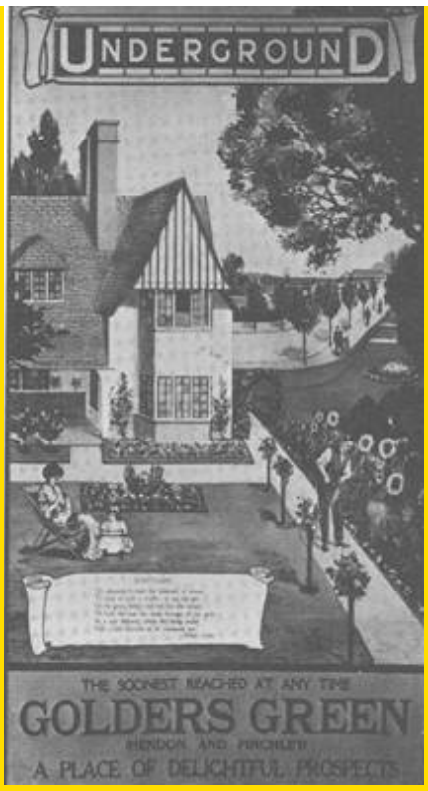
Why then, are these alternatives not being developed and implemented? Why do we continue to focus excessively on the short term, refusing to factor in all the adverse long term economic, social and environmental impacts of traditional technologies, transport, city form and energy distribution systems which are becoming more apparent on a daily basis? Clearly in this study it is not possible to deal with all of these issues. Instead, it seeks to identify the potential for the economic, social and environmental transformation of our existing cities, in the main built after the industrial revolution and in the model of the garden city movement and modernism.

The garden city movement promised us the dream that we could live in the countryside and work in the city, while modernism turned us away from pragmatic locally based solutions and towards the international solutions supported by technologies (such as air conditioning) that no longer made appropriate, 'place influenced design' a necessity. Overlay this mindset with an over-reaction to the ills of the industrial city and the emergence of the motor car and you have the root causes of the current form of our cities – namely low density, widely spread, activity zoned cities where the motor car dominates our public realm and public transport has been largely marginalised.

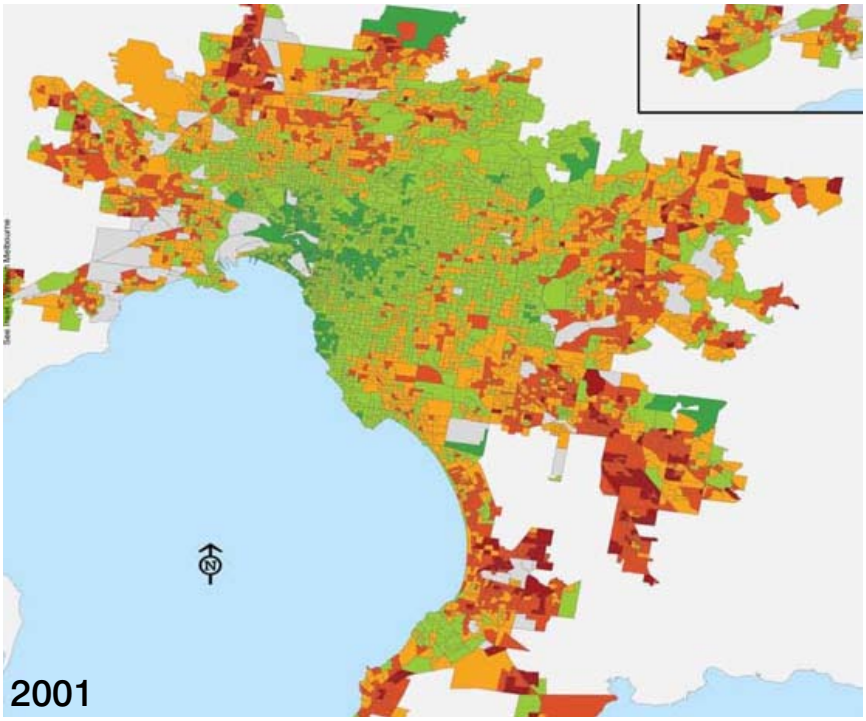
This is not to deny the obvious qualities of the Australian dream of living in a detached house in the well-treed suburbs. Dreams are important but ultimately need to be supportable if they are not to lead to economic, social and environmental disaster.

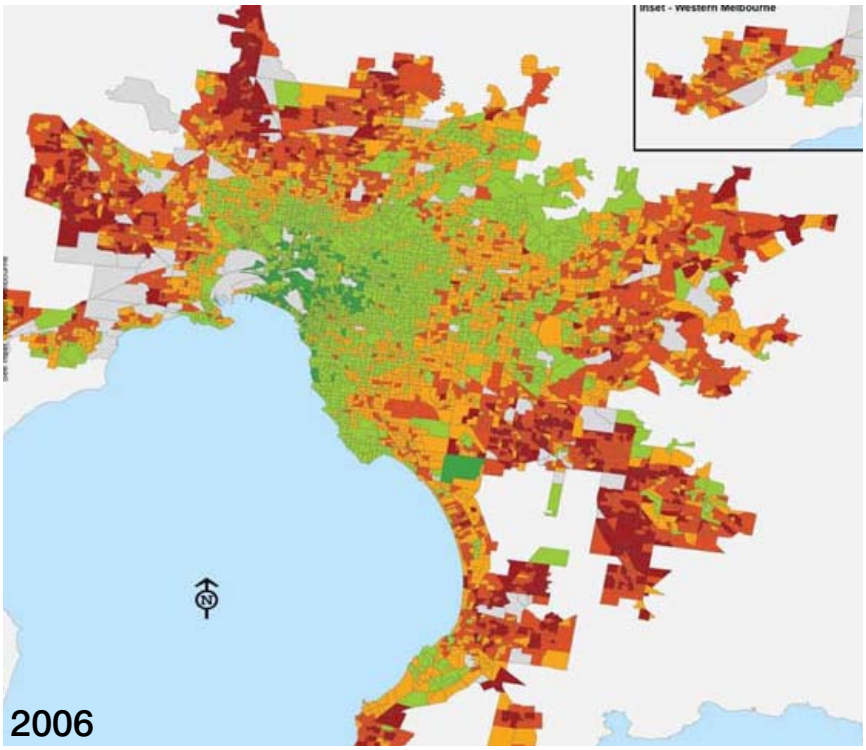
So how do we sustain the Australian dream and make it an exemplar to all other post industrial cities worldwide? Is it possible?

The Garden City movement promised we could live in the countryside and work in the city. Sustaining this dream today increasingly relies on efficient public transport.



Oil and mortgage vulnerability comparison –
by building on the fringe we are building in future poverty





0-9 (minimal vulnerability)

10-14 (low vulnerability)

15-16 (moderate vulnerability)

17-18 (high vulnerability)

19-30 (very high vulnerability)

no data

Griffith University Urban Research Program VAMPIRE index,
Dr Jago Dodson and Dr Neil Sipe 2008,
Unsettling Suburbia: The New Landscape of Oil and Mortgage Vulnerability in Australian Cities

Saving the Australian dream

To save the Australian dream we first need to genuinely understand the current costs and vulnerabilities of our existing cities and then develop transformational strategies that will retain the quality of lifestyle we desire while producing cities that are liveable, economically viable, socially inclusive and ecologically sustainable.

So what are some of the short and long term costs of our urban developments when viewed through the new realities of climate change and diminishing fossil fuels?

Climate change will undoubtedly impact on infrastructure and urban development in the near future. Some of the main issues that will need to be considered when developing any future proofing strategy are:

> Climate change is already delivering more extreme weather events, such as flooding, storm surges, reduced rainfall in certain areas, increased wildfires and extreme temperature variations.

> Existing urban settlements and infrastructure are increasingly vulnerable and will need to be protected against these events (e.g. buckling rail lines and exposed overhead wires).

> Sea levels are likely to rise 1-2 meters in the next 100 years.

Recent research undertaken by Curtin University that found that for every 1000 dwellings, the costs for infill and fringe developments are $309 million and $653 million respectively (Trubka et. al. 2008). Additional fringe development costs incurred include hard infrastructure such as power and water, increased transport and health costs, and greenhouse gas emissions.

Therefore by encouraging infill development, the economic savings to society would equate to over $300 million per 1000 housing units, or in Melbourne's case $110,000,000,000 over the next 50 years. This figure does not take account of the indirect benefits to society of factors such as increased social capital and economic productivity as a result of better health and closer knit communities. This research adds considerably to concerns about the unending sprawl of our cities and strengthens the case for more compact settlement patterns.

This built form and transport mode are no longer sustainable

If Australia's major cities are to meet future demands for population growth without simply repeating past practices of taking over farmland on the urban fringe, a new paradigm needs to be found. This needs to involve containing future development and infrastructure within the current city boundaries to the greatest extent possible, while achieving greater efficiencies and affordability. This is the aspiration of most cities but achievement typically falls short.

Strategies to achieve liveability and sustainability within the confines of existing city boundaries need to comprise the six key ingredients of existing successful cities, namely:

> Mixed use
> Density
> Connectivity
> High quality public realm
> Local character
> Adaptability

'We have reached an interesting time when the drivers of sustainable cities are the same as the drivers of liveable cities, namely, mixed use, connectivity, high quality public realm, local character and adaptability. When these characteristics come together as they do in Barcelona, they provide an alchemy of sustainability, social benefit and economic vitality. These cities reduce their need for car travel, reduce energy consumption and emissions, use local materials, support local businesses and create identifiable communities.'
– Rob Adams, *The Age*, 2009

Of the elements listed above, the question of city density is arguably the most important. Compact cities with high densities are emerging as the most robust in the challenges posed by climate change. They are capable of operating on lower consumption and often produce more equitable social characteristics and access to essential services.

Cities such as Barcelona with 200 persons per hectare, and more recently Malmo Bo01 in Sweden, are examples worth reflecting on. Built in 2001, Bo01 is an exemplar of a low carbon footprint. The development's density of 120 persons per hectare equates to about eight times the typical Australian urban density. Bo01 is comprised of highly sustainable buildings of 2-5 storeys in height. As with Barcelona, this low rise high density dispels the myth that high density requires high rise.

It is arguable that no new building needs to be higher than 8 storeys to achieve high density compact cities for the future. This built form is not only more sustainable but reduces the need for excessive embedded and operating energy; for example: windows can be operable and used for passive ventilation and cooling; stairs become alternatives to lifts for the lower floors; and the reduced height helps ameliorate excessive wind effects at ground level, which is characteristic of much taller buildings.

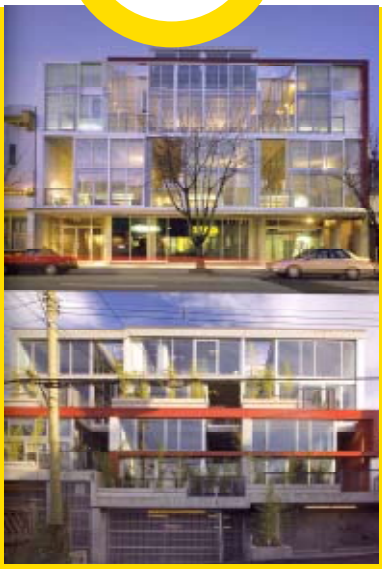
Malmo Bo01 Density = 120 persons per hectare

High density does not necessitate high rise. (NB: densities shown relate to specific buildings depicted)

449 people/ha

MEXICO CITY MEXICO

553 people/ha



VANCOUVER CANADA

903 people/ha

VIENNA AUSTRIA

A new paradigm for Australian Cities should recognise the need to not only direct future development to Activity Centres around rail infrastructure (which most are planning) but also to recognise the enormous development potential of the road based public transport corridors created by bus and tram movements. Curitiba in Brazil, for example, has pioneered development of the 'linear city', using a trunk Bus Rapid Transit network as the foundation for medium rise high density development, surrounded by low density development.

'In Australian cities, the aim should be to maximize development along new and future road based trunk public transport corridors'

In Australian cities, the aim should be to maximize development along new and future road based trunk public transport corridors. These, as with activity centres, would become 'key development areas', producing urban corridors that would utilise only up to 10% of the existing city area. This is not a new phenomenon but rather a recognizable trend that needs to be facilitated. In Melbourne, successful activity centres and transport corridors already exist as is apparent in Coburg and along Sydney Road, Brunswick. They are increasingly vibrant and sought after areas to live in with successful communities that support urban living for a wide cross section of nationalities and needs.

Importantly they exist in close proximity to suburban areas which make up the remaining 91% of the city which could be designated as 'areas of stability' protected from high density development and encouraged to become the 'green lungs' of the city through increased street tree plantings, water collection, passive solar energy generation and productive back yards.

Key Development areas of the city

Over the next decade, Urban Corridors along with Activity Centres, together which account for only 6% of the land area within the Urban Growth Boundaries, will need to become known as the most desirable locations for new urban development. This study did not look in depth at the capacity within Melbourne's Activity Centres. Research undertaken by Melbourne University (Kim Dovey et al) indicates that the current area available in the Activity Centres without any further extension of their boundaries is 6895ha. It is of interest to note that this area is similar to the land potentially available for development along the urban corridors and is equivalent to 3% of the available land within the Urban Growth Boundary. If this resulted in 60% take up for residential development this would equate to 4200ha which could reasonably accommodate 840,000 people at a density of 200 people per hectare.

The aim should be that, by 2029, the key linear transport corridors will have developed into medium rise high density corridors that connect all the activity centres, and provide easy access to high quality public transport from the adjacent 'productive suburbs'. Development of these corridors would take development pressure off the existing suburbs, which can then develop as the new 'green lungs' of our metropolitan areas.

The success of these high density corridors will rely on clear communications and a widely understood implementation strategy. The lessons from existing urban development strategies, like Melbourne 2030, are that unless the parameters of engagement are clearly understood by all the affected parties, the roll out will become bogged down and ineffectual. One of the issues is that the current planning process is not well equipped to handle rapid development approvals.

Aerial view of Melbourne showing urban corridor (tram)

'Development of these corridors would take development pressure off the existing suburbs'

Some of the requirements for this to work successfully are as follows:

> All the existing and future major trunk public transport corridors need to be clearly identified, so that there can be no confusion as to the extent of the key development areas.

> All heritage buildings and public open spaces along these routes need to be protected.

> The extent of the footprint for redevelopment needs to be easily measured.

> The appropriate level of development, 4 to 8 storeys, needs to be determined up front and be as of right.

> Clear principles around the transition and overlooking conditions in relation to the properties running along the back boundaries of the designated sites need to be established.

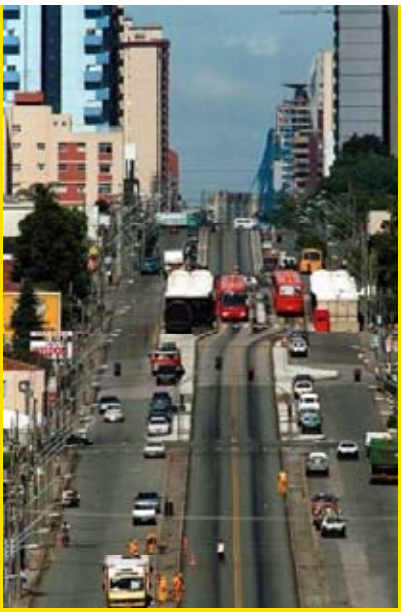
> All new development will be required to provide no less than 80% active frontages along all street frontages. Vehicle access to sites should preferably be from rear lanes or side streets.

> All developers will be required to provide a percentage of affordable housing in any residential redevelopment (ie. a form of value capture).

> All new development will be required to meet high environmental standards, including integrated energy/water/sewer systems.

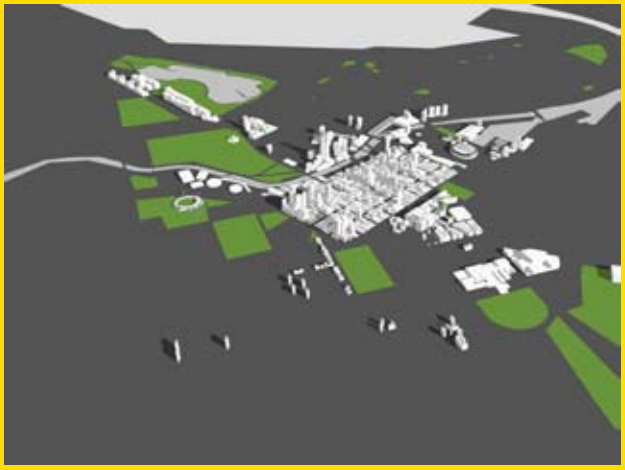
> Streets will be modified to favour rapid public transport, bicycles and pedestrians over motor vehicles

Combining dedicated tram corridors with extended dedicated bus corridors could achieve a rapid expansion of Melbourne's public transport infrastructure. (Shown: Curitiba, Brazil)

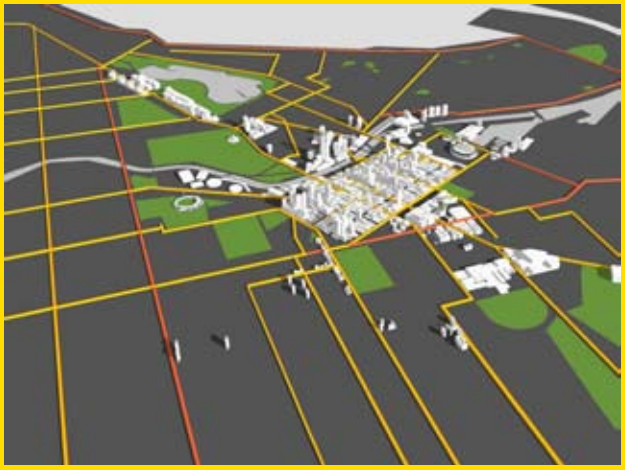


The advantage of these prescriptive controls over the current approach to planning is that it will be very easy for the land value to be determined. This will avoid developers 'over bidding' in the hope that additional development potential can be achieved through the planning process. This approach would also work in favour of small scale builders and developers, thus providing greater variety and a smaller scale that is all too often absent from new large scale developments.

3D model of the evolution of the new paradigm in inner Melbourne



1 *Central city built form with open spaces shown*



2 *Existing and proposed road based transport corridors*

3 *As of right development along corridors (early development)*

4 *Areas of stability between corridors*

Maribyrnong Road, Maribyrnong study area, currently

Possible future

Affordability could be further enhanced if small scale domestic builders could achieve special registration for developments up to 5-6 storeys. Current costing processes would indicate that this approach is only financially viable for 1-3 storey developments. New construction methods, such as factory fabrication of units, and/or the correct costing of all benefits so as to allow government involvement in site procurement or offsets, are some of the main challenges that should be addressed by economists.

Offsets need to be considered in the light of the over $300 million additional cost per 1000 houses if built on the fringe (Trubka et. al. 2008). A small proportion of this $300 million, if invested in the corridors, would both help ensure the viability of this approach and go some way to remedying market failures with current development patterns (e.g. external costs that are ignored), including infrastructure pricing (that does not reflect marginal social costs).

A key challenge for this approach is achieving public acceptance. The principles above will assist in this regard, since they are intended to help assure the wider community that these corridors are fixed and will not spill over into the suburban areas in between. There will also need to be good visualisation of the outcomes (such as below) so as to overcome a concern that high density inevitably equates to high rise.

'Selling' the idea should be helped by the reality that these development concepts are not new, as they are starting to take place in many locations around the country. The proposition in this study is that it is time to considerably speed up the process.

By encouraging infill development, the economic savings to society would equate to over $300 million per 1000 housing units or in Melbourne's case $110,000,000,000 over the next 50 years.

Nicholson Street, East Brunswick study area

Current

Possible future

Riversdale Road, Hawthorn study area

Current

Possible future

Johnston Street, Abbotsford study area

Current

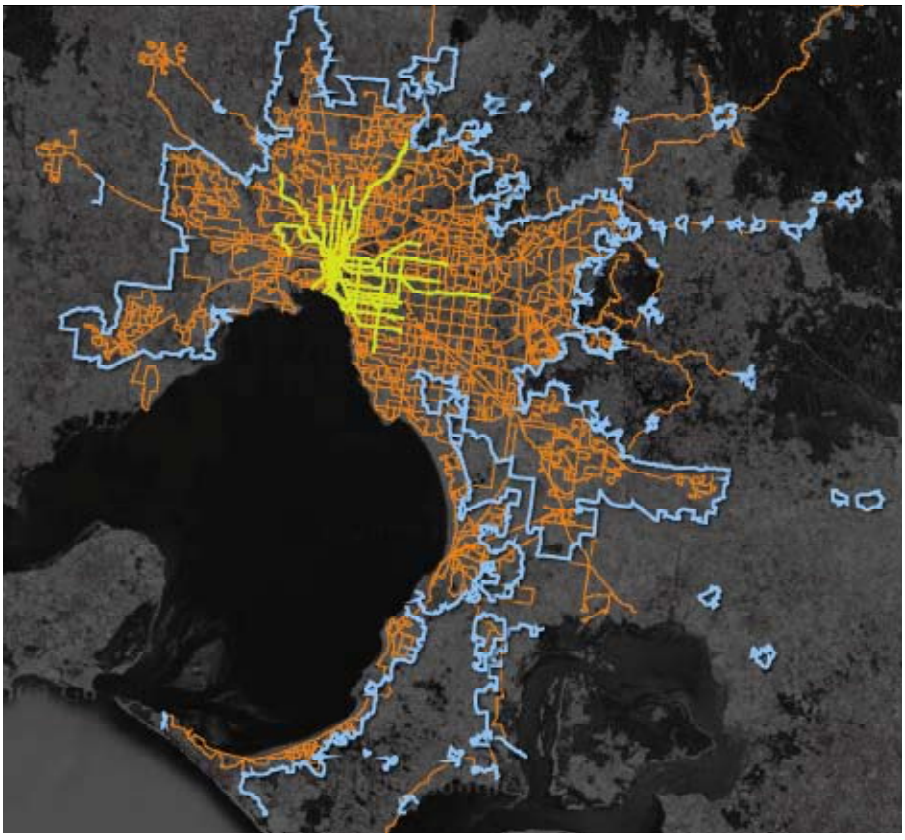
Possible future

Development capacity of Urban Corridors

This study looks at the potential yield that could accrue from this approach to intensification of the urban corridors. A number of assumptions, as illustrated below, were made in determining the potential for future development along these tram and bus corridors.

The results, as can be seen below, is that over 2 million people could be accommodated along these routes – providing affordable, well positioned accommodation without the need to subdivide any further land or extend the current growth boundaries. This could all take place using existing commercial delivery modes and saving up to $110,000,000,000 over 50 years.

The secret is to recognise the need to transform our existing infrastructure rather than building and expanding in the hope that increased size will improve our capacity.



Urban centre = 3,371,888 (2006)

Melbourne Statistical District = 3.9 million (2009)

Note: entire bus network is shown

Urban growth boundary

Tram/Light rail network

Bus network

Steps in calculating developable sites along Urban Corridors

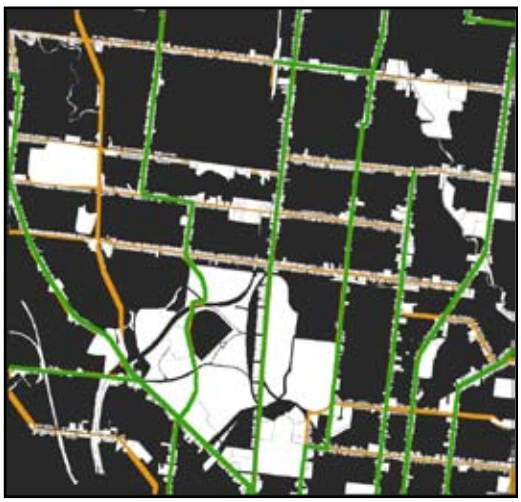
Refer to Appendix 1 for extended methodology

1 Identify cadastral parcels

Melbourne metropolitan
cadastral parcels: 1,571,532

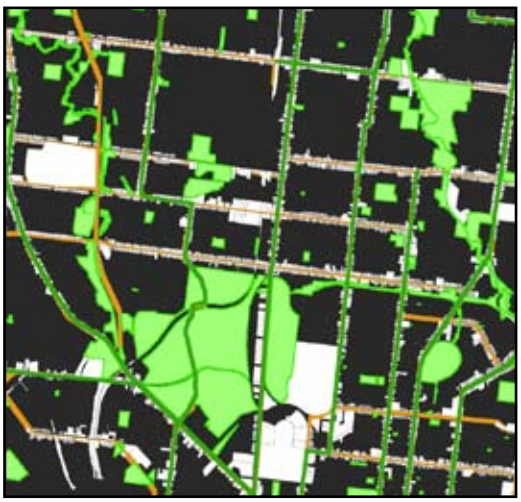
2 Remove special building zones
(CBD, Southbank, Docklands, St Kilda Rd)

Total Melbourne
metropolitan sites = 1,569,116



3 Then select parcels along tram
and priority bus routes

Potential sites (tram routes) = 27,156
Potential sites (bus routes) = 98,132
Total = 125,288



4 Remove areas in parks

Potential sites (tram routes) = 23,505
Potential sites (bus routes) = 95,450
Total = 118,955

5 Remove public use and industrial zones

Potential sites (tram routes) = 23,202
Potential sites (bus routes) = 91,252
Total =114,454

6 Remove sites without rear laneway access

Potential sites (tram routes) = 18,188
Potential sites (bus routes) = 22,440
Total = 40,628

7 Remove recently developed sites and sites in planning (DPCD)

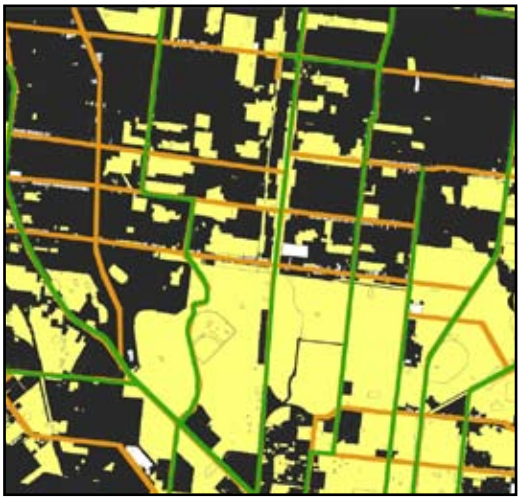
Potential sites (tram routes) = 18,118
Potential sites (bus routes) = 22,138
Total = 40,256

8 Remove heritage register buildings

Potential sites (tram routes) = 17,726
Potential sites (bus routes) = 22,038
Total = 39,764

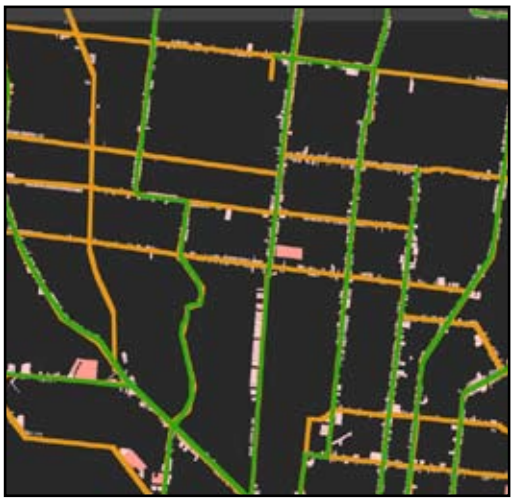
9 Remove sites with frontage <6m

Potential sites (tram routes) = 16,307
Potential sites (bus routes) = 21,973
Total available sites = 38,280



10 Remove 50% of sites within the heritage overlay

Potential sites (tram routes) = 13,439
Potential sites (bus routes) = 21,038
Total = 34,477



11 **Available sites**

Final total = 34,477

Developable sites along Urban Corridors – study results

As outlined here, urban design criteria were applied to identify the developable sites adjacent to Melbourne's transport infrastructure (tram line, priority bus line) with a view to calculating the potential developable sites along urban corridors.

	Adjacent to tram lines	Adjacent to Priority Bus Lines	Total
Developable sites – as per urban design criteria	13,439	21,038	34,477
Area of developable sites (ha)	1,418	5,275	6,693
Current population of developable sites	42,540	158,250	200,790

Development capacity of Urban Corridors

The number of developable sites was then used to calculate the development capacity of the urban corridors if two alternative density scenarios are applied.

	Net population increase
Low density (180 people per hectare)	1,003,950
High (400 people per hectare)	2,476,410

In summary this demonstrates that Melbourne's Urban Corridors could accommodate a potential population increase of up to 2,476,410 people.

Disclaimer

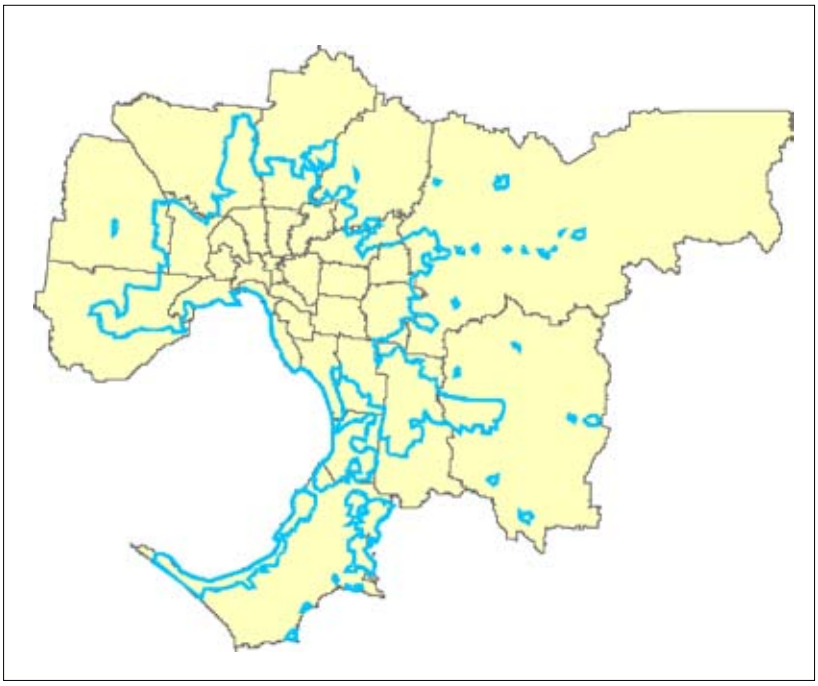
Data has been collected from a variety of sources including VicRoads, Department of Planning and Community Development (DPCD) and Department of Transport.
Each dataset has been collected to various levels of accuracy, completeness and currency.
Where data is not available it has been derived. For example rear laneways have been derived based on gaps between cadastral parcels.

Distribution of Urban Corridors in Melbourne Local Government Areas

Local Government Areas (LGAs) are responsible for assisting the State Government in planning for Melbourne's future growth. Using the LGA boundaries the potential distribution of urban corridors was determined in order to attribute potential development opportunities to each LGA within the Urban Growth Boundary.

Background

The area within the Urban Growth Boundary consists of approximately 224,895ha of land and contains 12 LGAs and intersects a further 19 LGAs.



Intersection between LGAs and the Urban Growth Boundary across Metropolitan Melbourne

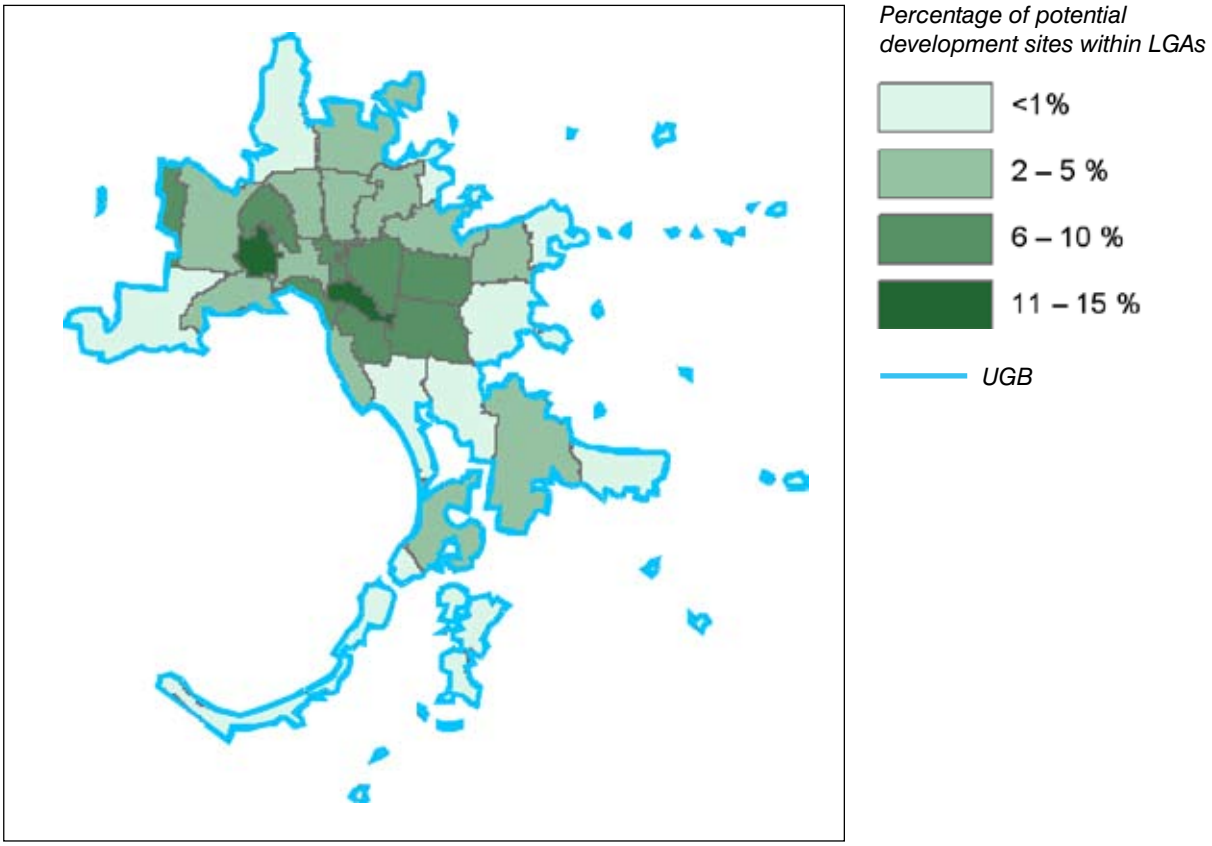
UGB

40

This table illustrates the proportion of each LGA that falls within the UGB as well as the area for potential development along the transport corridors.

LGA	LGA area (ha)	LGA area within UGB (ha)	% LGA within UGB	Area (ha) along urban corridors	% impact on LGA area within UGB
Banyule	6,253	6,253	100	205	3
Bayside	3,698	3,620	98	192	5
Boroondara	5,999	5,999	100	537	9
Brimbank	12,342	11,120	90	190	2
Cardinia	128,100	8,304	6	1	0
Casey	40,997	17,710	43	398	2
Darebin	5,345	5,345	100	288	5
Frankston	12,958	8,554	66	141	2
Glen Eira	3,869	3,869	100	312	8
Greater Dandenong	12,958	9,088	70	100	1
Hobsons Bay	6,425	5,683	88	112	2
Hume	50,392	12,434	25	185	1
Kingston	9,136	8,513	93	108	1
Knox	11,388	9,433	83	91	1
Manningham	11,351	7,143	63	226	3
Maribyrnong	3,123	3,123	100	432	14
Maroondah	6,139	5,933	97	94	2
Melbourne	3,623	3,604	99	128	4
Melton	52,771	3,606	7	202	6
Monash	8,148	8,148	100	480	6
Moonee Valley	4,427	4,427	100	244	6
Moreland	5,097	5,097	100	217	4
Mornington Peninsula	72,373	19,175	26	51	0
Nillumbik	43,303	3,416	8	35	1
Port Phillip	2,062	2,052	100	120	6
Stonnington	2,565	2,565	100	309	12
Whitehorse	6,428	6,428	100	613	10
Whittlesea	49,012	10,800	22	362	3
Wyndham	54,223	14,491	27	116	1
Yarra	1,954	1,954	100	194	10
Yarra Ranges	247,000	7,007	3	11	0

Total Area within UGB = 224,895ha
Total Area along urban corridors = 6693ha
Urban corridors represent 3% of land within UGB



Percentage potential urban development sites by LGA within the UGB

The above map illustrates the percentage of potential development sites by LGA within the UGB as a thematic map.

Based on the calculations the inner LGAs host a higher proportion of tram and bus lines and thus the opportunities for increased density is present on a greater number of small sites as reflected in the map. In contrast when urban corridor sites are located in the outer LGAs they tend to be very large and also provide significant opportunities.

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The development potential of each LGA was then explored in terms of two density scenarios previously applied to the total available area.

The following assumptions were made:

1. High scenario 400 people per hectare
2. Low scenario 180 people per hectare
3. Each dwelling contains 2 people
4. Currently there are 30 people per hectare living along the transport corridors

	Net Population Increase		Net Dwellings Increase	
Local Government Area (LGA)	**Low (180 people/ha)**	**High (400 people/ha)**	**Low (90 dwellings/ha)**	**High (200 dwellings/ha)**
Banyule	30,783	75,932	15,392	37,966
Bayside	28,759	70,939	14,379	35,469
Boroondara	80,561	198,718	40,281	99,359
Brimbank	28,481	70,253	14,241	35,127
Cardinia	187	462	94	231
Casey	59,693	147,242	29,846	73,621
Darebin	43,131	106,391	21,566	53,195
Frankston	21,183	52,251	10,591	26,126
Glen Eira	46,781	115,392	23,390	57,696
Greater Dandenong	15,026	37,064	7,513	18,532
Hobsons Bay	16,796	41,431	8,398	20,715
Hume	27,773	68,508	13,887	34,254
Kingston	16,228	40,028	8,114	20,014
Knox	13,580	33,497	6,790	16,749
Manningham	33,895	83,608	16,948	41,804
Maribyrnong	64,866	160,003	32,433	80,002
Maroondah	14,056	34,671	7,028	17,335
Melbourne	19,164	47,272	9,582	23,636
Melton	30,240	74,592	15,120	37,296
Monash	72,005	177,614	36,003	88,807
Moonee Valley	36,623	90,336	18,311	45,168
Moreland	32,543	80,273	16,272	40,137
Mornington Peninsula	7,598	18,741	3,799	9,370
Nillumbik	5,288	13,044	2,644	6,522
Port Phillip	18,074	44,582	9,037	22,291
Stonnington	46,322	114,260	23,161	57,130
Whitehorse	91,942	226,791	45,971	113,395
Whittlesea	54,231	133,771	27,116	66,885
Wyndham	17,405	42,933	8,703	21,466
Yarra	29,118	71,824	14,559	35,912
Yarra Ranges	1,617	3,988	808	1,994

	Low	High
Total population increase (people)	**1,003,950**	**2,476,410**
Total dwelling increase (dwellings)	**501,975**	**1,238,205**

Benefits of Urban Corridors

The major benefit of this approach is that Australian cities could immediately start to move to improve their long term liveability, economic productivity and environmental sustainability, through the positive forces of the private market system, and achieve this by only changing about 3% of the existing footprint of the city. More specific benefits include the following:

> With increased densities resulting from medium rise development along corridors, substantial population growth can be accommodated in the existing urban area, easing pressures on fringe green space and agricultural land.

> These increased densities will support a wider array of services and experiences for residents and visitors.

> The economics of providing high quality public transport services along denser corridors would improve.

> High quality, calmed public transport streets with continuous active frontages would provide a safe and vibrant pedestrian environment.

> Environmental excellence in energy, water and waste management would minimise the need for upgrading existing or new infrastructure.

> Reduced car dependency would assist transport disadvantaged people.

> An increased pool of affordable housing would become available, provided through the market.

> The application of good urban design principles, such as high quality public realm, clear definition between public and private space, active street frontages, sun and weather protection would improve the quality of urban space.

> Production of mixed use development would result in greater accessibility to local work, services and recreation opportunities.

> New ‘high streets’ connecting activity centres provide an urban experience close to suburbia.

Productive suburbs: areas of stability

Australians have a love affair with the suburban block with its detached single dwelling and extensive greenery. This deep seated empathy is not going to change in the short term nor are these areas going to be rebuilt by 2029. Attempting to retro-fit significantly increased density development in areas not well serviced by public transport is unlikely to be a viable proposition. Instead we need to enhance the quality of these areas, while introducing greater sustainability.

These areas can become the new 'green wedges' of our future cities, working in conjunction with the urban corridors and activity centres, and providing alternative but complementary qualities of residential experience. These areas should become greener, capable of collecting and purifying storm water, generating renewable energy and with more productive back yards so as to reduce the overall ecological footprint of the city, making it more sustainable.

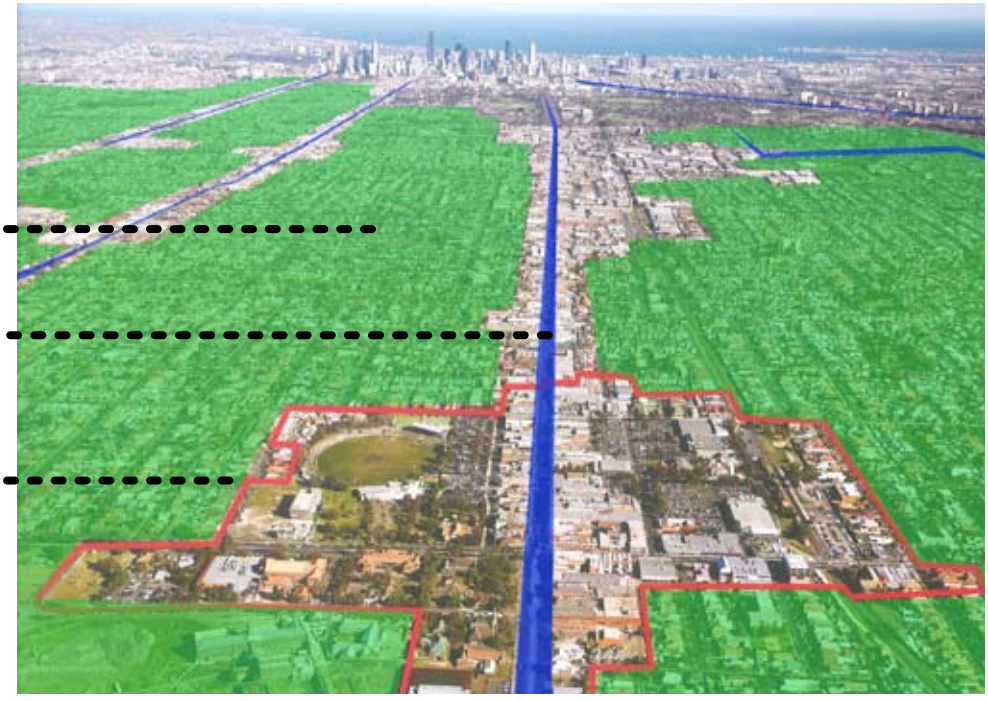
New 'green wedges'

45

'This approach will see the majority of the city, namely the suburbs, remain largely in their current although improved form'

While corridor development is not a new idea, the idea of linking it to a consolidation of suburbia is.

If this part of the 'new paradigm' is to receive community acceptance, then it needs to be clearly understood that creating the suburbs as 'areas of stability' is fundamental to successful implementation. It is also important to reinforce the idea that this approach will see the majority of the city, namely the suburbs, remain largely in their current although improved form.



'If a comprehensive approach to change becomes mandatory...the community will usually accept this change'

Some of the requirements for areas of stability to work successfully are as follows.

> The areas of stability need to be clearly designated.

> A maximum height limit, of say three storeys, needs to be placed over all these areas.

> Any new development within these areas needs to reinforce the character of these areas, namely as green suburbs.

> The streets within these areas need to become well-treed 'bio links' and slow speed, safe pedestrian environments. Water sensitive urban design treatments need to be installed to slow over ground water flows and allow time for stormwater to be cleansed and absorbed into the groundwater.

> All properties, old and new, should be required to collect their stormwater and greywater.

> Precinct-wide sewer mines should be introduced to water local parks and gardens.

> Wind and solar energy generation on all properties should be a requirement and be facilitated through standard nationwide feed in tariffs.

> Waste collection from properties should be minimised and infrequent so as to encourage recycling and reuse.

> Back yards should be encouraged to become water sensitive and productive.

> All new and old houses should be required to become energy and water efficient to the highest possible standards.

As has often been illustrated, if a comprehensive approach to change becomes mandatory, such as water rationing, the community will usually accept this change. This is where political leadership and courage are required.

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Corner of Curtain and Station Streets, North Carlton, before

After (demonstrates the minimising of the impact of the corridor development on the streets behind)

Potential resources of productive suburbs

A study of inner, middle and outer suburban areas would indicate that they have the ability to not only be self-sufficient but capable of supporting the adjacent dense corridors. The following is a summary of the key findings:

> The gross energy demands in these areas by 2036 will increase by 14%, 50%, and 44% for inner, middle and outer case study areas respectively, assuming a 25% decrease in demand-side usage.

> The total roof space required to service existing and increased demand per dwelling is 16, 22 and 28 square meters for inner, middle and outer case study areas.

> With stringent demand-side management (eg. reduction by 45%), rainwater collection off 100% of residential roof space, supported by greywater collection and reuse, could meet 100% of our domestic requirements.

'This design approach plays to one of the strengths of all Australians, namely the do-it-yourself culture of our country'

Benefits of productive suburbs

If well-articulated, the major benefit of this approach will be community acceptance and buy-in. This is crucial as currently the conventional approaches to development and climate change are placing the responsibility for action beyond the reach and consciousness of the general public - it is seen as the government's problem not 'our' problem.

By crafting the solution back into the Australian dream – the suburban block – this design approach plays to one of the strengths of all Australians, namely the do-it-yourself culture of our country. Besides the community benefit described above, the following are some of the detailed benefits accruing from productive suburbs:

> The existing housing stock is valued and upgraded with a view to the future.

> Houses become less consuming of energy and water and each household becomes more self-sufficient. Australia becomes a country where every house generates much of its own energy, which it feeds into the grid at peak demand times and draws out of the grid at low demand times. The income from feed-in tariffs reduces the burdens of utilities on low income families.

> Greater tree planting reduces the heat island effect of our cities and increases carbon sequestration. It is estimated that $1 spent on tree planting yields $5.6 in benefit to a city. Also if street trees were to provide bio-links for fauna and flora we would assist in retaining our biodiversity.

> By harvesting stormwater and wastewater, less pressure is placed on our natural systems in terms of both demand and pollution.

> Precinct-based sewer mines provide water for parks and gardens but, more importantly, free up capacity in existing sewer systems for increased densities, avoiding the need for significant investment in new infrastructure. Also, the by-products of sewer mining are dealt with through existing treatment plants.

> The increase in productive back yards and a reduction in hard waste both have beneficial long term impacts on reduction of travel and landfill.

> Recent experience has shown that incentives applied to renewable energy installation and use dramatically reduce the costs of these products and help stimulate local industry and employment.

Implementation

One of the key issues arising from Melbourne 2030 was the inability to implement the strategy rapidly enough to give confidence to the community and the development industry. The key to implementation is the ability to provide simple pragmatic guidelines and then use exemplar projects that can quickly and successfully produce results that demonstrate the efficacy of the new approach.

In a recent study produced for the Victorian Department of Planning and Community Development by SGS et al. a simple one page set of Urban Design Guidelines were developed that were capable of ensuring high quality urban design outcomes. If these guidelines were to be tested along a designated tram route such as Nicholson Street in North Fitzroy or Lygon Street in North Carlton, where there is sufficient road width to give dedicated road space to trams, it would be possible to illustrate the results within a few years.

A similar exercise was trialled in Swanston Street, Carlton during the late 90s where height limits were increased along the tram corridor. The result was a rapid increase in densities with little impact on the adjacent residential area. Another area currently under consideration is the Coburg Initiative which has the advantage of both a mature Activity Centre as well as a mature Urban Corridor. The only limitation would be the need to limit car access to Sydney Road during commuter times so as to give preferential treatment to public transport.

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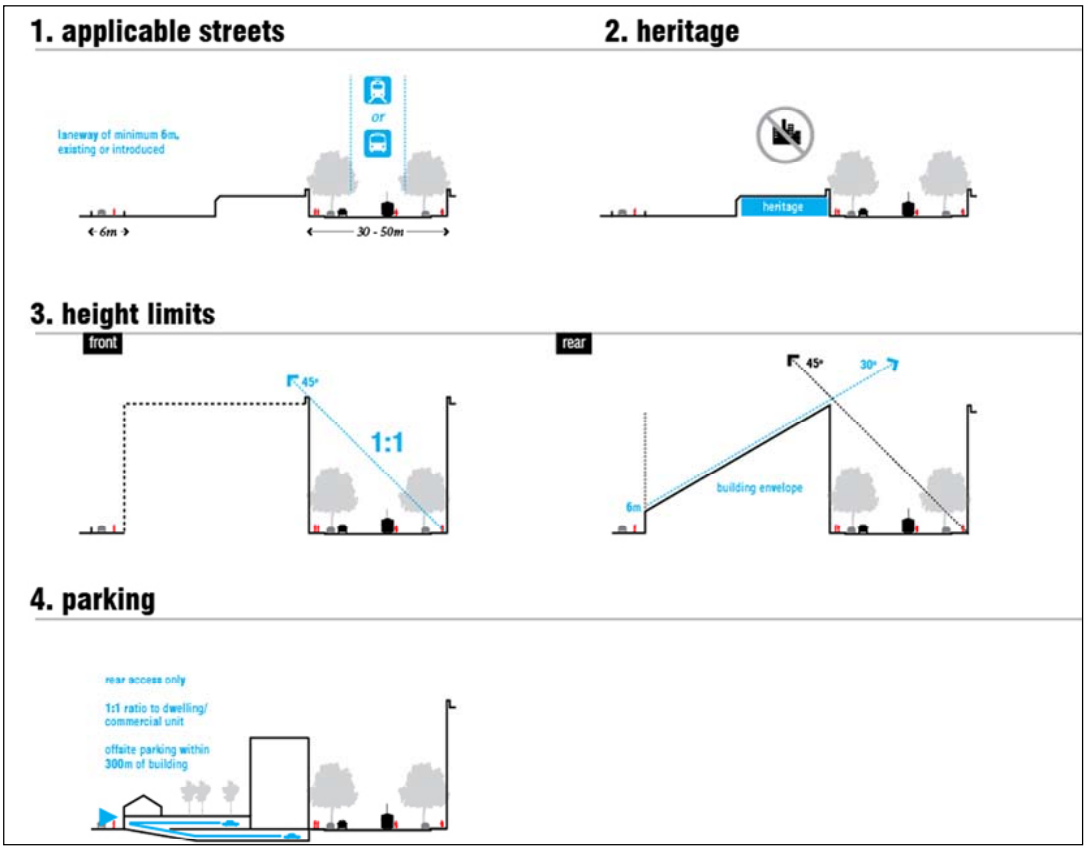
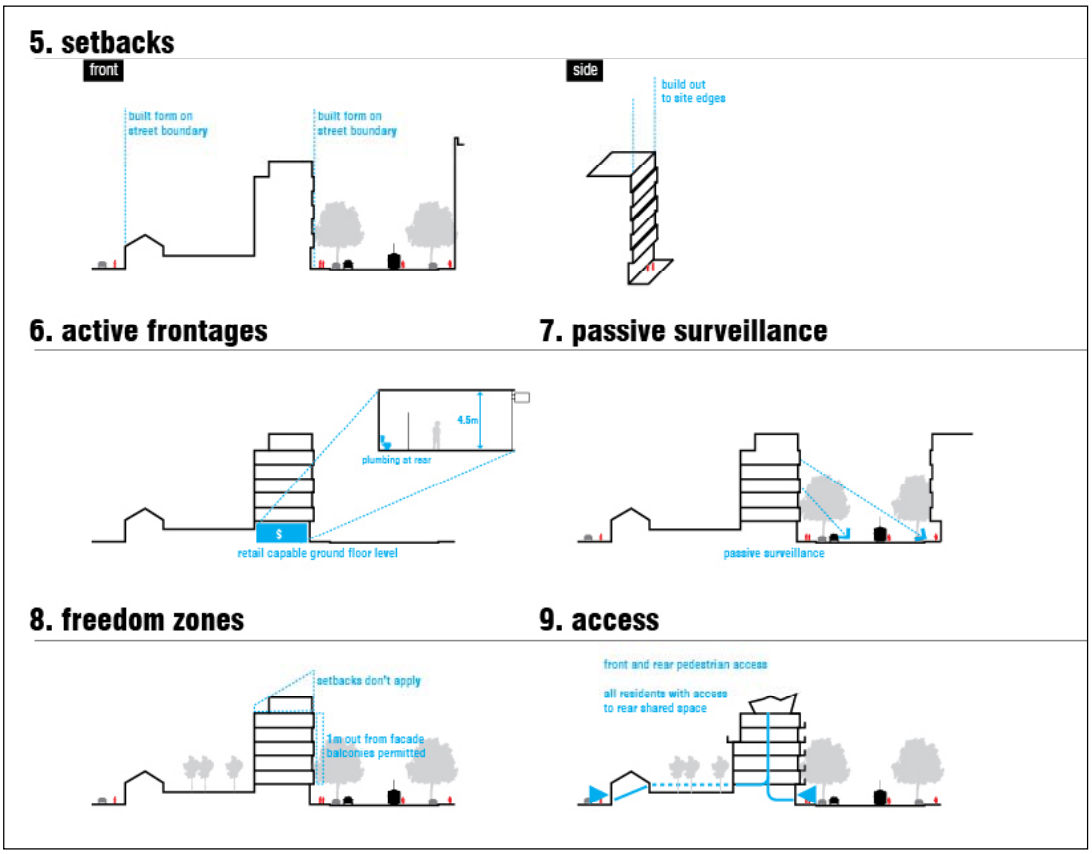
Design development overlay





Source: Department of Planning and Community Development

Concluding remarks

Australia requires a big shift in the way it visualises its cities and infrastructure. We need to break the myth that higher densities mean high rise development. More importantly, we need to quantify all the hidden costs (external costs and underpriced infrastructure) of continuing to build at low density on the periphery of our cities, and reinvest these hidden costs in making higher density Urban Corridors viable.

A related shift in thinking is to recognise that our cities are not necessarily best served by large scale infrastructure. Current thinking that power generation and water supply can only succeed through the provision of large centralised infrastructure limits our options and ability to not only climate proof our cities, but also defend them against the extreme weather events. Smaller distributed solutions are not only more efficient and economical in their requirement and use of distribution networks but are also, as a result of their distributed nature, less vulnerable to extreme circumstances.

$20 billion invested in conventional infrastructure, through the new Commonwealth Building Australia Fund, will give us conventional outcomes. $20 billion invested in 'new age' technologies could see us become a world leader. The proposal to transform our cities is one that relies on small investments at all levels of Local, State and Federal Government, with complementary private investment encouraged by government policy direction. It has the potential to deliver huge long term benefits in terms of more sustainable and resilient urban systems, agglomeration benefits in both production and consumption, and more engaged citizens. The end result will be a transformation of our cities, and nothing less will resolve the current problems confronting us.

At a time of global financial crisis, Australia, with its relatively strong economy, is uniquely positioned to catch up with its European counterparts by setting strategies for future infrastructure development that would not only strengthen and broaden our technological base but place us at the front of the field in future city making.

References

Trubka, R., Newman, P. and Bilsborough, D. 2008, *Assessing the Costs of Alternative Development Paths of Australian Cities*. Curtin University and Parsons Brinckerhoff.

SGS, Design Urban and City of Melbourne 2009, *Residential Intensification in Tramway Corridors for Department of Planning and Community Development*

Griffith University Urban Research Program VAMPIRE index, Dr Jago Dodson and Dr Neil Sipe 2008, *Unsettling Suburbia: The New Landscape of Oil and Mortgage Vulnerability in Australian Cities*

Kim Dovey et al, University of Melbourne architectural research paper, 2009

Acknowledgements

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TRANSFORMING AUSTRALIAN CITIES

FOR A MORE FINANCIALLY VIABLE AND SUSTAINABLE FUTURE

Transportation and urban design

APPENDIX 1
URBAN GROWTH CORRIDORS METHOD AND RESULTS

city of Melbourne

Victoria
The Place To Be

URBAN GROWTH CORRIDORS
DRAFT METHOD AND RESULTS

Table of contents

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This section of the report outlines the method used to identify the capacity of sites along the tram and bus network.

1. Aim

This study aims to estimate the potential population capacity, of sites located along the tram and bus network within metropolitan Melbourne, if residential intensification was to be encouraged according to best practice urban design principles.

2. This report

This report focuses on the rationale for undertaking the analysis, along with the method and results.

3. Study area

The study area is the bus and tram network across Metropolitan Melbourne (Figure 1).

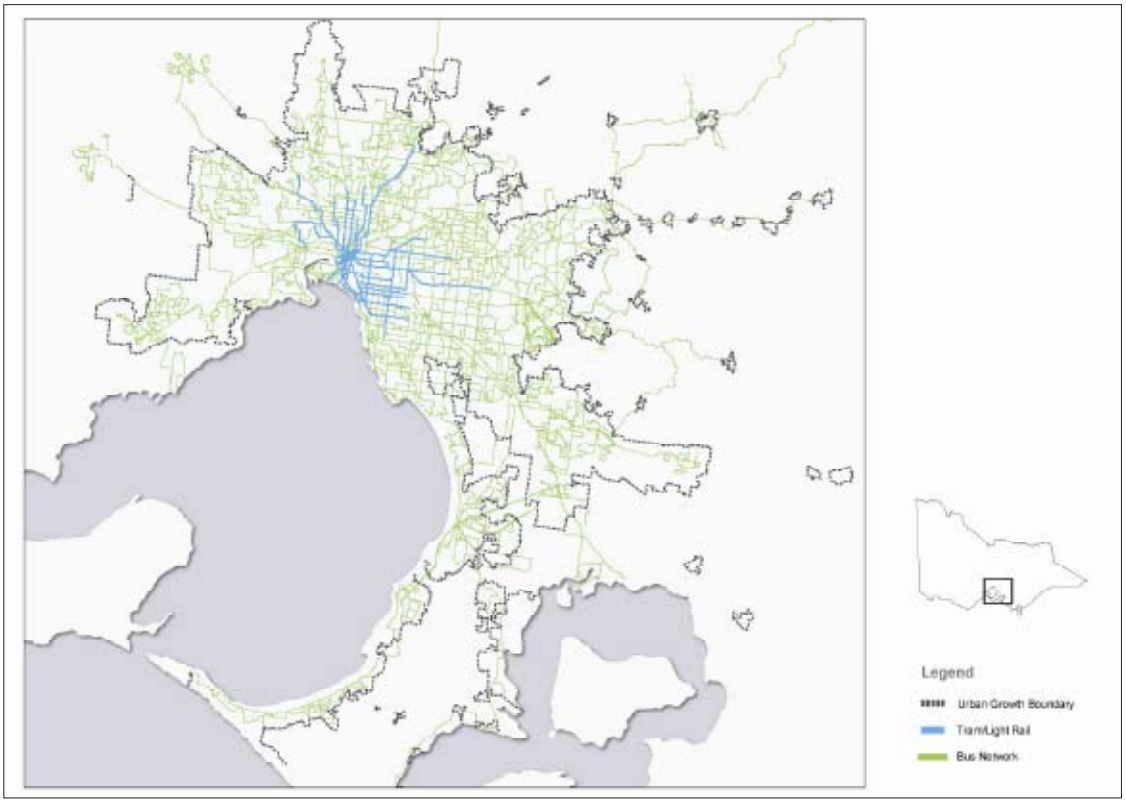

Figure 1: Tram and Bus Network across Metropolitan Melbourne.

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4. Approach

To achieve the aim the work program was divided into the following three stages

1. Develop a model to assess if sites along the tram and target bus network are appropriate for redevelopment.

2. Calculate the current population density along tram and bus corridors

3. Develop density scenarios for the sites identified based on international city comparisons.

Stage 1: Model development - method

To begin, seven datasets were identified and sourced from the following organisations:

(1) Cadastral Parcels
(Source: DSE, Date: 2008)

(2) Tram and Bus Network
(Source: DoT, Date: 2007)

(3) Heritage Register
(Source: DPCD, Date: 2008)

(4) Heritage Overlay
(Source: DPCD, Date: 2008)

(5) Public Use, Mixed Use and Industrial Zones
(Source: DPCD: 2008)

(6) Recently Developed sites and sites Currently in the planning process
(Source: DPCD: Date 2007)

(7) Rear laneways
(Derived based on the Cadastre)

(8) Target Bus Routes*
(Source: Bus Association of Victoria 2008)

**Target Bus Routes are bus routes identified by Bus Association of Victoria as having priority for transport connections and opportunity for densification.*

These eight data sets formed layers which have been incorporated into a Geographical Information System (GIS) for visualisation, analysis and interrogation of the data. Figure 2 is a conceptual model of the integration of data within the GIS. Each of the eight steps and assumptions made throughout the model development are described below.

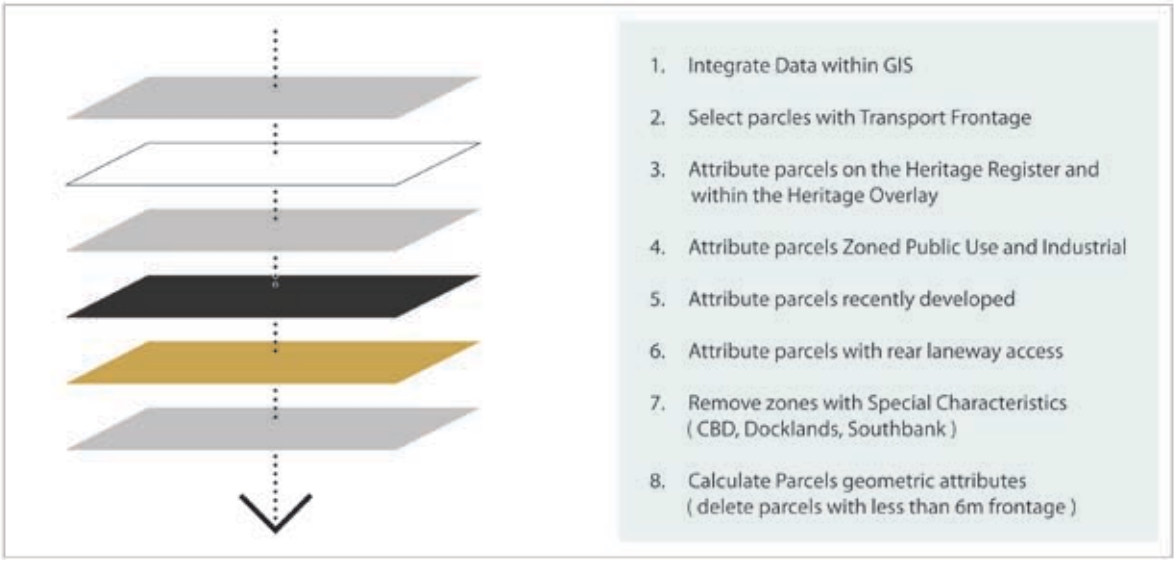


Figure 2 Method of data integration and capacity scenario development

Step 1 – Integrate data within GIS

To begin, the datasets were formatted into ESRI shape file format (.shp). It should be noted that although these are the latest available datasets they have been collected from a range of data sources and have been collected to various levels of currency, accuracy and completeness.

It is important to note that at this stage data processing has taken place to remove duplicate records. This process removes the potential problem of double counting.

Step 2 – Select parcels with transport frontage

Cadastral parcels with frontage to tram lines and target bus routes were selected and extracted. This process required buffering the tram lines and target bus routes and selecting parcels within the buffer, manual editing was then used to delete parcels which did not have a frontage to the tram network.

Step 3, 4 & 5 – Attribute parcels based on spatial location

From the potential parcels layer created in Step 2 spatial selection was used to identify parcels which have their centroid within parcels which are on the heritage register, Heritage Overlay, Planning Zones (Public Use and Industrial), Public Parks and Recreation Zones and/or recently developed sites. A field was added to the potential sites data layer to identify each of these parcel characteristics.

Step 6 – Attribute parcels with rear laneway access

Calculating the rear laneway access involved merging adjacent property parcels, the spaces between parcels were assumed to be road access. This dataset was then split at the vertices and lines with frontage to the tramways were deleted. The remaining lines were assumed to be laneway or rear access points. The potential sites were then selected based on an intersection with the laneway of rear access points. The selected sites were attributed as 1 for laneway access or 0 for no rear access.

Step 7 - Remove Zones with Special Characteristics

This step involved the deletion of sites within the CBD, Southbank and Docklands. These sites have very high density potential with defined high density height limits already in place.

Step 8 - Calculate parcels geometric attributes (Frontage, Depth and Area)

First the area was calculated using the standard function within ArcGIS. Second each parcel has been simplified and split into lines at the major vertices, lines with frontage to the road were selected using a buffer and their length calculated, these have been joined spatially to the land parcels and constitute the parcel frontage. Parcels with a frontage of less than six meters have been deleted; this is because of the assumed access restrictions to the sites and the limited redevelopment potential. Third, the depth for each parcel was calculated using the formula Depth = Area/Frontage. This assumes that each parcel is approximately rectangular.

Stage 2: Current population density

The current population density has been calculated based on the selecting Mesh Blocks along tram corridors (excluding “special zones” CBD, Southbank and Docklands). The density of these Mesh Blocks is then calculated.

Stage 3: Density scenario

Once the data has been prepared, scenarios can be applied to ascertain the potential capacity of identified sites. In this instance the density scenario chosen is in accordance with the following criteria:

1. No change to Public Use, Industrial or Public Park and Recreation Zones (PPRZ)

2. No residential development on land zoned for industrial use

3. No change to buildings listed on the heritage register

4. Only land parcels with rear or side road access have the potential for development

5. 50% of buildings in the Heritage Overlay have the potential to be developed

6. To avoid situations where sites are located on both tram and target bus routes, the tram routes have been given priority and these sites were removed from the bus routes.

7. A population density factor has been applied. This factor was ascertained by analysing developments along transport corridors from overseas (see figure 3) and ongoing research into developments currently under construction and recently completed within Melbourne.

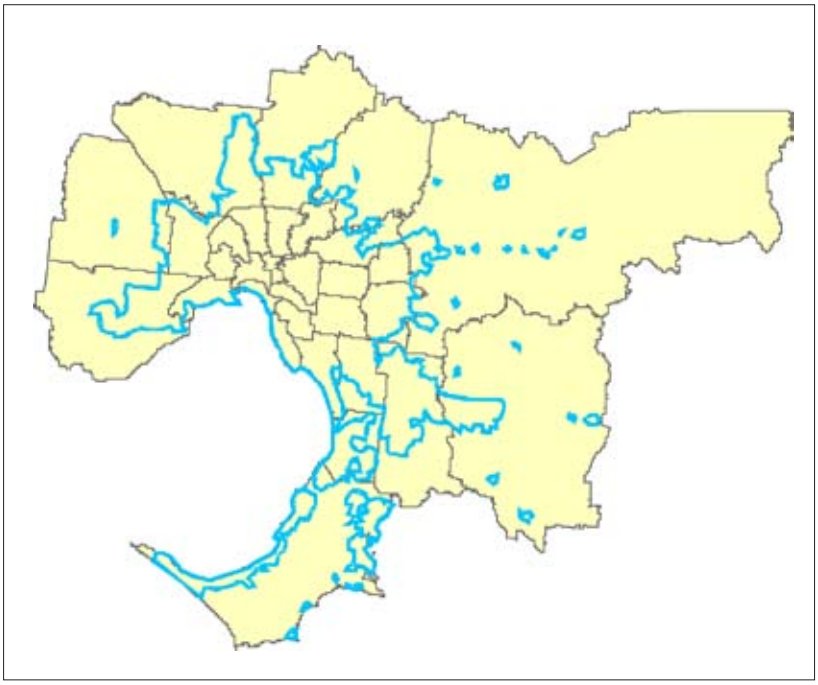
Once the model has been implemented potential sites remain and density ratios applied to ascertain the potential capacity of these sites. The results and assumptions are discussed further in section 5.

Stage 4: Application to local government areas

Method
To establish the area for each LGA within the UGB the following steps have been undertaken:

Step 1 Intersect the LGA boundaries with the UGB so that the areas of the LGAs are clipped by the UGB.

Step 2 Calculate the Area of the LGA and compare with the original LGA area to establish the proportion of the LGA which falls within the UGB.



Intersection between LGAs and the Urban Growth Boundary across Metropolitan Melbourne

UGB

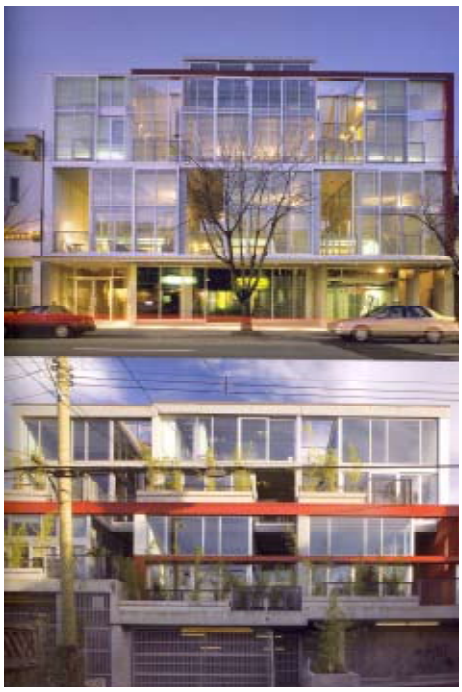
Tallinn, Estonia

Population density per ha
237

Mexico City, Mexico

Population density per ha
449

Vancouver, Canada



Population density per ha
553

Vienna, Austria

Population density per ha
903

5. Results

The summary of results is outlined in Table 1 below. In calculating the results the following assumptions have been made.

> Household size = 2 persons (refer to Note 1 which outlines the household size by House Type for Metropolitan Melbourne).

> Current Density = 30 people per ha (This has been calculated based on the selection of Mesh Blocks along the tram and target bus routes).

> Future Population Density = between 180 and 400 people per hectare (This assumption is based on a selection of developments overseas, figure 3, and internal research into local examples of developments currently taking place).

Using the land area calculated based on the density scenario and subtracting the current population provides an estimate of the potential population along the tram and target bus routes.

	Tram	Priority Bus Lines
Sites available for densification	13,439	21,038
Total area	1,418	5,275
Current Density	30	30
Current Population	42,540	158,250

Proposed density range 180 – 400

	Low	High
Net Population Increase	1,003,950	2,476,410
Net Dwelling Increase	501,975	1,238,205

Table 1: Summary of results

Total net population increase

In total there were 34,477 sites identified adjacent to tram and target bus routes within the Melbourne Inner Growth Boundary which meet the criteria for development. The potential population capacity of these sites is between 1,003,950 (501,975 dwellings) and 2,476,410 (1,238,205 dwellings) (based on a density factor of 180 to 400 respectively).

6. Advantages of the model

It should be noted that the approach used in this study is flexible and additional data can be added and a range of scenarios tested. For example changes to the transport network, or changes to the development criteria can be added and the results retested.

7. Limitations

1. Site compactness

The assumption that sites are rectangular may not apply. One potential solution to this is to apply a compactness measure to test the degree of compactness. The compactness measure is based on a circularity ratio, which is compares the ratio of the area and perimeter to that of a circle having the same perimeter.

The formula for the ratio is $M = 4\pi$ (area)/(perimeter)2

As M approaches 0, the shape approaches a long or irregular shape;

As M approaches 1, the shape approaches a compact shape, time permitting further investigation into the shape and density yields would be undertaken.

2. Subdivided blocks

In some situations small subdivisions have taken place and due to the structure of the land parcels the centre or side road area has also been selected for possible development. These cases were randomly assessed and because the area is relatively small (ie. Approximately 1/3 of the total site) we have opted to retain these parcels within the model.

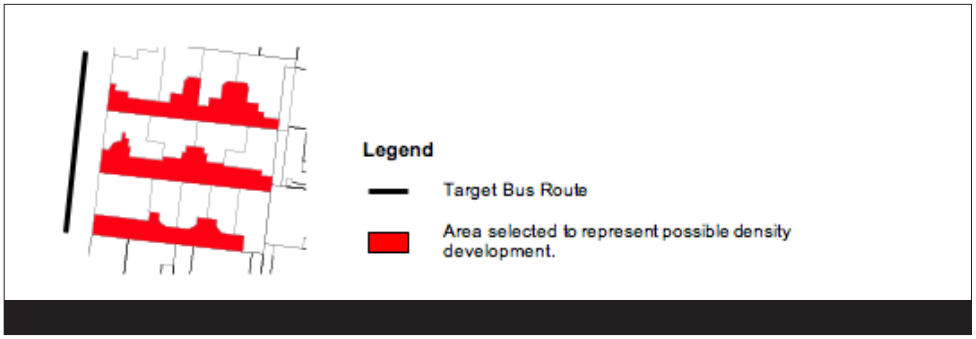


Figure 3: Example of subdivided parcels included in the analysis

3. Verges/Barriers

Some parcels are adjacent to the tram bus routes however they are separated by small slivers of land (See Figure 6) – in some cases these are road barriers and in other cases they are separating verges which could incorporate a substantial level of change. Further work would be required to analyse the impact of these verges/barriers on the results.

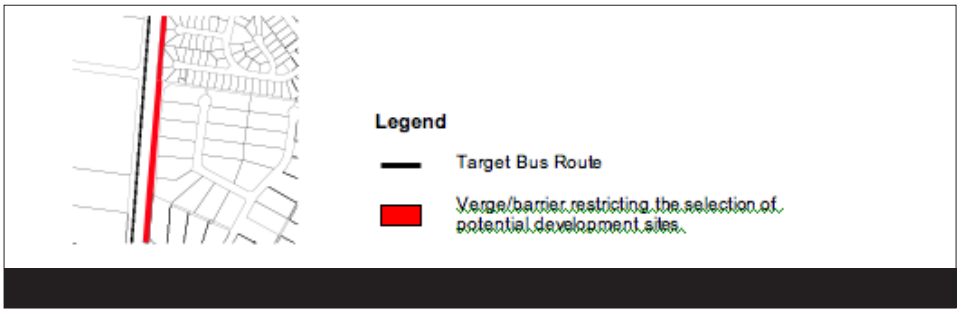


Figure 4: Example of verge or barriers which buffer the selection of potential sites

4. Data accuracy

Although the latest datasets have been obtained each data custodian has provided a disclaimer outlining that errors maybe present within the data.

8. Conclusion

This study uses spatial analysis to identify sites along tram and bus corridors across Metropolitan Melbourne. It has been conducted inline with the Metro 2030 vision in where sites for development are located within the Urban Growth Boundary whilst maximising access to transport.

In total the capacity of the sites identified through this study have the potential to yield a net population increase of between 1 million and 2.5 million depending on a high or low density ratio applied.

9. References

State Government of Victoria (2008) Urban Development Program MapsOnline Available Online: http://services.land.vic.gov.au/maps/content/udpintroduction (Date of Access 15/12/2008)

Department of Sustainability and Environment (2006) Know You're Area Available Online: http://services.land.vic.gov.au/knowyourarea/homepage.html Date of Access (18/02/09)

Note 1 - Household size

House Type	Average household size 2001 (a)	Average household size 2006 (b)
Separate house	2.89	2.87
Semi-detached, row/terrace, etc	2.03	2.13
Flat, unit or apartment	1.74	1.76
Other - Average household size	1.94	1.94
Total - Average household size	2.63	2.61

Source: (a) Department of Sustainability and Environment (2006)
(b) Data derived from ABS Census 2006

Disclaimer

To undertake this model and subsequent analysis data has been collected from a variety of sources including: VicRoads, Department of Planning and Community Development (DPCD) Department of Transport and Bus Victoria. Where data is not available it has been derived. For example rear laneways have been derived based on gaps between cadastral parcels. As a result each dataset has various levels of accuracy, completeness and currency. The accuracy of data collection/derivation will inevitably impact on the overall accuracy of the model.

Attachment B

METROPOLITAN PLAN
FOR **SYDNEY 2036**

Housing Sydney's Population

Housing is a critical factor in making Sydney a sustainable, affordable, liveable and equitable city. With Sydney's population projected to grow by 1.7 million to almost 6 million people by 2036, it will be essential to provide the right housing in the right locations.

Although Sydney's population is projected to grow by 40 per cent by 2036, the average household size will fall from 2.6 to 2.5 people, creating demand for more -- but smaller and more affordable -- homes. As a result, Sydney will need 770,000 additional homes by 2036 - a 46 per cent increase on the current 1.68 million homes.

The 2005 Metropolitan Strategy focused on the establishment of Sydney's North West and South West Growth Centres to accommodate new housing needs in greenfield areas.

This will be coupled with a stronger emphasis on achieving the most efficient use of existing urban areas where small, medium and large centres enjoy good access to services, jobs and public transport.

A well designed mix of medium density development in centres of all sizes will improve urban amenity, stimulate local economies and deliver new, energy efficient homes more suited to Sydney's changing population profile.

The Metropolitan Plan will help meet Sydney's future housing needs by:

- Locating at least 70 per cent of new housing within existing urban areas and up to 30 per cent in new release areas
- Locating at least 80 per cent of new homes within the walking catchments of existing and planned centres of all sizes with good public transport
- Setting new housing targets in Subregional Strategies and Local Environmental Plans
- Ensuring local planning controls include more low rise medium density housing in and around smaller local centres
- Examining ways to achieve the Federal targets for disability-friendly housing
- Improving housing affordability by exploring incentives to deliver moderately priced rental and purchase housing across all subregions
- Setting affordable housing targets for State urban renewal projects on a case by case basis
- Improving the quality of new housing development and urban renewal by strengthening the Government's role in ensuring good design outcomes
- Appointing SEPP 65 Design Review Panels for areas of high growth, including the Strategic Centres
- New urban renewal mechanisms including the Sydney Metropolitan Development Authority

http://www.metroplansydney.nsw.gov.au/StrategicDirections/HousingSydneysPopulation.aspx

ATTACHMENT C

STRATEGIC DIRECTION D

HOUSING SYDNEY'S POPULATION

Introduction

A stronger emphasis on achieving efficient use of existing urban areas where small, medium and large centres enjoy good access to services, jobs and public transport

Housing is a key factor in making Sydney a sustainable, affordable, liveable and equitable city. With Sydney's population projected to grow by 1.7 million to almost 6 million people by 2036, providing suitable housing in the right locations is a strategic direction of this Metropolitan Plan.

The 2005 Metropolitan Strategy focused on the establishment of Sydney's North West and South West Growth Centres to accommodate Sydney's needs for new housing in greenfield areas. The development of the Growth Centres will continue to 2036 and beyond to help meet Sydney's housing needs, but will be coupled with a stronger emphasis on achieving the most efficient use of existing urban areas where small, medium and large centres enjoy good access to services, jobs and public transport.

Well designed medium density development centres of all sizes will improve urban amenity, stimulate local economies and deliver new, energy efficient homes more suited to Sydney's changing population profile.

ENOUGH HOUSING

Although Sydney's population is projected to grow by 40 per cent by 2036, the average household size will fall from 2.6 to 2.5 people, creating demand for more—but smaller and more affordable—homes. As a result, Sydney will need 770,000 additional homes by 2036 —a 46 per cent increase on the current 1.68 million homes. (Department of Planning 2008a)

More than 93,000 extra dwellings were added to the Sydney region's total in the five years since *City of Cities*, with 86 per cent in the existing urban area and 14 per cent in new release areas.

Housing production in new release areas has been well below expectations in recent years, while new housing in existing urban areas has almost reached expected levels. Many of the actions in Housing Sydney's Population, therefore, seek to deliver more housing to keep pace with population growth and address housing affordability.

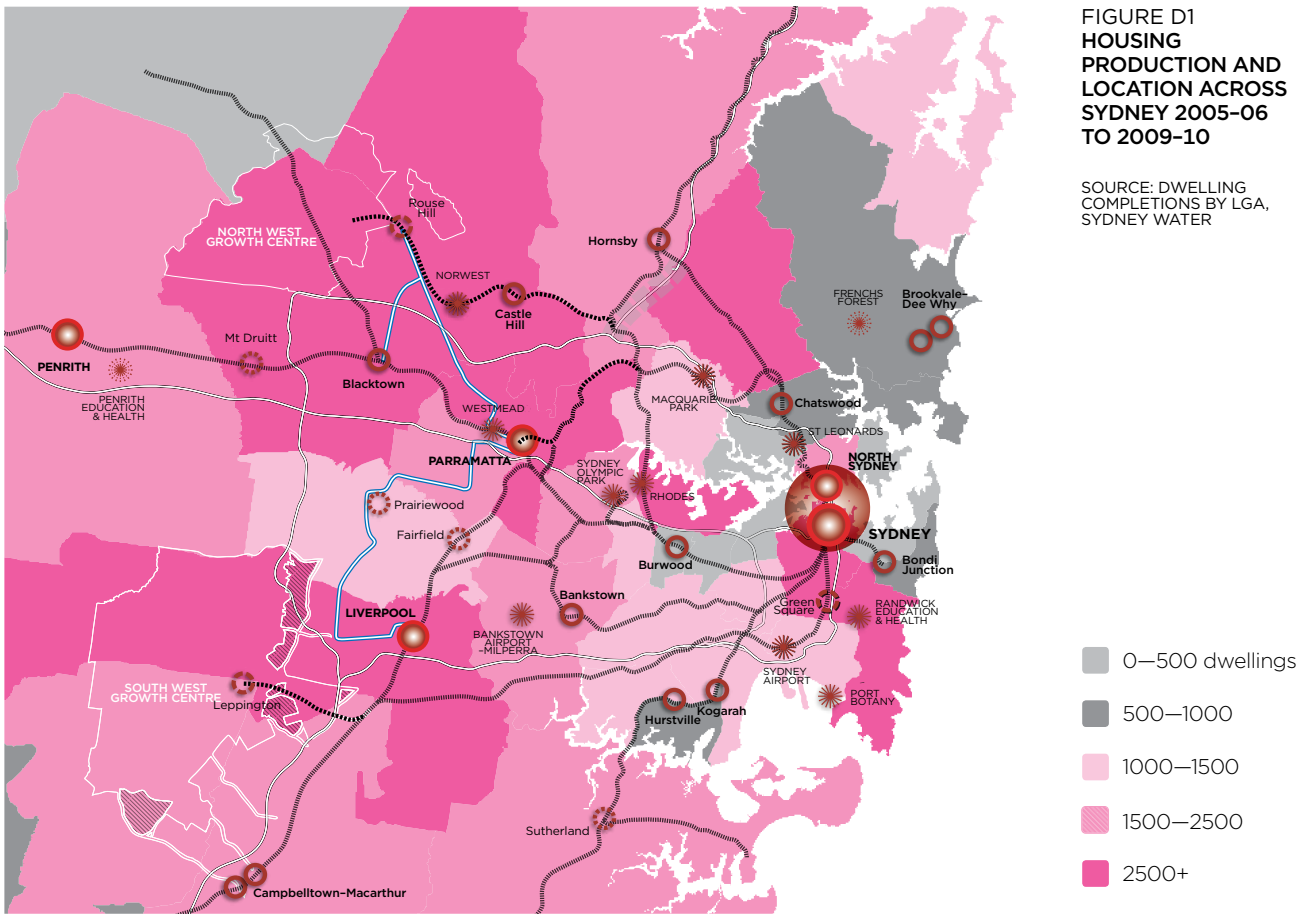


FIGURE D1
HOUSING PRODUCTION AND LOCATION ACROSS SYDNEY 2005–06 TO 2009–10

SOURCE: DWELLING COMPLETIONS BY LGA, SYDNEY WATER

APPROPRIATE LOCATION FOR HOUSING

The location of new housing is a valuable opportunity to address issues such as congestion, health, urban renewal, social and economic participation, public amenity and choice. A key action of this Plan is the aim to locate 80 per cent of all new housing within walking distance of centres of all sizes with good public transport (refer to Action B1.3 in *Growing and Renewing Centres*). The focus will be on all types of centres (refer to Appendix 5), but particularly the numerous local centres with access to transport and infrastructure that have experienced low levels of renewal over the past 10 years. Relevant *LEP* proposals will need to support this principle. This will reduce car dependence and make walking, cycling and public transport more viable to more residents.

Compact cities with pedestrian friendly streets, good access to public transport and a wide variety of services and amenities tend to be more accessible, environmentally efficient and cost effective. Areas with high accessibility and amenity are better suited for higher density living. The areas within walking distance of shops, services and public transport are termed centres—the size of the walking catchment and scale of a centre will vary. Each centre is unique and local councils will ultimately set height and design requirements; however, as a broad policy approach:

- all centres would have a minimum level of medium density, with low density reserved for heritage or physically constrained areas
- smaller local centres are suited to low–medium rise medium density housing, and
- larger local and Strategic Centres such as towns, Major Centres and regional cities are suited to medium–high rise medium–high density, with some low rise medium density in the outer parts of the walking catchment

This approach must adjust over time as many centres will grow into a different type of larger centre. Renewal in some centres will also be staggered in instances to suit infrastructure capacity, market conditions and avoid developing an area in a way that prevents a better outcome at a future date when it becomes viable.

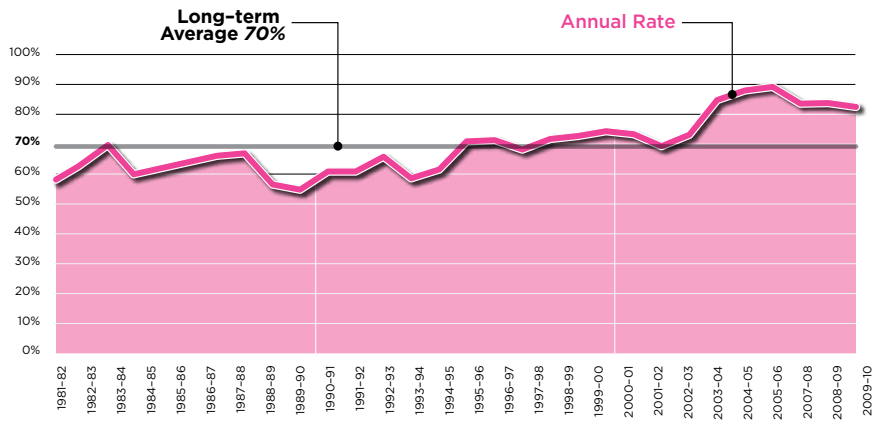
If new high density residential development is proposed outside the walking catchment of an existing centre, a new centre may be created with a matching level of services, amenities and public transport servicing (refer to *Growing and Renewing Centres* Actions B3.1 and B3.6 and *Planning for new neighbourhood centres near schools*).

Other focus areas to ensure new housing is located in the most appropriate places is to avoid planning residential development adjacent to busy roads and freight routes (refer to Actions G7.2 and G8.1 in *Tackling Climate Change & Protecting Sydney's Natural Environment* and strategic freight transport Action B2.4 in *Transport for a Connected City* and Action E6.4 in *Growing Sydney's Economy*.

Aim to locate 80% of all new housing within walking distance of centres of all sizes

FIGURE D2
HISTORIC SYDNEY REGION INFILL DWELLING PRODUCTION SHARE: ANNUAL AND LONG-TERM AVERAGE DWELLING PRODUCTION

SOURCE: MDP, 1981–2009 DEPARTMENT OF PLANNING



APPROPRIATE HOUSING TYPES

By 2036, one in six people in Sydney will be aged 65 or more, compared to one in eight now. This is driving a growing trend towards smaller households, in particular single person households which are expected to increase by 69 per cent.

About 60 per cent of homes in Sydney are detached suburban houses. Only about 40 per cent are units, terrace housing, semis and low, medium and high rise apartments more likely to suit the needs of smaller households (ABS, 2006a).

Innovative new housing is needed across the city to provide a well designed mix of types, tenures, prices, sizes, room mix and shapes. Sydney will require significantly more medium density, low–medium rise homes in the right locations.

FIGURE D3
SYDNEY'S CHANGING AGE STRUCTURE

SOURCE: AUSTRALIAN BUREAU OF STATISTICS (1961 AND 2008) AND DEPARTMENT OF PLANNING (2008A)

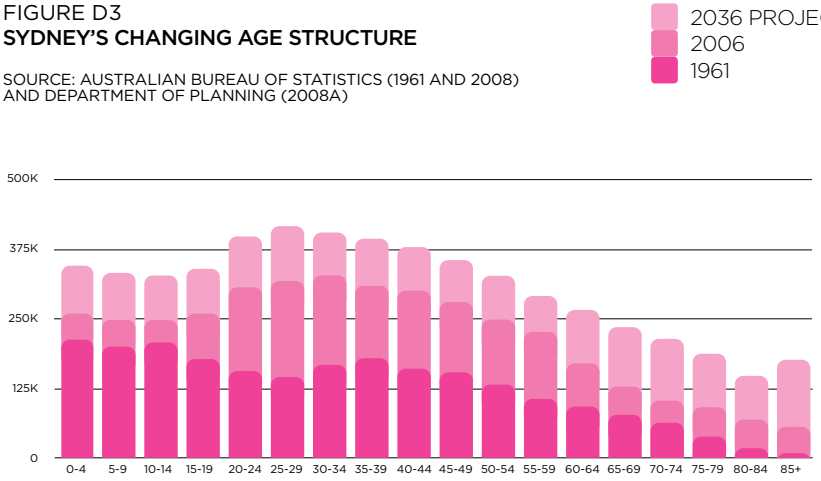
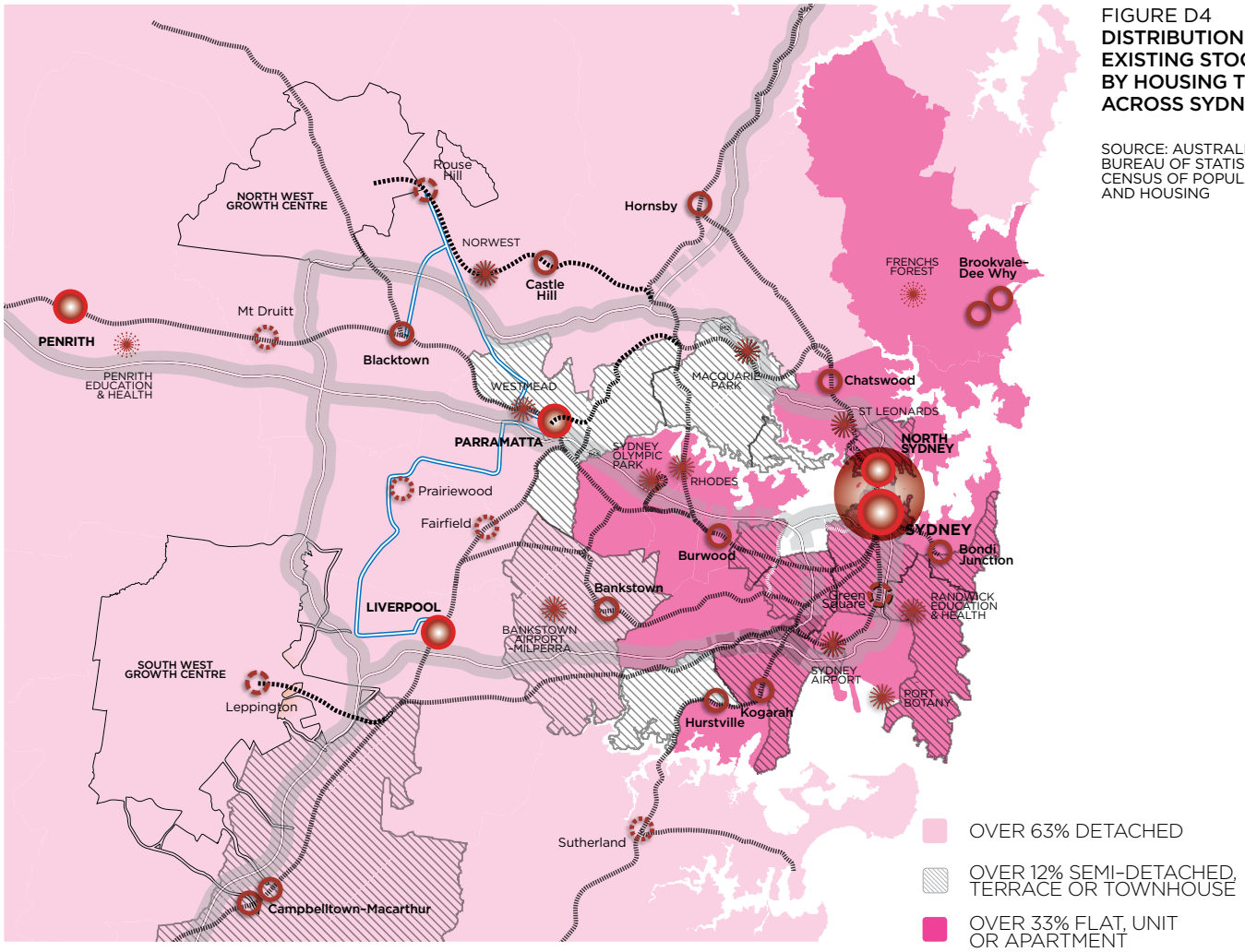


FIGURE D4
DISTRIBUTION OF EXISTING STOCK BY HOUSING TYPES ACROSS SYDNEY

SOURCE: AUSTRALIAN BUREAU OF STATISTICS (2006 CENSUS OF POPULATION AND HOUSING



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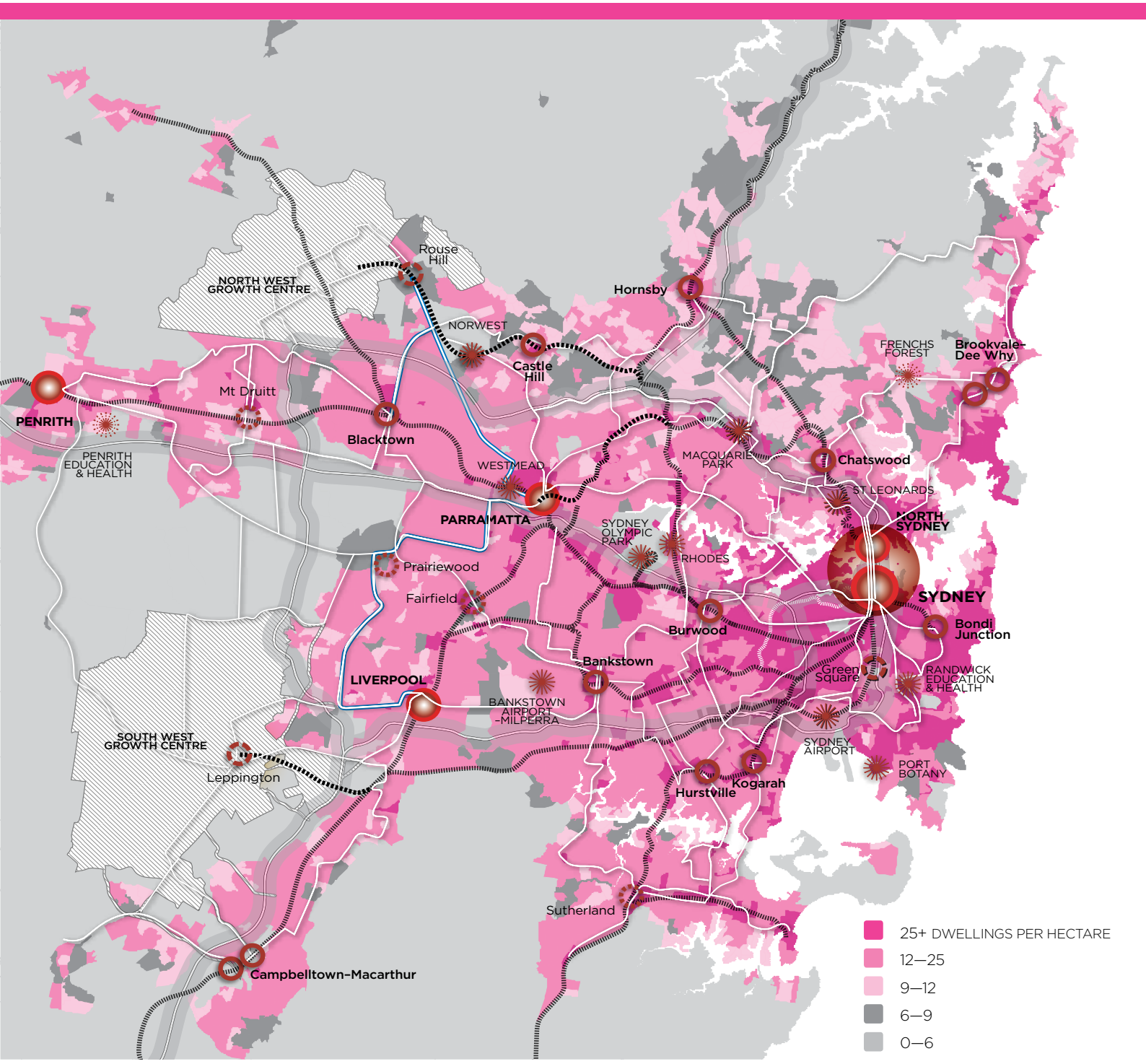


FIGURE D5
EXISTING HOUSING DENSITIES ACROSS SYDNEY

SOURCE: ABS, 2006 CENSUS OF POPULATION AND HOUSING
NOTE: SHADING IS GENERALISED TO CENSUS COLLECTION DISTRICT LEVEL

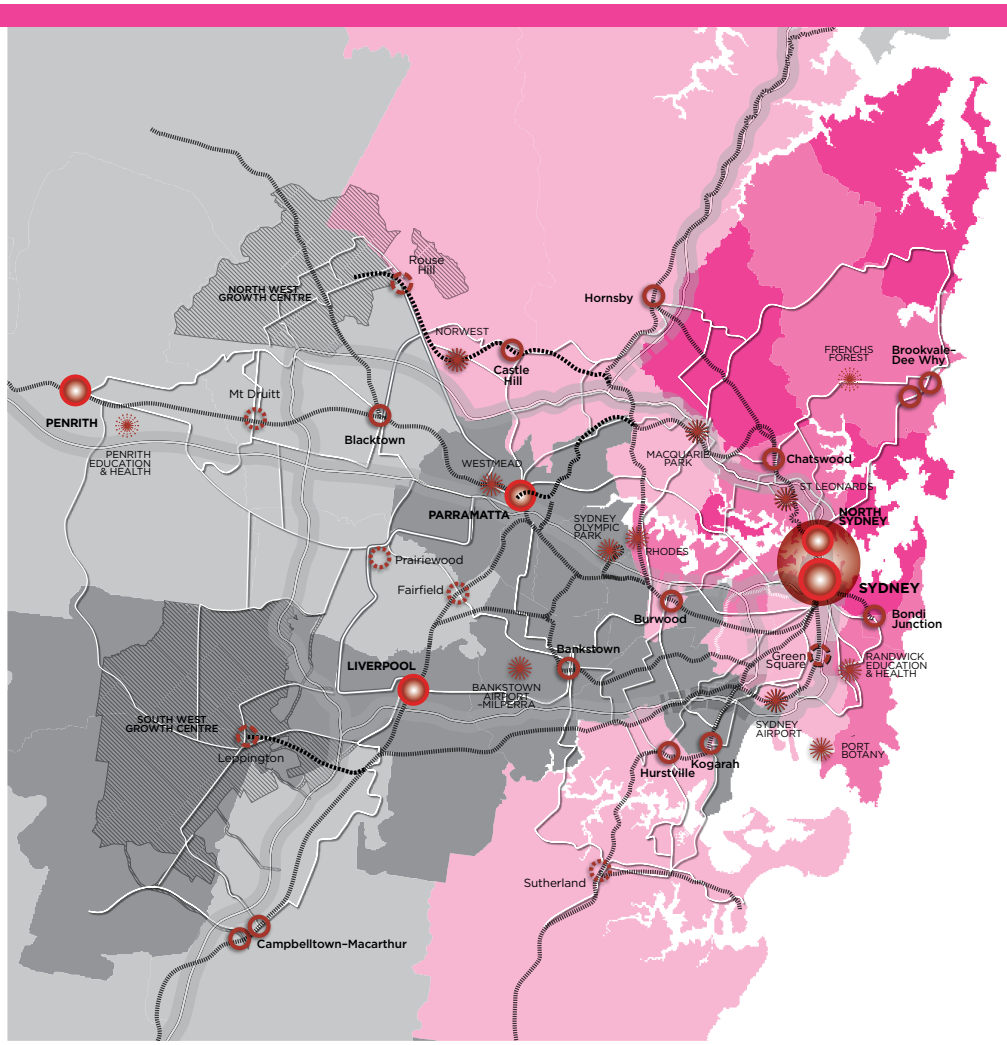


FIGURE D6
HOME SALE PRICES ACROSS SYDNEY 2009

SOURCE: RP DATA (ALL DWELLINGS INCLUDING DETACHED HOUSES, SEMI-DETACHED HOUSES, TOWNHOUSES AND UNITS)

- $235–355K
- $355–445K
- $445–555K
- $555–750K
- $750–985K

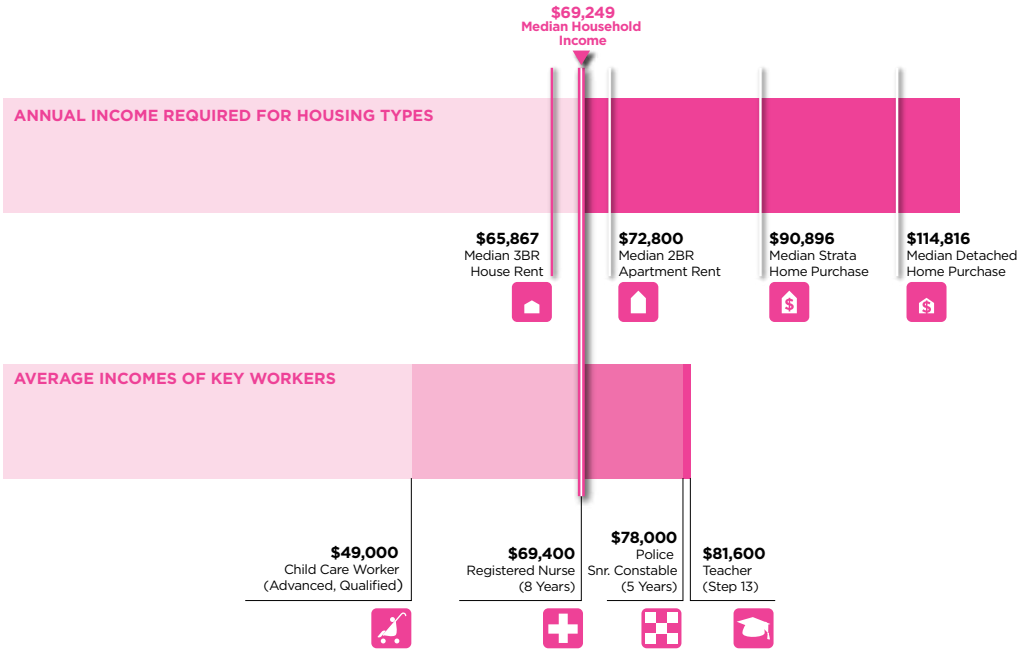


FIGURE D7
ANNUAL INCOME REQUIRED FOR MEDIAN HOME PURCHASE AND RENTAL VERSUS SYDNEY MEDIAN HOUSEHOLD AND KEY WORKER INCOMES 2009–10

SOURCE: MANIDIS ROBERTS 2010

HOUSING AFFORDABILITY

The NSW Government recognises the need to improve the availability of affordable housing for households on low to moderate incomes. In recent years, dwelling costs have risen sharply in every Australian capital and most global cities. A consequence of Sydney's status as a global city is high demand for housing from skilled workers pushing up house prices and rents.

Poor housing affordability impacts hardest on those on low and moderate incomes, who comprise more than half of Sydney's households. Figure D7 highlights the importance of providing housing choices that match median household incomes and key worker incomes in Sydney. Renting is also difficult for local and overseas students. The mix of new housing to 2036 should accommodate students by including lower cost housing and hostels near education institutions and within walking distance of other centres to ensure convenience for those without cars and to capture the vibrancy of student life and enliven centres.

There are several ways to measure housing affordability and stress. One definition of housing stress measures households in the lower 40 per cent of income distribution paying more than 30 per cent of their income on mortgage repayments or rent. Under this definition, 29.6 per cent of households in the Sydney Statistical Division experience housing stress (Tanton et al. 2008).

It is noted that:

- Only 4.8 per cent of Sydney's rental stock was affordable for very low income households and 18.6 per cent was affordable for low income households (Housing NSW 2010)
- Sydney's rental vacancy rate was 1.1 per cent (REINSW 2010)
- The number of households has been rising at a greater rate (46 per cent) than the population (40 per cent)(Housing NSW 2010)
- There has been a steady decline in the growth rate of rental properties (0.6 per cent at the end of the September 2008)
- Lower cost stock is often occupied by moderate and higher income households, who can outbid lower income households, particularly in a tight rental market, and
- Sydney leads Australia's capital cities in stock shortage, with one affordable and available dwelling for every 15 very low income households (Wulff et al. 2009)
- More affordable housing is needed in appropriate locations across Sydney. It is essential that existing numbers of affordable and moderately priced homes are maintained when areas undergo renewal.

Broader housing initiatives in this plan, such as promoting small dwellings in the existing urban area, will contribute to better affordability if there is a plentiful supply of lower cost homes and more housing generally.

STUDENT HOUSING

Increasing densities without compromising the amenity of existing properties and contributing to a high quality urban domain

GOOD DESIGN

Local communities often criticise poor quality housing and a lack of attention to good urban design. Better designed medium and high density development that makes the most of the location with interesting active street frontages is vital to ensure the character and appearance of places is improved and maintained. Measurable benefits will also be delivered to the environment through BASIX compliant construction and to residents through enhanced amenity. Good design for higher density housing should focus on increasing densities without compromising the amenity of existing properties and contributing to a high quality urban domain.

DELIVERY

Local Environmental Plans (*LEP*s) are crucial to delivering the Metropolitan Plan. In particular, *LEP*s allow the achievement of housing targets by providing an adequate supply of serviced land suitable for housing development and, where appropriate, densification.

The role of the NSW Government through the Sydney Metropolitan Development Authority (SMDA) and the application of the *Urban Renewal State Environmental Planning Policy* will also be important in delivering the Metropolitan Plan's housing component (refer to *Delivering the Plan* and *Strengthening and Renewing Centres*).

Major projects with regional or state significance and residential projects over $100 million will continue to be assessed under *Part 3A* of the *Environmental Planning and Assessment Act 1979*. These projects can play an important role in meeting future housing needs.

The *Affordable Rental Housing SEPP* and *Exempt and Complying Development Code*s also assist meeting Sydney's housing needs by expanding opportunities to develop affordable medium density housing in accessible locations and by improving investment certainty and reducing delay in the development of quality low and medium density housing.

LOUISE HAWSON

Low Rise Medium Density

COX RICHARDSON ARCHITECTS/BRETT CORNISH

Medium Rise High Density

Low–Medium Rise High Density

COX RICHARDSON ARCHITECTS/RICHARD GLOVER

Low Rise Low Density

COMMON HOUSING TERMS

BUILDING HEIGHT	RESIDENTIAL DENSITY
Low Rise	**Low Density**
3 storeys or less. Includes terraces, townhouses, shop-top housing, semi-detached housing and small residential flat buildings	Fewer than 25 net dwellings per hectare. This only includes the number of dwellings within land zoned for housing, not land for open spaces, roads etc
Medium Rise	**Medium Density**
4 to 5 storeys. Includes residential flat buildings and shop-top housing	Between 25 to 60 net dwellings per hectare
High Rise	**High Density**
6 storeys or more. Includes residential flat buildings, shop-top housing and large mixed use developments such as offices and shops with housing above	More than 60 net dwellings per hectare. High density living does not necessarily mean 'high rise'. There are many development forms that result in medium and high density which are low or medium rise.

Objectives & Actions

OBJECTIVE D1
TO ENSURE AN ADEQUATE SUPPLY OF LAND AND SITES FOR RESIDENTIAL DEVELOPMENT

ACTION D1.1
Locate at least 70 per cent of new housing within existing urban areas and up to 30 per cent of new housing in new release areas

At least 70 per cent of new dwellings (about 540,000 homes) by 2036 will be within existing urban areas of Sydney and the Central Coast, focused around centres served by public transport. *Comprehensive LEPs* for the 41 metropolitan councils will need to set the land use zoning pattern for Sydney to achieve this outcome.

This approach is confirmed by the Centre for International Economics whose analysis indicated the most beneficial urban form for Sydney would be achieved by locating at least 70 per cent of new housing within the existing urban area. Greenfield development will continue to play a significant role in meeting Sydney's long-term housing needs, providing up to 230,000 homes in well-planned new precincts.

ACTION D1.2
Reflect new subregional housing targets in *Subregional Strategies* and *Local Environmental Plans*, and monitor their achievement

This Metropolitan Plan updates subregional housing targets, moving the timeframe to 2036 (refer Table D1 and Figure D8). Revised subregional strategies will include updated Local Government Area targets. The targets represent a shift towards more homes in established areas compared with the 2005 *Metropolitan Strategy*. This ratio will be re-assessed as part of the Metropolitan Plan's five yearly review in response to new information and analysis (see Actions 17.2 and 17.3 in *Delivering the Plan*). Long-term housing targets will be closely monitored against performance and research will continue on the drivers of housing demand.

All councils will incorporate the Plan's targets and strategic directions into their *LEP*s at the first opportunity. These targets represent a minimum and councils are encouraged to plan for higher capacity where appropriate. Other related actions, such as market testing the feasibility of development controls are found in *Delivering the Plan* Action 14.3.

The Department of Planning will use the METRIX Subregional Planning Tool as part of long-term planning for housing across Sydney. The Department will assist councils to annually upload their long-term housing strategies and estimates into the tool. The METRIX 30 year time horizon for local governments' housing distribution estimates complements the current 10 year *MDP* forecasting. The Department of Planning's M*etropolitan Development Program* will continue to monitor housing production against housing targets and report annually on delivery.

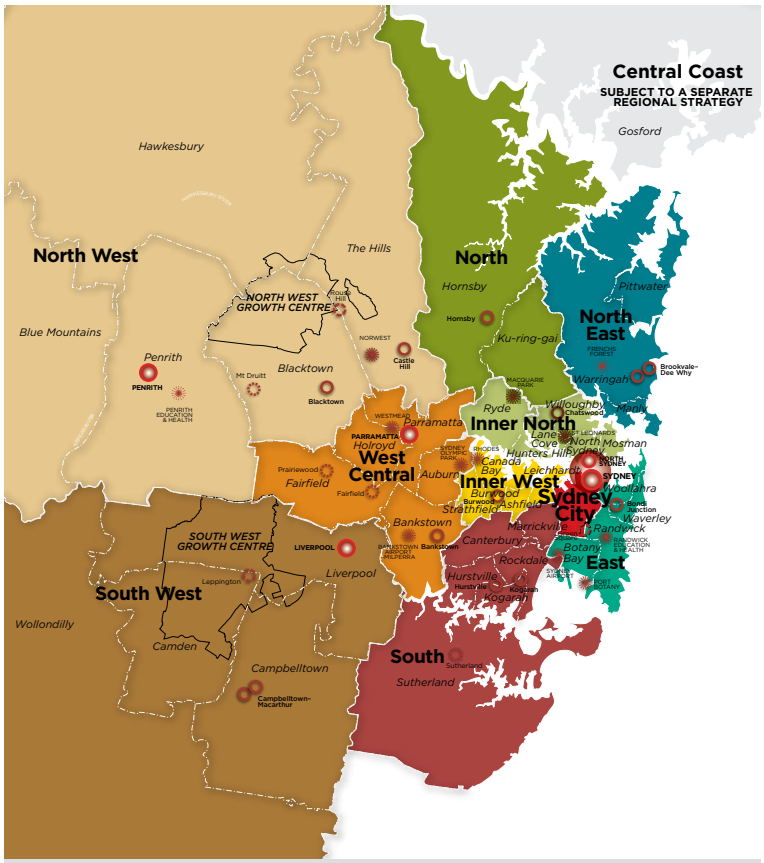
TABLE D1
SUBREGIONAL NET ADDITIONAL DWELLING TARGETS

SUBREGION	NEW 2006—2036 DWELLING TARGET
SYDNEY CITY	61,000
EAST	23,000
SOUTH	58,000
INNER WEST	35,000
INNER NORTH	44,000
NORTH	29,000
NORTH EAST	29,000
WEST CENTRAL	96,000
NORTH WEST	169,000 inc. 87,000 in new release areas
SOUTH WEST	155,000 inc. 83,000 in new release areas
CENTRAL COAST*	70,000 inc. 29,000 in greenfield areas
TOTAL	**769,000**

NOTE NEW RELEASE AREA FIGURES INCLUDE BOTH GROWTH CENTRES AND OTHER GREENFIELD RELEASES IN THE SUBREGION. A SMALL AMOUNT OF GREENFIELD DEVELOPMENT ALSO OCCURS IN THE NORTH EAST SUBREGION (NOT INCLUDED HERE).

*THE CENTRAL COAST IS SUBJECT TO A SEPARATE REGIONAL STRATEGY. DWELLING TARGETS ARE FOR THE COMBINED GREENFIELD AND EXISTING URBAN AREA.

FIGURE D8
SYDNEY'S SUBREGIONS AND LOCAL GOVERNMENT AREAS



Housing targets were calculated after considering household and dwelling projections, demographic and economic trends, land capacity, infrastructure and feasibility. A key guiding factor for distributing new housing targets is the subregional jobs to population ratio. This broadly indicates a city's efficiency in terms of work travel distances and local employment opportunities. Using this ratio to guide land use ensures integration with transport and links decisions about housing to the State Plan's 'more jobs closer to home' aim.

LOUISE HAWSON

OBJECTIVE D2
TO PRODUCE HOUSING THAT SUITS OUR EXPECTED FUTURE NEEDS

At the 2006 Census, most of Sydney's homes were still detached houses (61 per cent), although the share has been declining over the previous 10 years. In the five years to 2008–09, three-quarters of all new dwellings were multi-unit homes (Department of Planning 2010a).

There has also been a shift from separate houses to other dwelling types (flats, semi-detached, terrace and townhouses) by couple families between 1996 and 2006, as well as a small rise in the proportion of detached houses occupied by people living alone, with half aged 60 or older. This suggests many older people prefer to stay in the family home near their existing family and social networks, rather than downsize elsewhere.

One and two person households will be the most common by 2036. Therefore, more medium density development and smaller, affordable dwellings should be allowed to assist young families and older residents stay in their communities.

FIGURE D9
BREAKDOWN OF DWELLING TYPES
SOURCE: ABS, 2006 CENSUS OF POPULATION AND HOUSING

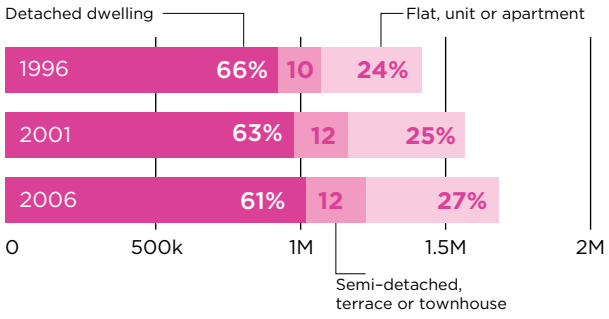
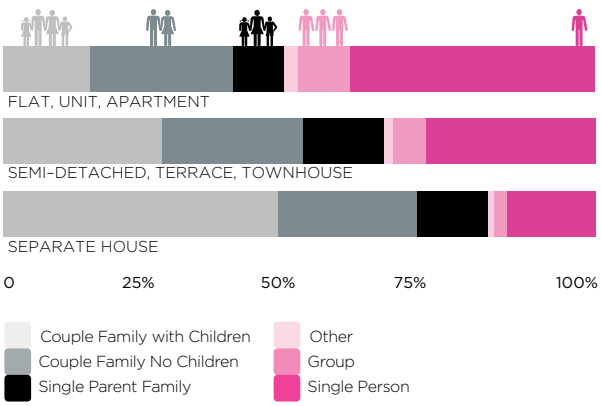


FIGURE D10
STRUCTURAL DWELLINGS BY TYPE
SOURCE: ABS, 2006 CENSUS OF POPULATION AND HOUSING

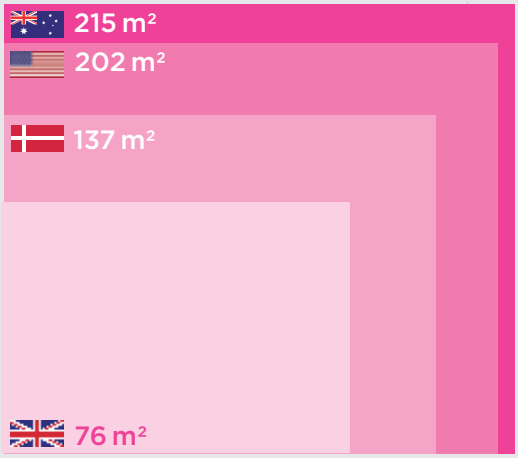


HOUSE SIZE

Houses Are Growing
New homes in Sydney are getting bigger overall. Between 2001 and 2006, the number of homes with four or more bedrooms grew by 14 per cent while the number with less than four bedrooms remained about the same (as smaller detached homes often make way for new development).

Smaller dwellings are more affordable, sustainable and best suit expected future demographics. It is important for the industry to deliver attractive smaller homes and for the community to want them. The Government encourages design innovation to produce more sustainable housing types for the public to see and experience such as row houses, duplexes, townhouses, courtyard homes and a range of apartments.

International Comparison
In 2008–09, the typical new Australian home was 215 m², a 10 per cent increase in a decade. The average home size in the USA is 202m² whilst Denmark has the biggest average homes in Europe at 137 m² and Britain the smallest at 76 m² (ABS 2009).



ACTION D2.1
Ensure local planning controls include more low rise medium density housing in and around smaller local centres

Detached homes in areas outside the walking catchment of any centre will continue to be an important part of Sydney's housing stock. New apartment blocks in larger centres (usually towns or Strategic Centres) will also be a significant component of future housing.

However, low rise medium density development is particularly encouraged around Sydney's many smaller local centres because it:

- is less expensive to build
- does not need major site by site amalgamation of land
- performs better environmentally than most high rise housing (Holloway and Bunker 2006; Pullen 2007)
- can deliver more affordable homes
- fits into existing streets, and
- suits a wide range of demographic groups

A suite of measures is needed to ensure planning controls allow more housing of this type. Specific measures to streamline the planning and approval process for suitable low rise medium density housing include:

- Extending *SEPP 65 Design Quality of Residential Flat Development* to include quality criteria and advice for low rise medium density housing types such as townhouses and villas. This may include codes for precincts established by the Sydney Metropolitan Development Authority
- Faster assessment of:
  - well-located new medium density housing development. Attached dwelling types such as terraces, semi-detached, townhouses and innovative housing types for different contexts up to three storeys will be considered for complying development status in expanded Housing Codes where development meets preconditions including consistency with approved structure plans/master plans
  - low rise housing on small lots in accessible areas where a higher form of density is unlikely to be desired in the foreseeable future. Housing on smaller lots can be integrated in low density areas and, if well designed, can achieve good amenity and liveability for both the occupants of the new housing and their neighbours
- Facilitating:
  - higher occupation of existing dwellings by allowing alterations to increase occupancy rates in an economically feasible way; and
  - well-located secondary dwellings (also known as granny flats) which have an important role providing low-cost accommodation. Used to house a family member or rented out for extra income, secondary dwellings can use spare backyard space and lofts over garages without requirements to provide any additional parking.

LOUISE HAWSON

ACTION D2.2
Adopt a program examining how to achieve the Federal Government's targets for disability-friendly housing

Housing designed to be accessible or easily modified to suit the needs of people with a disability and older people provides greater choice about where they may live, and more opportunity for visiting friends and family. Like others in the community, they value security of tenure, affordability (including maintenance) and dwelling suitability.

In 2003, there were 1.2 million people with a disability in NSW with 38 per cent were 65 or older (ABS 2004), The proportion of people in Sydney aged 65 or more is expected to grow from 12 per cent to 18 per cent by 2036 (Department of Planning, 2008a).

Universally designed homes—those that meet the changing needs of occupants across their lifetimes, as they age or acquire a disability—give people greater independence and choice about where they live. Housing NSW has adopted these standards for all new housing constructed or modified since 2009 (Towards 2030). Some Sydney councils also have provisions for universal design requirements in their *DCP*s.

The *State Environmental Planning Policy (Housing for Seniors or People with a Disability)* aims to increase the supply of homes tailored to the needs of older people and people with a disability and establishes an assessment framework which replaces local planning controls that may not allow such development. The *SEPP* also ensures housing for seniors is located near shops, banks and other retail, community services and recreation facilities, a medical practitioner and a reasonable public transport service.

Individual developments should recognise and accommodate an ageing population. The surrounding environment should also enable people to easily access services and allow them to visit friends and family, shopping centres, places of worship, medical centres, libraries and so on.

*LEP*s must allow appropriately located and sufficient housing for seniors and people with a disability. New housing and public facilities should be more accessible, aiming for:

- at least 10 per cent of all new multi-unit residential development to be adaptable for use by people with a disability
- all new multi-unit housing to have wheelchair accessible entry with accessible paths of travel to the living area and suitable bathroom fittings, and
- an aspirational target that all new homes should be built to disability-friendly *Liveable Housing Design* standards by 2020 (Shorten 2010).

HOUSING TO SUIT FUTURE NEEDS

ENSURE CONSISTENT PLANNING CONTROLS IN *LEPS* AND *DCPS*

*LEP*s should be complemented by *DCP*s; both need to allow for more development potential than demanded at any one time. Although the current zoned land in existing areas across Sydney has theoretical potential to deliver much of the housing needed, the greater challenge is to ensure enough housing is actually built and more new development takes place in centres, well designed and matched with appropriate infrastructure and services.

Urban design quality is most commonly addressed through the *DCP*s prepared by local councils. *DCP*s should reflect the Metropolitan Plan objectives. They will not conflict with *LEP*s or have requirements that render the controls set out in *LEP*s unachievable.

Planning Reform Fund grants can be utilised by councils to support work in their centres matching this. The fund aims to support the development and implementation of reforms to the planning system. The criteria for the latest funding round has broadened to include the strategic directions of the Metropolitan Plan, favouring projects that plan for more residential sites within centres, include a diverse mix of housing, address housing affordability and improve the quality of urban renewal.

OBJECTIVE D3
TO IMPROVE HOUSING AFFORDABILITY

Many actions in this chapter will collectively improve housing affordability by increasing the number of smaller homes, streamlining the planning and approval process for suitable housing and other measures that help reduce development costs. The main ways to encourage an adequate supply of additional housing to meet demand—estimated to be between 24,400 and 26,600 new dwellings a year (Department of Planning 2008a)—are to make it easier to develop additional housing in existing urban areas and to release more greenfield land.

There is generally thought to be a positive flow-on effect on the cost of housing from meeting housing targets, particularly if much of the new housing provided is modestly sized and priced. However releasing more land on the fringe does not automatically make housing more affordable in local areas across Sydney.

Many factors influence a purchaser's decision to buy a home in a new release area on the outskirts of Sydney. For example:

- most people moving to these areas already live nearby
- each area has different socio-economic and demographic characteristics
- land on Sydney's outskirts costs more than greenfield land elsewhere (currently around three times higher than in Brisbane and Melbourne), and
- it is often more cost effective overall to live and travel in established areas closer to more job opportunities, services, schools and shops

The positive impact of increasing greenfield land supply is that it frees up housing and sites in existing urban areas. However, the 'churn' created by people vacating one home to occupy a different home does not necessarily reduce overall housing affordability generally or at a local scale. Home owners generally sell their homes for more than the original purchase price, while landlords often use the opportunity provided by tenant turnover to raise rents. *'Even if only a small proportion of households attempt to buy a higher quality or better located home, the price of all housing is soon bid up'* (Productivity Commission 2004).

However, even if housing supply can increase and place downward pressure on general house prices, affording a home will remain a challenge for those on low incomes. Therefore, policy responses and practical initiatives from all tiers of Government are required to improved housing affordability.

To ensure sufficient affordable and moderately priced housing, active measures are needed to stem the loss of affordable stock and encourage more affordable housing. It is crucial for Sydney's ongoing economic strength and international competitiveness that housing remains affordable across the social spectrum. Housing is strongly linked to economic performance and the ability to provide employers with a strong labour force. Housing stress leaves less money for other essential spending such as food, education, clothes and transport and it can increase homelessness.

There is potential to lower housing costs by rationalising car parking spaces according to location and public transport access

The Land and Housing Supply Taskforce will have a role in addressing factors affecting housing costs, including development controls concerning car parking. Around 30 per cent of apartment construction costs can be attributed to below ground car parking. There is potential to lower housing costs by rationalising car parking spaces according to location and public transport access.

The RTA will revise car parking guidelines in its *Guide to Traffic Generating Developments* to explore reduced parking rates for accessible development.

Other ways of improving housing affordability are facilitated by the Centre for Affordable Housing, a division of Housing NSW dedicated to supporting affordable housing in NSW (see Glossary).

AFFORDABLE HOUSING & HOUSING AFFORDABILITY

The concepts of 'affordable housing' and 'housing affordability' are different.

Affordable Housing refers to housing for very low income households, low income households or moderate income households (*Environmental Planning and Assessment Act 1979 [NSW]*). This covers households earning up to 120 per cent of the median income for the area where they live and paying more than 30 per cent of that gross income in rent.

Housing Affordability refers to a household's capacity to pay for renting or purchasing a home, usually expressed in relation to their income. This includes the cost of construction and the supply of serviced new release land as well as escalating land and house values. It is affected by a range of policy and financial settings including taxation and fiscal policy, migration and demographic change. This affects a broader cross–section of society.

MONITORING AFFORDABILITY

The *MDP* will draw upon *Housing NSW Rent and Sales Report* data using Valuer General's data and will investigate ways to improve data collection, tracking and reporting on housing affordability with particular focus on enhancing and building databases to monitor housing prices, tenure mix and housing configuration (number of bedrooms) and the implementation of affordable housing policies.

AFFORDABLE RENTAL HOUSING SEPP

The *State Environmental Planning Policy (Affordable Rental Housing) 2009* (*AHSEPP*) commenced in July 2009. It encourages home owners, social housing providers and developers to increase the amount and diversity of new affordable rental housing throughout NSW

The *AHSEPP* aims to stimulate private sector involvement in the provision of affordable housing through floor space and land permissibility incentives. These incentives are bolstered by the application of key minimum development standards backed up by the application of good design guidelines. The *AHSEPP* is being reviewed. Discussions with various stakeholders have already highlighted potential issues for consideration including:

- the possibility of local development provisions tailored to local markets
- opportunities for further streamlined development approvals utilising complying development
- the production of more specific design guidance
- the potential effectiveness of inclusionary zoning, and
- the need to further explore means of engaging with the expanding Community Housing Provider sector

The key objective of the review is to ensure innovative solutions for the effective ongoing delivery of affordable rental and social housing throughout NSW.

ACTION D3.1
Explore incentives to deliver moderately priced rental and purchase housing across all subregions

Opportunities for density bonus incentive schemes using *LEP*s will be explored to encourage more affordable housing beyond those currently in the *Affordable Rental Housing SEPP*.

These provisions could apply where an increase in development density is offered in exchange for the provision of affordable housing for low to moderate income groups and extend to the mechanisms available to ensure any affordable housing is maintained and not lost when first sold.

ACTION D3.2
Set affordable housing targets for State urban renewal projects on a case by case basis

Urban renewal has the potential to displace existing affordable housing, as newly developed homes can be more expensive than existing homes, even when providing a new mix of housing products and sizes. Each Sydney Metropolitan Development Authority renewal project will include research on its impact on affordable housing to ensure no net loss of affordable housing.

The Government has been proactive in delivering affordable housing in renewal areas through several approaches. The St Marys and Rouse Hill Affordable Housing programs demonstrate how planning agreements and mechanisms can secure affordable housing supply. The *Green Square Affordable Housing Program* uses inclusionary zoning supported by an increase in density, while developer contributions are invested in affordable housing supply. Landcom has a voluntary policy of aiming to have at least 7.5 per cent of its projects affordable for moderate income households. Housing NSW is expanding its approach to revitalise areas and renew communities, most recently through opportunities under the *Housing Affordability Fund*.

State urban renewal projects will take the lead to minimise the impact on the availability of affordable and moderately priced housing in areas that are the focus of redevelopment. Each precinct and centre is unique, and a target will be set that responds to local circumstances. The approach to determine and implement targets will be developed in collaboration with Housing NSW.

As with subregional targets, the State Government will monitor these renewal area targets closely and continue to undertake research to inform future targets on subsequent reviews of the plan.

LOUISE HAWSON

GOVERNMENT HOUSING INITIATIVES

Comprehensive Housing Supply Strategy
NSW Government 2010 Budget Statement 2010–11, Budget Paper 2
This strategy includes: stamp duty cuts and exemptions for off–the–plan dwellings, and for changeover homebuyers over 65; working with local government on development contributions, fast–tracking *LEP*s and facilitating development; implementing NRAS (see below); and accelerating reforms such as the *Urban Renewal SEPP*.

Urban Renewal SEPP
This will allow the NSW Government, working closely with local councils, to investigate the rezoning of land in areas where there is adequate and effective transport infrastructure, streamlining the planning process by specifically tailoring it for urban renewal areas. Implementation of the *SEPP* will involve a planning study for each precinct being publicly exhibited for a minimum of 30 days. Each study is likely to look at a wide range of issues including infrastructure capacity, traffic and flood modeling, urban design, landscaping, environmental issues and economic and social factors. Once each study is completed, a new precinct planning blueprint will be established which will allow the lodgement of specific development proposals.

Nation Building Economic Stimulus Plan
This $42 billion Federal Government package was introduced in February 2009 to fund the delivery of infrastructure projects including social housing. It provided $1.7 billion to deliver 6,300 social housing homes in NSW by June 2012.

Housing Affordability Fund
This fund focuses on proposals that improve the supply of new housing and make housing more affordable for home buyers entering the market. Under round two of the fund, the Federal Government targeted projects that were transit oriented or reduced the concentrations of disadvantage on public housing estates through infrastructure and other reform initiatives. Housing NSW is developing guidelines to engage affected communities on these projects.

National Rental Affordability Scheme (NRAS)
This scheme provides incentives to encourage investment in affordable housing for renting to eligible tenants. In NSW, offers of funding have been made for more than 2,500 dwellings rented out to low and moderate income households for at least 20 per cent below market rate. Further take–up is expected under the fourth round of funding.

Council of Australian Governments (COAG)
This Metropolitan Plan is being prepared in the context of a national housing and affordability agenda with NSW participation occurring through the Ministerial Council on Federal Financial Relations. This reform agenda will build on the work currently underway by Housing Ministers, including improvements to capital city strategic planning and development approvals. National criteria for capital city strategic planning systems will ensure Australia's cities have long–term plans in place to manage population growth and improve housing affordability among others.

JIM HANNA

HELEN BARRIE

IMPROVING AFFORDABILITY

Renewing social housing stock
Housing NSW has significant land holdings in the metropolitan area. Many older dwellings are no longer appropriate for current tenants. Redevelopment of estates presents an opportunity to renew housing stock, build more homes and help achieve Metropolitan Plan objectives and housing targets. This approach has evolved from a primary focus on asset renewal to improve the physical environment, build community capacity and develop partnerships with local organisations to improve access to services for public housing areas. This approach is showing significant promise in places like Minto and Bonnyrigg.

Increase affordable housing supply by encouraging growth of Community Housing Providers
Community Housing Providers are not–for–profit organisations with a charter to manage housing for low–to–moderate income and special needs households. In NSW, 300 bodies manage around 18,000 dwellings. It is projected this will increase to 30,000 by 2013 and continue expanding.

The Department of Planning is working with other agencies and stakeholders to help implement the *Build and Grow Aboriginal Community Housing Strategy* to ensure the best outcomes for Aboriginal housing providers and Aboriginal communities, families and individuals.

Community Housing Providers are strategically placed to deliver affordable housing cost–effectively as they can borrow funds to invest in new community housing supply and deliver more housing than Government through its own investment.


HOUSING NSW


HOUSING NSW

OBJECTIVE D4
TO IMPROVE THE QUALITY OF NEW HOUSING DEVELOPMENT AND URBAN RENEWAL

In the past, suburban development in Australia relied to some extent on wide spaces to achieve good amenity. Design creativity is required to achieve similar good amenity at medium and high densities. More detailed thought is needed about how buildings relate to neighbours and streetscapes, and to maximise landscaping and vegetation benefits at each location. Bearing in mind the need to encourage affordable housing provision, good building design need not require expensive construction and finishes. Sustainable designs should have lower running costs.

Medium and high density development around centres must be linked to improved public areas including pedestrian friendly streets connecting to local parks, schools, community facilities and the centre walking catchment. Good design is imperative to promote community acceptance of higher densities.

ACTION D4.1
Strengthen the Government's role in ensuring good design outcomes

The Department of Planning will provide urban design and planning advice to councils. The initiative will ensure developers, the public, planners and decision-makers are familiar with examples of good urban design, its underlying principles and the different elements that contribute to good design.

The following guidelines are anticipated:

- Residential guidelines will identify and present a variety of best practice medium density development options for urban and suburban contexts.
- *Centres Design Guidelines* will include design principles and examples of how to accommodate additional growth while respecting local character and essential elements to achieve successful centres.

These guidelines will be used as a basis for relevant *Development Control Plans* and assessment of development proposals.

PENNY BOWEN

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To help improve the design quality of new developments, a partnership between the Department of Planning and the Government Architect's Office will create an online resource of good urban design and renewal examples. It will showcase best design examples of public domain, community facilities, a range of flexible housing types such as apartments to suit families, water sensitive urban design and other environmental initiatives and adaptive re-use of heritage buildings. It will also provide easy access guidance to developers and councils.

ACTION D4.2
Appoint *SEPP 65 Design Review Panels* for areas of high growth, including the Strategic Centres

High quality design is essential to improving the image, and market attractiveness of centres and other strategic locations. *SEPP 65 Design Review Panels* can play an important role in ensuring the design of new residential development in landmark sites and the urban renewal of centres is of a high quality.

IMPROVING HOUSING QUALITY & RENEWAL

Identifying landmark sites and instigating design competitions to promote excellence, world-class design and sustainability
High quality design is essential to improving the image and market attractiveness of centres and other strategic locations. Promotion of design excellence, including through design competitions can act as a catalyst for investment and demonstrate a commitment by the private sector and Government to high quality urban renewal. Design Excellence clauses are available for inclusion in principal *LEPs* along with supporting requirements in the *DCP*. The Department will continue to assist Councils and agencies to embrace this process for landmark sites and major pieces of infrastructure.

Heritage
Heritage can also contribute to quality design outcomes. From individual sites to conservation areas and cultural landscapes (in land release areas), early identification of heritage assets can aid best practice planning through appropriate zonings, land uses, road and subdivision layout. Good urban and architectural design can develop and revitalise sites and/or areas while maintaining and conserving their significance and character.

LOUISE HAWSON

6 MISCELLANEOUS ITEMS

6.2 Strategic Town Planning Policy Priorities

Report No. 11TS0040CR:kb (02/12/10) Common No. 1267297

Report Number 11TS0040 CR:kb attached

ENCL: NO

DARWIN CITY COUNCIL

DATE: 02/12/2010

REPORT

TO:	SPECIAL COUNCIL MEETING/OPEN	**APPROVED:**	CR
FROM:	GENERAL MANAGER INFRASTRUCTURE	**APPROVED:**	DC
REPORT NO:	11TS0040CR:KB	**APPROVED:**	LC
COMMON NO:	1267297		

SUBJECT: STRATEGIC TOWN PLANNING POLICY PRIORITIES

ITEM NO: 6.2

SYNOPSIS:

This report provides Council with an overview of strategic town planning issues previously considered as priorities by Council for review and discussion so as to provide direction for the next 12 months.

GENERAL:

A report to Council in November 2008, identified that a more strategic approach to the development of Darwin and the assessment of Development Applications would require further policy development.

Further to this, Council resolved at the February 2009 Town Planning Committee:

Strategic Town Planning Policy Priorities
Report No. 09TS0007 Common No.1267297

A. THAT Report Number 09TS0007 entitled Strategic Town Planning Policy Priorities be received and noted;

B. THAT a priority list for the development of policies regarding town planning matters be established as follows:

I. Setbacks of development in residential areas;
II. Setbacks of development in the Darwin Central Business (CB) zone;
III. Small lot subdivisions in new neighbourhoods;
IV. Car parking, Public Transport and alternative transport requirements;
V. The height, bulk and over development of land in the Darwin CB zone;
VI. Public and private vehicular and pedestrian access into new City developments;
VII. Service and waste vehicular access into new developments
VIII. Environment and Climate Change issues - water conservation and
IX. Alternative energy uses

X. Preservation of public open space.

DECISION NO.20\1246 (24/02/09) Carried

Discussion:

Council staff have been working with Council on progressing a number of these issues within the constraints of resourcing and other ongoing and emerging priorities.

Setbacks in residential areas;

Concern has previously been raised over the wavering of setback requirements in residential areas, particularly in the Lyons and Muirhead subdivisions, where lots are generally smaller than established areas.

Council has been providing strong feedback to the Development Consent Authority in relation to proposed reduced setbacks.

Despite Council's ongoing objections and concerns the Development Consent Authority has approved blanket building envelopes which include reduced setbacks in subdivisions such as Muirhead.

Given the number of variations granted by the Development Consent Authority the question arises as to whether the NT Planning Scheme should be amended to either tighten up conditions were waivers will be grant or alternatively amend the Scheme to reflect current practice.

This needs careful consideration against the growing trend of the provision of smaller size allotments and possible Urban intensification.

Setbacks of development in the Darwin Central Business (CB) zone;

Setback variations have been looked at on a case by case approach through the development application process for all Development Applications in the CB zone.

Small lot subdivisions in new neighbourhoods;

The trend for the provision of smaller allotments is reflected within the NT Planning Scheme and by recent subdivisions. This matter will be further explored as part of the Weddell development, Greater Darwin Land Use Plan and the Urban infill debate.

Car parking, Public Transport and alternative transport requirements;

A range of work has been undertaken on parking and transport over the past 12 months.

A study on parking generation in the CBD was jointly undertaken by the Northern Territory Government and Darwin City Council. The report made a range of

recommendations in relation to parking generation and associated controls in the Planning Scheme. A limited number of recommendations from the study relating to parking generation for Multiple Dwelling in the CBD were incorporated in a proposed Planning Scheme Amendment and advertised for public comment late last year. Council has made submissions on this matter. Further work is being done to develop other recommendations from the study into possible planning scheme amendments.

Council currently has an Expression of Interest out for an external consultant to undertake a detailed study on parking issues within the CBD and to review Council's strategies and policies.

The height, bulk and over development of land in the Darwin CB zone;

The introduction of volumetric controls in the NT Planning Scheme has added criteria to assess height and building setbacks in the CBD.

There is however, further work that can be done to improve the criteria in the Scheme. Recent applications have highlighted some shortfalls in the provisions. In particular, clause 6.3.3 of the Scheme allows a height bonus for buildings in the Perimeter Area of the CBD, increasing the allowable height from 36m to 55m subject to meeting the set criteria.

Bonuses in themselves are not a problem if they result in a better design outcomes. Unfortunately, the current bonus criteria have proven to be achievable with very little added benefit to the community or the future occupiers of the buildings. Further criteria could be developed under the existing framework.

Public and private vehicular and pedestrian access into new City developments;

Access has been a major consideration on all CBD applications over the past 12months, with many applications requiring detailed traffic and pedestrian movement reports at the development assessment stage. By requesting traffic reports at this early stage Council staff have been able to work with applicants to achieve better outcomes.

Further strategic work could be undertaken to identify likely areas of future intensification and the need for road upgrade works. Council staff are currently developing a brief for this work for Council's consideration. Discussions are also occurring with the Northern Territory Government. It is likely that a brief will be presented to Council in the second half of 2011.

Service and waste vehicular access into new developments;

A number of recent development applications in the CBD have raised questions in relation to the suitability of narrow lot development and current waste pick up arrangements. Council staff are currently investigating this issue through a review of Council's Waste Management Policy, which will include recycling for developments within the CBD. A report to Council is anticipated by August 2011.

Environment and Climate Change issues - water conservation and alternative energy uses;

Council staff are progressing the development of a Climate Change Action Plan for consideration and adoption by Council. In addition, Council are including climate change and environment comments were appropriate within development application responses.

Preservation of public open space;

Work is progressing on this matter in particular to the issue of high rise developments. A future report will be presented to Council.

Further to the previously identified priorities as part of this workshop, Elected Members have raised the following planning matters for investigation or discussion:

- Capture of planning issues that are currently not working or need a policy review (there have been a number of things, including disability access to high rises which are clearly falling through the gaps, issues of parking outside of CBD, problems where application has identified certain end users and once it gets through the purpose (within the zone) changes.
- Future directions in working in partnership with the Northern Territory Government to achieve better outcomes – suggestions that certain things like residential set backs, carports, etc. could be delegated to LG, etc.
- Status report on policy development identified in last years workshop/briefing by Council officers.
- The need to have some considerations for a TOPROC perspective to major infrastructure planning and development so that we get a cohesive region rather than a competitive approach to funds, eg talk about a entertainment centre at Palmerston and how this might have implications for transport services etc.
- How the Commonwealth Government's interest in developing a National Urban Policy and how this will impact on Darwin as a capital city given that the "our cities document" appears to be countenancing a replacement of the Capital Cities forum with a Major cities approach for which the definition is cities over 100,000.
- If Council is considering urban infill, I would like to hear examples of how other places define open space and % area of land allocated for it within each block. I'm concerned about permeable areas and environmental (clean air) and aesthetic considerations, particularly if we are considering intensification in suburban areas, such as suburban blocks being developed with townhouses.
- Clarification of NT law that allows granny flats on a single dwelling blocks if they are used as part of the house. Is Northern Territory Government planning on amending this rule? Will separate dwellings be allowed on single dwelling blocks?
- Information on population density figures that are needed to support frequent public transport services?

A number of issues are either currently in progress of investigations with reports for Council in due course or have already been subject of actions and reports to Council.

FINANCIAL IMPLICATIONS:

Various costs relating to resources required to undertake work in relation to the identified issues.

STRATEGIC PLAN IMPLICATIONS:

The issues addressed in this Report are in accordance with the following Goals/Strategies of the Darwin City Council 2008 – 2012 as outlined in the 'Evolving Darwin Strategic Directions: Towards 2020 and Beyond':-

Goal
1 Achieve Effective Partnerships and Engage in Collaborative Relationships
Outcome
1.1 Improve relations with all levels of Government
Key Strategies
1.1.4 Play a strategic role in the planning and developmental processes that impact Darwin
1.1.5 Influence Government and developers to develop sustainable projects which reflect Darwin's lifestyle
1.2 Effectively engage with Community
1.2.1 Increase involvement of the Business Community for developing solutions to local issues

Goal
2 Enhance Darwin's Active, Positive and Flexible Lifestyle
Outcome
2.1 Improve urban enhancement around Darwin
Key Strategies
2.1.1 Manage and maintain the municipal landscaping and infrastructure to a standard that meets community needs
2.1.4 Provide a clean and liveable municipality

Goal
3 Assist Individuals and the Community Stay Connected with the Darwin Region
Outcome
3.1 Promote the use of public spaces
Key Strategies
3.1.1 Enhance public spaces and encourage greater use by the community
3.2 Enhance transport
3.2.1 Review transport and parking needs systems
3.2.4 Provide parking facilities and management systems which meet the needs of the community.

Goal

4 Create and Maintain an Environmentally Sustainable City

Outcome

4.2 Improve water conservation

Key Strategies

4.2.2 Manage and maintain Council's storm water management system.

LEGAL IMPLICATIONS:

Various depending on the issue.

PUBLIC RELATIONS IMPLICATIONS:

Not Assessed.

COMMUNITY SAFETY IMPLICATIONS:

Not Assessed.

DELEGATION:

Nil.

CONSULTATION:

Not Assessed.

PROPOSED PUBLIC CONSULTATION PROCESS:

Nil.

APPROPRIATE SIGNAGE:

Not Applicable.

RECOMMENDATIONS:

THAT it be a recommendation to Council:-

THAT Report Number 11TS0040CR:KB entitled, Strategic Town Planning Policy Priorities, be received and noted.

DAVID CASH
ACTING MANAGER DESIGN, PLANNING & PROJECTS

LUCCIO CERCARELLI
GENERAL MANAGER INFRASTRUCTURE

Any queries on this report can be directed to Cindy Robson on 8930 0528 or email c.robson@darwin.nt.gov.au

7 CLOSURE OF MEETING