Life's Essentials

Water and New Homes for the Hunter

BIS Shrapnel
BUSINESS RESEARCH AND FORECASTING

Urban Taskforce
AUSTRALIA

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FOREWORD

The Urban Taskforce is an industry organisation representing Australia's most prominent property developers and equity financiers. Our membership also includes key infrastructure providers, economists, planners, architects and lawyers involved in property development. We provide a forum for people involved in the development and planning of the urban environment to engage in constructive dialogue with both government and the community.

The Taskforce has been alarmed at Hunter Water's proposal to fund 60 per cent of the costs of the $406 million Tillegra Dam by levying local development. That's why we commissioned BIS Shrapnel to prepare this report and sought additional advice from Monteath and Powys, which is included in this document.

The burden of development levies is ultimately borne by home buyers. They should not be singled out to subsidise major infrastructure investments, particularly headworks like the Tillegra Dam.

We find it odd that this proposal should even be raised. In relation to Sydney's new headworks – the desalination plant - the NSW Government directed that the costs would be recovered through Sydney Water's prices. Sydney Water enthusiastically agreed. They said that it's not appropriate to recover the cost of their desalination project from development charges - because the plant is to secure the water supply for all customers.

As this report shows, Tillegra Dam is *also* about securing the water supply for all customers – not just new customers. The dam is needed to protect the Hunter and Central Coast's water supply during low and variable rainfall ... and severe and sustained droughts.

The main losers from any development charge will be home buyers and renters.

This report makes some key points:

- Hunter Water projects an increase in demand of 20,000 mega litres by 2031. This amount represents just 17 per cent of the expected annual yield of 120,000 mega litres from existing storages and the new dam. **Hunter Water's assertion that 60 per cent of the dam is attributable to 'growth' is inexplicable.**

- Hunter Water's own modelling shows that **the marginal cost of supplying water for the planned population increase of 160,000 by 2031 is close to zero.** This means the entire cost of Tillegra Dam should be attributed to drought security. There is no case for development charges.

- A new dam will generate water that can be accessed by anyone in the customer base, irrespective of where they live. **New home construction will not directly relate to population growth.** The ageing population will be the dominant force for population growth and housing demand over the next twenty years.

More than 100,000 established houses in the Hunter are currently occupied by just one or two people. These households are under-utilising the housing stock. The ownership of these established homes will be gradually transferred to younger people - which will facilitate some of the region's population growth. Retirees will move into newly built medium and high density homes. **If a development levy is used to fund the dam, these retirees would be forced to pay for additional water infrastructure they do not use.** Younger families moving into a retiree's existing house would account for the 'new' population, but would not pay any development levies. This is clearly inequitable.

- There are already insufficient homes in the Hunter; with **a deficiency of 2,800 dwellings at June 2008.** Consequently, rental vacancy rates have tightened with substantial rises in rents.

- Hunter Water has proposed a developer charge of $1,400 for each new home. It is unclear whether there will be variations on this amount between different housing types, e.g. detached house, medium density or high density dwellings. BIS Shrapnel projects new home production at 4,600 dwellings a year – although there is a great deal of uncertainty in forecasting the residential market in the current climate. A total of 4,600 dwellings would generate revenue of about $129 million over 20 years. This amount is less than half of the proposed growth-related cost recovery of $251 million. **It seems likely that the proposed $1,400 would prove to be insufficient and Hunter Water will seek to impose a levy of more than $2,800 a home.**

- A charge of $2,800 a home would represent a large proportion of the developer margin. It is unlikely that this could be absorbed. An additional development charge will raise the cost structure of new housing and some developments will not be viable until new home prices rise. The most likely outcome is that the charge will be passed on to home buyers, either through a higher price, or through a reduction in the size of new home lots.

- A higher price for new homes would reduce the affordability of residential land. It would extend the period of weakness in the housing market, **and prolong the current housing supply deficiency.** The rental market will remain tight, and there would be additional upward pressure on rentals.

Using development levies to fund the Tillegra Dam would be the equivalent of having a road toll that only applies to new model cars.

We hope both the NSW Government and the Independent Pricing and Regulatory Tribunal study this report carefully and act on its findings.

Aaron Gadiel
Chief Executive
Urban Taskforce Australia
October 2008

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1. EXECUTIVE SUMMARY

The stated objectives for constructing Tillegra Dam extend to having extra water for drought security, and providing water for the increase in demand associated with future population growth. The new dam comes at a cost of $406m in 2008/09 prices.

It is vital that the relative importance of these objectives is carefully evaluated. Hunter Water Corporation (HWC) projects an increase in demand of 20,000ML by 2031. This amount represents just 17% of the expected annual yield of 120,000ML from the combined yield of the existing storages and the new dam.

Given this, it seems clear that the great majority of the requirement for the dam relates to protection against climatic variation. In fact, the new dam would provide an additional 105,000 ML of annual yield that can be used for drought security, compared to total current average annual demand of about 70,000ML. However, Hunter Water recommends that the cost allocation for population growth should be 60% of the cost. Drought security notionally receives only 40% of the project cost.

We recommend that the costs are allocated on the basis of HWC identified use between drought security and population growth. Of these two needs, it is clear that the population growth requirement is more reliably projected. The projected demand is 20,000ML p.a. by 2031.

HWC needs to clearly indicate that the yield of the existing storages is not sufficient to meet growth in demand associated with population growth. It is surprising that this evidence is not provided in the submission.

Even more surprising, previous HWC analysis shows that the current storages can meet the increase in demand associated with population increase out to 2031. Relevant modelling is clearly set out in the *'Why Tillegra Now?'* report. It appears that HWC's own modeling shows that the marginal cost of supplying water for a population increase of 160,000 people from current storages is close to **zero.**

As the yield from current storages can meet demand from population growth, then the marginal cost of current storage infrastructure to provide water for this demand is close to zero – and none of the cost for Tillegra Dam should be allocated to the objective of enabling population growth.

- **On this basis, the entire cost of Tillegra Dam should be attributed to the objective of drought security.**

- **No cost should be allocated to the impact of having population growth of 160,000 persons. There should be no developer charges to help pay for Tillegra Dam.**

If, in the future, HWC provides evidence that the current storages are not sufficient to handle demand associated with population growth, then the issue of potential developer charges arises. In terms of the pricing policy used for the population growth objective, the options are to spread the cost across all households, or apply a developer charge.

We discuss the issues associated with applying developer charges to account for water demand through population growth. Developer charges are usually implemented to achieve funding for infrastructure that is directly related to services in proximity to residential development. In a new subdivision, there may be a road, water connection or

park that has a close proximity. The people living in the new subdivision will be the ones most likely to access that infrastructure.

Extending this approach to cost recovery for a new dam is fraught with danger. A new dam will generate water that can be accessed by anyone in the customer base, irrespective of where they live. Dividing the project cost between drought security and population growth objectives is complex enough – can a reliable relationship between dwelling construction and increments to demand for water be achieved?

IPART needs to be confident that people buying new dwellings can be reasonably expected to generate the additional demand for water. If this is not the case, then developer charges cannot be considered to be a reasonable pricing policy to achieve cost recovery.

Will dwelling construction relate directly to population growth? In our view, the evolution of household structures in the Hunter will greatly disrupt this simple relationship. The ageing population will be the dominant force for population growth and housing demand over the next twenty years. These households are currently under-utilising the housing stock. More than 100,000 established houses in the Hunter statistical division are currently occupied by just 1 or 2 people. This amounts to more than half of the current stock of detached houses. Most detached houses are occupied by people who are either in the retiree age group (65 years or more), or will be in this age group in the next ten years.

In the Hunter statistical division, there are 100,000 houses occupied by only 1 or 2 people. It would take about 20 years to build this many dwellings. It is most efficient to allow the market to gradually transfer ownership of the established dwellings to younger households, which will facilitate some of the region's population growth. This source of demand represents a key support for residential property prices – the household that draws greatest amenity from the dwelling will pay the highest price.

New medium and high density dwellings will be built to enable this efficient process. Should developer charges apply to these dwellings? Retiree households moving into new medium and high density dwellings would be forced to pay for an increment to water infrastructure that they do not 'use'. Younger families moving into a retiree's existing house would generate the demand for the infrastructure, but are not required to pay for it. These outcomes are inequitable, and are contrary to the principles of user pays pricing.

It would be almost impossible to trace the myriad of relationships between purchases of new dwellings, established properties and population growth. As a result, it is preferable to recover any 'growth' costs of new infrastructure through the current structure of user charges, as this involves the least distortion to behaviour, and is more equitable.

In the event that this view on pricing is adopted, then the issue of dividing costs between the objectives of drought security and population growth becomes irrelevant. In either case, the cost for Tillegra Dam should be recovered through user charges.

In summary:

- HWC analysis indicates that current storages can satisfy water demand from population growth out to 2031.
- As a result, there should be no developer charges to help pay for Tillegra Dam.

- Moreover, developer charges do not represent a user pays pricing policy.

- It seems perverse to require retirees who purchase new medium and high density dwellings to contribute more to funding water infrastructure than young families buying established houses.

2. COST ALLOCATION FOR TILLEGRA DAM

2.1. Current storages can facilitate population growth

This section addresses part 20 of IPART's review:

> *20. Appropriate arrangements for apportioning and sharing costs of Tillegra Dam between new development (developer charges) and existing customers (periodic charges)..*

In relation to future population growth in the Hunter, the Lower Hunter Regional Strategy is the key planning document in the Lower Hunter. The Strategy was released in 2006 and predicted the population in the Hunter would expand by 160,000 people over the next 25 years. In addressing this population growth the strategy addressed location of residential development, employment generating lands, environmental protection and also the mechanisms for servicing this expected growth. This discussion included a review of existing water reserves and their ability to service the future population of the Hunter. This discussion included the following quote:

> *"Provided demand for water in the nonresidential sector does not exceed current expectations and there is no significant unpredicted change in climatic conditions there will be sufficient water for the anticipated population growth in the Regional Strategy."*

The Lower Hunter Regional Strategy (2006-2031) did not predict that the Tillegra Dam was required to meet population growth. As a result of the above quote the Tillegra dam was not listed in the appendices of the strategy document where Hunter Water listed the infrastructure that was required to service the expected population.

The Lower Hunter Regional Strategy was drafted by the Department of Planning over a period of 3 years with input from the community and government agencies. The abovementioned comment on adequate water supply was based on Hunter Water's Integrated Water Resource Plan (IWRP) published in 2004. The IWRP was also an extensively researched document and it stated that the Tillegra Dam was not required meet the water demand needs of Hunter Water until 2035 and beyond.

This determination was referred to in NSW Parliament during the November 2006 debate of the Water Industry Competition Bill:

> *"…… the $37million Hunter and Gosford-Wyong Regional Water Sharing Project is an initiative established under the Federal Government's Water Smart Australia Program,…. The project is a commercial venture involving the construction of a pipeline between the Hunter and Gosford-Wyong water supply areas that is capable of transferring 20 megalitres a day. The project will better utilise the assets of the water-rich Hunter system and the large storage capacity of the Gosford-Wyong system….*
>
> *The only water infrastructure announcement that the Government has made for the region is the extraordinary $342-million Tillegra Dam proposal…….. In 2004 Hunter Water's Integrated Water Resource Plan, which outlined the 20-year water plan for the region, discounted the Tillegra Darn as a suitable option due to the high cost and the fact that there were more attractive options available. The plan states, in fact, with proposed staged upgrade works at Grahamstown Dam, a new water source would not be required within the next 30 years…."*

This evidence provides a historical assessment that the Tillegra Dam is not required to meet the population growth needs of Hunter Water for the next 30 years. The overriding reason for building Tillegra Dam now, is to help drought proof regions outside Hunter Water's area.

Analysis provided to BIS Shrapnel by Monteath and Powys indicates that Hunter Water's average storage level has been 80% of total capacity from 1991 until 2008. During that time there has been significant periods of drought statewide and nationally. This level of storage is evidence that the Hunter Water district indicates that the Hunter catchment is drought proof. Yet Hunter Water is suggesting that the Tillegra Dam is required to drought proof the Hunter.

By comparison, the Central Coast's storage levels over the same period have been as low as 11%. Clearly, the Central Coast is not drought proof.

Central Coast's Water Plan 2050 (a long term water supply strategy for the central Coast) states that its preferred option is for the construction of Tillegra Dam (which in the Plan is referred to as the "Regional Tillegra Dam"). It is understandable that the State Government would want Tillegra Dam built in order to provide drought proofing. However, drought proofing is not required for the Hunter Water catchment area but for other areas of the region including the upper Hunter Valley, Central Coast and potentially Sydney.

Evidence of such drought proofing is in the Central Coast Water Plan 2050 in which it is stated:-

> *"The NSW Government's proposed new 450,000 million litre dam at Tillegra, if built, could provide longer term benefits for the Central Coast Water supply system.*
>
> *This new dam would help ensure security of water transfers between Hunter Water and the Central Coast in the longer term which is an important plan of the Water Plan 2050 Strategy. The two councils will therefore investigate possible yield and cost options with the State Government to ensure any potential benefits to the region's water supply can be optimised."*

Most recently, comments by the Minister for Infrastructure in Parliament supports the view that Tillegra Dam is primarily required to provide drought security for the Central Coast:

> *The primary motivation for (Tillegra) dam is the Central Coast challenges and the diversification of water sourcing for the people of the Central Coast. It is about drought-proofing and making sure that, going forward, the people of the Central Coast will have sufficient water to meet their needs* (*Hansard* General Purpose Standing Commitee No. 1, Examination of proposed expenditure for the portfolio areas: Finance, Infrastructure, Regulatory Reform, Monday 13 October 2008)

These comments are consistent with the previous long-term planning recommendations.

However, they appear to be inconsistent with the recommendations of HWC on the recovery of costs for Tillegra Dam, which allocates 60% of the cost recovery to population growth in the Hunter region.

2.2. Hunter Water Corporation's recommendations on Tillegra Dam cost recovery

Hunter Water recommends that the cost of Tillegra Dam be divided between water required for drought security, and water required for future population growth. HWC projects an increase in water demand from future population growth totaling 20,000ML by 2031. To facilitate this demand, HWC asks that 60% of the cost of Tillegra Dam be allocated to the increase in demand.

Figure 4.1 of the HWC submission indicates the projected increase in total supply requirement (demand) over the period to 2031. Of this increase, projected domestic demand comprises about 15,000 ML.

The submission notes the decline in non-domestic demand, due to cessation of manufacturing operations in the region. It is worth noting that no allowance is made for a potential spike in future non-domestic demand. For example, a new power station in the region would generate a large rise in demand for water. This should be facilitated through the pricing structure – such as an allowance to reduce the household charge in the event of an unexpected jump in non-domestic water demand.

Hunter Water states that: 'A recent review of demand forecasting concluded that, while there is a range of factors that impact water demand, the most significant for Hunter Water is climate variability'. Given this statement, it might be expected that the most significant driver for construction of extra capacity would also be climate variability. However, this is not HWC's proposal, which allocates only 40% of the dam cost to drought protection.

Existing system capacity is about 290,000ML. It is worth noting that the yield of the current infrastructure is not specified in the submission. This is surprising, given its relevance to the objectives for Tillegra Dam.

To set pricing appropriately, it needs to be established whether the yield of the existing storages is sufficient to meet growth in demand associated with population growth. If the current storages can meet this increase in demand, then the marginal cost of storage infrastructure to provide water for this demand is close to zero – and none of the cost for Tillegra Dam should be allocated to the objective of enabling population growth.

In fact, HWC analysis indicates that the current storages can meet the increase in demand associated with population increase. Analysis summarised in the 'Why Tillegra Now?' report shows the performance of the current storages, with historical streamflows and current demand, and then showing the possible cumulative impacts – in sequence – of:

1: An increase in population of 160,000
2: A 10% drop in rainfall because of climate change
3: Supply to Central Coast

The authors then note that:

> *The addition of 160,000 people in the lower Hunter generally does not have a significant impact on the storage levels, except during the severity of the falls in the three severe droughts in the 1940s, 1960s and early 1980s. (pg 11, 'Why Tillegra Now?').*

This means that the purpose of Tillegra Dam is drought security:

In summary, the vulnerability of the lower Hunter water storages to drought, and the potential impact of climate change, are the two dominant factors to be considered in water resource planning for the region.

Water demand associated with population growth can be accommodated from current storages. HWC's own modeling has found that the marginal cost of supplying water for a population increase of 160,000 people from current storages is close to zero.

On this basis, the entire cost of Tillegra Dam should be attributed to the objective of drought security. No cost should be allocated to the impact of having population growth of 160,000 persons.

If this finding results from analysis of current storages, then consider the impact of the Tillegra Dam. **Tillegra Dam would also improve the yield from current storages.** The current storage capacity is 290,000ML. The storage capacity of Tillegra Dam would be 450,000ML. The combined capacity would be 740,000ML. From this capacity, the projected yield is 120,000ML. It is not clear how much positive effect the extra 450,000ML Tillegra Dam capacity would have on the yield from the current storages. HWC notes that there would be a substantial impact:

For a given water supply system, the potential rate of depletion during a drought (for a given climate sequence) will be a function of the rate of water supply – ie the higher the supply rate, the faster storage levels will drop. It therefore follows that the lower the demand, then the lower the trigger levels for contingency supply actions can be set, and the corresponding risk of reaching these triggers will also decrease. Why Tillegra Now? P.14

The ability to spread demand across the current storages and Tillegra Dam means that the yield from the current storages will rise sharply. It is not clear if this has been incorporated to the estimated yield for a system comprising current storage and Tillegra Dam. This impact should be established, as it determines the marginal cost of water supply in the future.

Given that drought security is the overwhelming reason for Tillegra Dam, then the positive impact of extra capacity on yield from current storages makes for a positive result. It reinforces the view that the marginal cost of supplying water for population growth from the current storages is zero.

Given that the marginal cost of supplying water for population growth from the current storages is zero, there should be no cost allocation to this objective. Hence there is no need to debate the relative merits of developer charges versus user charges.

2.3. HWC proposal for developer charges

To achieve drought security and an additional supply of 20,000ML for population growth, the dam is identified by HWC as 'the most cost effective option to address long-term supply and drought security'. Net project cost is identified as $406m (Table 7.1 of the HWC submission).

How is the cost to be distributed between the two specified objectives? Hunter Water uses a partial opportunity cost approach – that is, an estimate of the cost of achieving an objective through alternative measures.

It should be noted that this approach assumes that the combined opportunity costs of the two objectives would be higher than the cost of the dam – this follows from economic efficient allocation of resources. If the combined opportunity costs are lower than the cost of the dam, then the community would of course choose the alternatives, and not the dam. Naturally.

To justify this approach to assessing cost allocation, opportunity costs for both stated objectives need to be provided. That is, the opportunity cost for providing water required for both drought security and population growth should be identified.

If the existing capacity of HWC is sufficient to meet an objective, then the infrastructure opportunity cost is zero.

HWC does not articulate an opportunity cost relating to the cost of supplying water for population growth. Hunter Water should be required to identify and explain this opportunity cost. As noted in the previous section, the analysis provided in the *'Why Tillegra Now?'* report indicates that the supplying water for population growth can be achieved through the existing storages. This information should be the starting point for the consideration of cost allocation for the new dam.

HWC analysis indicates that the current system capacity can handle the projected increase in demand out to 2031. If so, then the opportunity cost of not building Tillegra Dam is zero in terms of demand associated with population increase. HWC should be required to demonstrate that this is not the case.

There is no detailed analysis of the opportunity cost for the drought security objective provided. The specified cost of alternative measures to achieve the drought security measure (100,000ML) is $155m. This cost is taken to imply that the opportunity cost of supplying additional water for population growth (20,000ML p.a.) must be more than $251m. This is not appropriate.

If the opportunity cost for supplying water for population growth is less than $251m, then the dam is not an efficient allocation of resources. This would make the opportunity cost approach to cost allocation redundant.
For example, it may be possible to expand the alternative measures identified and costed for drought security, in order to manage demand from population growth. The alternative measures for drought security have a specified cost of $155m.

If the alternative measures are sufficient to reduce ongoing demand, then the yield from the current storage would be substantially increased. This impact would make it even more likely that the current storages can accommodate demand associated with population increase.

This view raises questions about the investment in Tillegra Dam as an efficient allocation of resources. It may be argued that the IPART review is not seeking to address that issue. However, for whatever reason, it is not sufficient to adopt the opportunity cost for only one of the objectives for the dam.

HWC needs to establish that the current storages would not be sufficient to manage demand associated with population increase. If this is not established, then the allocation of Tillegra Dam cost to the population growth objective should be zero.

It may be argued that population increase beyond 2031 would raise demand to the point that Tillegra Dam is

needed. This argument is not relevant at this point. If this argument was considered relevant, then a case could be made for building capacity even greater than Tillegra Dam at this point. There must be a line drawn for the increase in demand that warrants investment **today** in extra capacity.

If HWC subsequently provides evidence in support of a case that current storages are not sufficient to accommodate population growth, then the issue of potential developer charges arises. In terms of the pricing policy used for the population growth objective, the options are to spread the cost across all households, or apply a developer charge.

We argue in the following section that there is not a simple relationship between dwelling construction and population growth. This means that developer charges are not an appropriate pricing policy.

2.4. IPART's Drought Proofing Precedent – Sydney Water

During the extended dry periods over the past ten years Sydney Water's storage levels have been as low as 31%. This is evidence that the Sydney Water area is not drought proof.

The Sydney Water's plan to drought proof Sydney is, inter alia, to construct a desalination plant at Kurnell Peninsula.

In June 2008, IPART released its final report on Sydney Water prices. This report stated that IPART had decided to:

> *"Set prices from 1 July 2008 to 30 June 2012 to generate expected total revenue of $8,323 million. This is the amount IPART has assessed as being required for Sydney Water to provide water, sewer and stormwater services.... These services reflect significant increases in Sydney Water's forecast expenditure which are largely driven by costs associated with the desalination plant and major recycled water projects....."*

IPART agreed that the cost of the desalination plant's construction was to be meet 100% by increasing the cost of water and sewer services provided by Sydney Water and not by the imposition of developer charges.

The cost of Hunter Water plan's to drought proof the Hunter by building the Tillegra Dam should adopt this IPART principle. Such cost should be met 100% by an increase in Hunter Water's water and sewer charges and not incorporated as developer charges into Development Service Plans.

2.5. Proposed value of developer charge

HWC has proposed a developer charge of $1,400 per residential lot. It is unclear whether there are variations on this amount, relating to the type of dwelling (i.e. a distinction between detached house, medium density or high density dwellings).

In any event, assume that the proposed charge is levied on 4,600 dwellings p.a. This rate of construction is reasonable given the expected economic environment – however, we do acknowledge the uncertainty of forecasting residential market outcomes in the current climate.

A total of 4,600 dwellings would generate revenue of about $6.4m p.a., or $129m over 20 years. This amount is less than half of the HWC proposed growth-related cost recovery of $251m. There is a major disconnect between the proposed $1,400 developer charge and cost recovery of $251m. It seems more likely that the proposed $1,400 would prove to be insufficient, and would need to be doubled to more than $2,800.

However, the level of developer charge is a moot point. Developer charges are not warranted because the dam is not required to enable population growth.

3. RELEVANCE OF DEVELOPER CHARGES FOR COST RECOVERY

This section addresses part 19 of IPART's review:

> *19. Whether Hunter Water's costs of Tillegra Dam should be incorporated in upfront developer charges or periodic prices or a combination of both.*

The view of Hunter Water is that developer charges should be levied to the extent that the new dam is required to provide water for future population growth in the Hunter region.

With this view, there is an implicit assumption that future population growth can only be achieved through the construction of new dwellings. Construction represents the increment to living space, so on the surface it would appear that construction goes hand-in-hand with population growth. If the people occupying new dwellings are the source of expansion in demand for water, then this might represent a reasonable argument in terms of economic principles. The people generating the extra water demand that necessitates (some proportion of) the new dam can pay for that infrastructure.

In our view, the evolution of household structures in the Hunter will not accord with this simple relationship. The ageing population will be the dominant force for population growth and housing demand over the next twenty years. These households are currently under-utilising the housing stock. More than 100,000 established houses in the Hunter statistical division are currently occupied by just 1 or 2 people. This amounts to more than half of the current stock of detached houses. Most detached houses are occupied by people who are either in the retiree age group (65 years or more), or will be in this age group in the next ten years.

Most older residents will remain in their house until they pass away, and then most likely the house will be sold and occupied by a younger household. In some cases, a retiree couple or single person will sell their house, and 'downsize' through the purchase of a new medium or high density dwelling in a retirement village or aged care facility. In either case, it is expected that the old house will be purchased by a younger household – a couple with children, or intending to start a family.

This turnover is a normal element of the residential property market. It is clear that this way of accommodating population growth will sharply increase in importance over the next twenty years, due to the ageing population. The market should be allowed to enable this process to occur. It is an efficient use of the housing stock.

This process means that dwelling construction does not go hand-in-hand with population growth. There is not a one-for-one relationship, because there is a large and growing stock of houses that could occupy more people. As the population in the Hunter region continues to age, it will be increasingly likely that population growth will be achieved through the greater absorption of the existing stock. It would be economically efficient to enable this to occur.

In the Hunter statistical division, there are 100,000 houses occupied by only 1 or 2 people. It would take about 20 years to build this many dwellings. It is most efficient to allow the market to gradually transfer ownership of the established dwellings to younger households, which will facilitate some of the region's population growth. This source of demand represents a key support for residential property prices – the household that draws greatest amenity from the dwelling will pay the highest price.

Additional developer charges will raise the cost of new dwellings relative to established dwellings. In a large proportion of cases, however, population growth will occur through the greater utilisation of the existing stock. In this case, a developer charge would be incompatible with the objective of relating the demand for the service (additional demand for water) with the supply cost. **This would be the equivalent of having a road toll that only applies to new model cars.**

Hunter Water is not in a position to determine which household movements are associated with population growth, and which are associated with other factors. In the absence of this knowledge a priori, it is evident that most 1 or 2 person households in detached houses will potentially facilitate population growth through the sale of their house. This group is likely to be the majority of all households for the next 30 years. It is therefore preferable to recover any infrastructure costs associated with broadly based population growth through regular charges that are levied across the existing household base.

In addition to being an inefficient method of aligning population growth with water infrastructure costs, developer charges would have wider impacts on households. The impacts are likely to be material, given the current conditions in the residential property market.

Poor affordability of new dwellings is a key part of the outlook. The rate of detached house construction in the Hunter SD reached a 25 year low in 2007/08. This outcome is primarily due to the high cost of residential land.

On the other hand, construction of medium and high density dwellings has been solid over the past five years, reflecting the expansion in demand from the 'empty nesters' and 'retiree' segments.

The imposition of developer charges for the purposes of paying for some of the cost of the proposed dam would raise the cost of new dwellings. The margins for residential subdivision development are currently running at a very low level. The low level of margins is understandable, given that the demand for new detached houses is currently at the lowest level since the early 1980s.

It is unlikely that developer charges would be passed through as lower prices for residential land. The price of englobo sites will have already been bid down, given the plunge in demand for new detached houses.

This means that any additional developer charge would be passed onto home buyers, through higher prices for new dwellings.

The proportional impact of a fixed developer charge will be greater for lower price dwellings – which would be medium and high density dwellings. In particular, the price of new dwellings at retirement homes and aged care units would be particularly affected.

The consequent rise in price of new dwellings will tend to dampen demand. As a result, new construction will be reduced, creating greater demand for established dwellings. Consequently, the price of established dwellings will also tend to rise, and affordability will get worse. Poor affordability will impede migration to the Hunter region, which could otherwise occur through the greater utilisation of the existing housing stock.

In addition, the price of new rental properties will tend to be higher. Since property prices are higher, investor will need to charge a higher rent to maintain their rental yield. This goal will be supported by the fact that there will be fewer investment properties being built. Hence, the supply of rental properties will be constrained, which will enable landlords to charge higher rents than they otherwise would.

These consequences indicate that developer charges will tend to have a wider impact on residential markets, and thereby affect all households. To a degree, these effects of poor affordability are already evident in the market, due to the large increase in the price of residential land: under supply of housing, poor affordability, and strong growth in rentals. The imposition of an additional developer charge would worsen the housing situation further.

Additional developer charges may be deemed to have a small marginal effect across all households – but then how might they be distinguished from the impact of a small rise in regular user charges.

Ultimately, we argue that the pricing structure should be aligned with the structure of demand. It is evident that population growth in the Hunter will be achieved through both the existing stock of housing, and the future increments of the stock.

In this context, it is unlikely that a reliable forecast can be made as to who actually generates the expansion in demand for water, and where these people live. The use of regular charges should be preferred to developer charges that distort the choice between new and established dwellings.

3.1. Relationship between population growth and new dwelling construction

Over the next thirty years, population growth across Australia will be disproportionately concentrated in the number of persons aged 65 years or more. The behaviour of this proportion of the population will be critical to determining how population growth is managed over the long-term.

The Hunter region will particularly feel the effect of this demographic change, as it already has a relatively high proportion of persons in this age bracket. In addition, there are many persons aged 50-64, the 'empty nester' age group, who live in the Hunter.

A great majority of empty nesters and retirees live in older, detached houses, either with a partner or by themselves. Currently, there are more than 100,000 detached houses in the Hunter statistical division that are occupied by only 1 or 2 persons. These houses account for more than 50% of the households in the Hunter.

The dominance of these households means that there is a rising volume of under-utilised housing space. As the population tends to age, the sale of detached houses by retirees will be a key market driver. The buyers of these houses will tend to be young families, and previously unoccupied rooms will be used by the children of the household.

In this environment, the change in household composition within the existing dwelling stock will represent a key method to facilitate population growth.

Many retirees will choose to stay in their existing dwelling until they pass away. Population growth will be achieved when the house is subsequently occupied by a young family.

In some cases, older persons move to new dwellings. Retirees who move into new dwellings will tend to downsize, purchasing medium and high density dwellings. In particular, retirement villages and aged care facilities are developments that favour medium and high density dwellings.

New dwelling construction will increasingly comprise medium and high density dwellings being bought by empty nester and retiree households, who fund these purchases through the sale of their old house. These new dwellings do not provide housing for natural increase in the population – the natural increase in population is accommodated in the established house stock vacated by the older persons.

If developer charges are levied on new medium and high density dwellings bought by retirees, then these people will be paying for the future infrastructure requirements for young families. This outcome would be entirely against the principles of a user pays approach to pricing policy.

There will be demand for new dwellings from upgraders, who sell an older property and are seeking more space and higher quality housing. The movements of these households does free up an existing dwelling, which can facilitate population growth (through migration inflow).

The problem is that a developer charge on new dwellings would not address the growth in population that occurs through greater occupation of the existing dwelling stock. The magnitude of this contribution is analysed in the following section.

3.2. Population Growth

The Hunter statistical division (Hunter SD) covers the whole of the Hunter. It roughly divides into two components, upper and lower Hunter. The lower Hunter is where the vast majority of the population reside (84%), containing the regional centres of Newcastle, Lake Macquarie, Port Stephens, Maitland and Cessnock. In this report we often focused on aggregates for the Hunter SD. While some towns in the upper Hunter that will not directly recognises any services from the Tillegra dam (at least with the current planning), they have been included in our aggregates. As the Upper Hunter only represents 16% of the total Hunter SD population, and is not overly structurally different, this has no tangible bearing on our final conclusions.

Population growth is determined by natural increase (births minus deaths) and net migration (interstate, intrastate and overseas).

After falling between 2000 and 2004, natural increase has begun creeping upwards in New South Wales, reaching an estimated high of 47,900 persons in 2008. Despite this movement, natural increase has remained relatively consistent over the years, with the recent rise being underpinned by a modest recovery in the fertility rate.

More importantly, the fluctuations in net overseas and interstate migration has resulted in differing levels of overall population growth in the state. New South Wales typically attracts the largest proportion of Australia's overseas migrants; however, population growth is offset by a net interstate outflow of population.

In the early 2000s, significantly lower than average levels of interstate migration out of the state, combined with rising net overseas migration, resulted in strong population growth, peaking at 82,000 people in 2000–01.

However, as the net interstate outflow increased to peak in 2002–03, in line with the peak in house price growth, population growth in the state declined to 50,600 people. In 2003/04, population growth troughed at 39,700 people, as high interstate migration outflows in the year coincided with the low levels of overseas migration into both Australia and New South Wales.

With a strong net overseas migration inflow now offsetting a slightly milder net interstate outflow, population growth has strengthened to an estimated 80,400 people in 2007–08.

Over the forecast period it is expected that population growth into New South Wales will remain relatively stable, peaking at 95,300 persons in the year ended June 2009, and falling only temporarily in 2011 as overseas migration declines.

Population change across New South Wales has generally been characterised by Sydney receiving the majority of overseas migrants but also experiencing a large interstate outflow, whilst the rest of New South Wales has experienced both positive internal and overseas migration. Regional areas including the Hunter have generally received low inflows of international migration relative to Sydney. While the level of overseas migration into the Hunter has been relatively low, it did increase notably over the 2001-2006 period.

Table 1: Population change New South Wales ('000s)

YEAR ENDED JUNE	NATURAL INCREASE	NET OVERSEAS MIGRATION	NET INTERSTATE MIGRATION	TOTAL INCREASE
2000	40.8	43.7	-14.3	70.2
2001	39.7	58.6	-16.3	82.0
2002	38.0	49.1	-24.4	62.7
2003	37.5	45.8	-32.7	50.6
2004	36.5	34.5	-31.3	39.7
2005	39.0	40.6	-26.5	53.0
2006	40.1	45.2	-24.6	60.7
2007	44.3	54.9	-27.3	71.9
2008e	47.9	54.5	-25.0	80.4
FORECASTS				
2009	48.5	67.9	-21.0	95.3
2010	49.1	59	-16.0	92.1
2011	4.94	47.2	-17.5	79.1
2012	48.9	53.1	-17.5	84.5
2013	48.7	59	-17.5	90.2

Source: ABS data, BIS Shrapnel forecasts

Over the 2002–2006 period, the Hunter statistical division (SD) typically experienced a higher rate of population growth (0.98% pa) than that of New South Wales overall (0.73% pa), including that of the Sydney SD (0.75% pa). This differential is primarily explained by regional areas in NSW, including the Hunter, benefitting from an outflow of population from Sydney in 2002-03 and 2003–04.

While a difference in population growth has been present between the Hunter SD and the NSW average, it has been relatively small. The limited variation is part reflects the population distribution of the Hunter being similar to that of New South Wales as a whole, and has been following the same gradual ageing process over the last 15 years. The key difference is that the Hunter region population is skewed to older age groups. The Hunter SD has relatively more people aged 50 years or more (25% of the total population) compared to that of New South Wales as a whole (22%).

Table 2 indicates that population growth in the Hunter SD is forecast to average 1.3% per annum over the five years to 2013. This compares closely to that of Sydney (1.39%) and New South Wales as a whole (1.24%). High net overseas migration over the next two years to 2010 will lead to stronger population growth in this period, although this is expected to then slow in the 2011 to 2013 period, as net overseas migration eases with slowing economic conditions, and the population profile continues to age.

As at June 2008, the resident population the Hunter SD was estimated to be 632,000 persons. This compares to metropolitan Sydney estimate of 4,395,200 persons, and the New South Wales total of 6,969,500 persons.

It is important to understand the Hunter region age structure, as it will play a pivotal role in determining the household formation in the future. Evaluation of household formation requires a focus on population growth for persons aged 20 years or more. In particular, household formation and dwelling demand can vary considerably across age groups, so it is useful to consider some broad age brackets.

Table 2: Population data, Hunter SD, Sydney SD and New South Wales ('000s)

YEAR ENDED JUNE	HUNTER S D		SYDNEY S D		NEW SOUTH WALES	
	POPULATION	% inc. pa	POPULATION	% inc. pa	POPULATION	% inc. pa
1996	554.2		3881.1		6,204.7	
1997	561.8	1.36	3928.7	1.22	6,277.0	1.16
1998	567.7	1.05	3969.6	1.04	6,339.1	0.99
1999	573.2	0.98	4020.0	1.27	6,411.4	1.14
2000	580.4	1.24	4069.1	1.22	6,486.2	1.17
2001	588.1	1.33	4128.3	1.45	6,575.2	1.37
2002	594.5	1.09	4163.9	0.86	6,629.8	0.83
2003	600.6	1.04	4192.7	0.69	6,674.4	0.67
2004	605.5	0.80	4217.3	0.59	6,710.5	0.54
2005	611.7	1.03	4247.6	0.72	6,758.3	0.71
2006	617.5	0.94	4284.4	0.87	6,817.2	0.87
2007	624.3	1.11	4336.4	1.21	6,889.1	1.05
2008e	632.0	1.23	4395.2	1.36	6,969.5	1.17
Compound Growth Rate %						
1996 - 2001		1.19		1.24		1.17
2002 - 2006		0.98		0.75		0.73
2007 - 2008		1.17		1.28		1.11
2009 -2013		1.30		1.39		1.24

Source: ABS data, BIS Shrapnel forecasts, e=estimate

Table 3 highlights forecast population growth by age bracket. Growth in the population of the 65+ age bracket has accelerated in both the Hunter and NSW as a whole. Over the next five years, growth in this age bracket is forecast to be 3.82% per annum in the Hunter and the 3.36% in New South Wales. Over the 2013-2023 period, growth in this 65+ age bracket is expected to continue to outstrip the average for the overall population. This trend will have deep implications for the composition of households in the Hunter. Demand for new dwellings will be increasingly driven by people reaching retirement age. Housing demand is likely to be concentrated in the form of medium and high density dwellings.

As the number of persons above retirement age rapidly increases, we expect that the composition of demand for new dwellings will shift away from detached houses, and towards medium and high density dwellings. There is some evidence of this shift in the composition of dwelling approvals over recent years.

We expect that a great majority of these movements will be financed by a single person or a couple selling their family home. We will show that about half of the detached houses in the hunter are occupied by only 1 or 2 persons, most of whom will be in the retiree age group at some point in the next twenty years. There will be an increasing amount of living space in older houses that is underutilised.

The movement of families to previously underutilised houses shapes the relationship between dwelling construction and population growth. We expect that a rising proportion of these houses will be bought by younger couples who are seeking space to allow themselves to start a family. This movement is an economically efficient way to enable population growth.

Table 3: Household number growth rates, Hunter and NSW

	AGE GROUP				
	20-34	35-49	50-64	65+	TOTAL
NSW compound growth %					
1996-2001	-0.30	1.14	3.76	1.87	1.37
2002-2006	0.42	0.37	2.26	1.38	1.00
2007-2008	0.53	0.64	2.53	2.36	1.37
2008-2013	1.35	0.16	1.79	3.36	1.51
2013-2018	0.41	0.89	0.83	3.15	1.22
2019-2023	0.12	0.84	0.85	2.88	1.12
Hunter compound growth %					
2008-2013	0.95	0.16	2.06	3.82	1.64
2013-2018	0.89	1.03	1.00	3.58	1.59
2019-2023	0.21	0.96	1.03	3.31	1.45

Source: ABS data, BIS Shrapnel forecasts

Table 4: Population breakdown, Hunter SD and NSW

HUNTER

Age Group	1996 Census	% of Total	2001 Census	% of Total	2006 Census	% of Total
0-14	118,267	22	117,738	21	116,560	20
15-19	36,999	7	39,135	7	40,307	7
20-34	112,982	21	105,287	19	105,829	18
35-49	117,808	22	120,916	21	123,130	21
50-64	78,265	14	94,296	17	109,468	19
65+	78,082	14	85,037	15	93,946	16
TOTAL	**542,403**	**100**	**562,409**	**100**	**589,240**	**100**

New South Wales

Age Group	1996 Census	% of Total	2001 Census	% of Total	2006 Census	% of Total
0-14	1,286,689	21	1,308,210	21	1,298,916	20
15-19	413,077	7	432,698	7	439,862	7
20-34	1,356,539	23	1,310,852	21	1,322,899	20
35-49	1,336,393	22	1,394,562	22	1,433,075	22
50-64	849,264	14	1,001,527	16	1,148,650	18
65+	764,244	13	822,932	13	905,777	14
TOTAL	**6,006,206**	**100**	**6,270,781**	**100**	**6,549,179**	**100**

Source: ABS data, BIS Shrapnel forecasts

Existing housing stock is underutilised by the population

Table 5 highlights the changing person density of the Hunter housing stock. There has been a clear increase in the number lone person households since the 1996 census, increasing from 29,643 to 36,729, a rate of growth significantly faster than for the total dwelling stock.

This partly reflected changing social trends (divorce rates, changing tastes, more group households), but predominately reflects higher populations of widowers maintaining occupation of the family house after the passing of their partner.

The number of houses holding two persons has increase in a similar fashion, increasing from 56,023 in 1996 to 66,733 in 2006. The percentage contribution of two person households has increased from 34% of the total house stock just over 36%.

With the baby boomer generation born in the 1945-1955 hitting retirement age, the volume of house's holding only one or two people is forecast to increase significantly as population in the 50-64 year age bracket increases strongly. In the medium term, growth is expected to be very strong for lone person households, as baby boomers move into the retiree age bracket.

Overall, households with 1 or 2 persons represented 56% of the total house stock in 2006. This is a relatively large proportion. In comparison, the figure for Sydney is just below 44%, and is showing a slower upwards trend. As the number of retirees increase in the coming years, this ratio will continue to rise. Eventually however, these houses will be turned over, as the aging population choose to downsize, or are forced by physical limitations.

This transition has the potential to require a rising number of new medium and high density dwellings to be built to cater for older persons.

Table 5: Number of households in separate houses, by number of persons, Hunter SD

	Number of Persons usually resident						
Census Year	1	2	3	4	5	6 or more	Total
1996	29,643	56,023	28,992	30,474	14,259	5,389	164,780
2001	33,682	62,009	29,982	30,770	13,883	5,326	175,652
2006	36,729	66,733	30,534	31,658	13,831	5,405	184,890
% contribution to total							
1996	18.0	34.0	17.6	18.5	8.7	3.3	100.0
2001	19.2	35.3	17.1	17.5	7.9	3.0	100.0
2006	19.9	36.1	16.5	17.1	7.5	2.9	100.0

Source: ABS data, BIS Shrapnel forecasts

3.3. Changing trends in dwelling composition

Dwelling construction can be split between detached houses and other dwellings. Other dwellings comprise medium and high density dwellings. Across NSW that has been a gradual trend to building relatively more medium and higher density dwellings as opposed to detached houses. Medium and high density dwellings (M&HD) include townhouses, villas and apartments. In part, rising demand for smaller dwellings reflects the aging of the population, with a greater flow of people in the 55+ age group looking to downsize. It also reflects the high price of broadhectare land in metropolitan area.

The changing dwelling composition is most evident in Sydney. Between 1991 and 1996, high density dwellings comprising 27% of total approvals. However, in following years construction has move away from houses towards smaller dwellings. Between 1996 and 2001 this proportion increased to 38% and to 44% over the 2001 to 2006 period. High density dwelling approvals now represent the largest component of new dwelling approvals in Greater Sydney.

Regional areas have experienced a similar trend to Sydney. In the Hunter region, between 2001/02 and 2002/03, other dwellings compromised approximately 28% of total dwelling approvals. This proportion increased strongly in the following years, increasing to approximately 38% between 2005/06 and 2007/08.

Table 6: Other dwelling contribution to total approvals, Hunter SD

Year Ended June	Other dwellings as a % of total dwelling approvals							
	Cessnock	Lake Macquarie	Maitland	Newcastle	Port Stephens	Great Lakes	Remainder	Total
200	13	14	3	60	35	22	4	28
2003	14	9	14	61	36	33	13	28
2004	12	35	14	68	32	37	12	36
2005	22	15	18	49	47	52	18	32
2006	26	34	28	67	48	43	21	41
2007	22	47	25	69	26	24	26	41
2008	34	22	10	54	58	11	44	36

Source: ABS data, BIS Shrapnel forecasts

Within the Hunter, construction of other dwellings has been concentrated in established areas, specifically Newcastle, Port Stephens and Lake Macquarie, where M&HD have contributed to more than 40% of approvals over the last 5 years. Residential land is more expensive in these areas, which has encouraged more M&HD.

Higher demand for M&HD is expected in the longer term, supported by the ageing of the population. This will be primarily driven by increasing numbers of the baby boomer generation becoming "empty nesters" or approaching retirement, and requiring a smaller dwelling to accommodate their now more modest housing needs.

With the children of the baby boomer generation staying in the family dwelling for longer periods, this trend is not expected to be immediately apparent over the next five years, but will be more significant beyond over time.

Consequently, as the availability of infill development potential declines, broadhectare development sites will

increasingly require larger medium density components as part of the master plan to accommodate future demand. M&HD are the principal dwelling types used in retirement developments. There are a number of significant aged care and accommodation projects planned to be developed over the next few years, with these highlighted in Table 7.

In comparison to the rest of NSW, the volume of additions from such projects is quite high in the Hunter. In part this reflects the demand of the aged to retire in attractive coastal settings, which the Hunter region has in relative abundance. But it also is reflective of the greater impact that the ageing of the population is having, and will continue to have on the Hunter region relative to the rest of New South Wales.

Table 7: Major aged care and accommodation projects in the pipeline for the Hunter

PROJECT	VALUE ($m)	Location	Units	Beds
Avondale retirement village, Crawford street campus	52.3	Lake Macquarie	220	128
Hillsborough retirement living	50.0	Lake Macquarie	100	100
Hunter Gardens retirement resort	35.0	Maitland	189	
Cartwright street retirement village	32.5	Maitland	155	
Cameron Park aged care facility - 2 storey	20.0	Lake Macquarie	156	
Cooranbong retirement village	20.0	Lake Macquarie	137	
Booragul retirement village - 2 storey	15.0	Lake Macquarie	90	
Forster Senior living units - 4 storey	14.0	Great Lakes	147	
Macquarie Place aged care facility	12.0	Lake Macquarie		120
Aberglasslyn aged care facility - 2 storey	10.0	Maitland		100
Booragul Nursing home - 3 storey	10.0	Lake Macquarie		90

Source: ABS data, BIS Shrapnel forecasts

3.4. Forecasts of demand for new dwellings

The underlying demand for new dwellings has three components:

- ***Household formation***—the propensity of segments of the population to create separate households requiring separate dwellings (e.g. by way of migration, marriage, separation, leaving the family home…etc), and is driven largely by population growth, although also reflects declining household sizes over the longer term;

- ***Demolitions and other factors***—the removal of a dwelling from the dwelling stock which creates a requirement for it to be replaced. In particular, knockdown-rebuilds mean that some detached house construction does not add to the housing stock. Hence, no population growth can be associated with this type of demolition project; and

- ***The change in unoccupied dwellings***—which includes holiday homes, buffer stock (i.e. vacant and available for rent or sale), etc and the increase/decrease in the amount of these dwellings.

Underlying demand for dwellings in the Hunter region has followed a similar path to New South Wales as a whole over the last decade. Over the 1997–2001 period, the demand and supply side of the overall Hunter residential market were relatively balanced. Steady growth in dwelling commencements between 1996/97 and 2000/01 diminished the moderate stock deficiency that developed during to downturn of 1996, despite underlying demand

increased over the few years to June 2000, driven principally by higher levels of net overseas migration into New South Wales. Household demand fell sharply in 2001 as a result of decreased household formation rates in the younger age cohorts and the absorption of excess dwelling stock.

Over the 2002–2006 period, average annual household formation fell back to an annual level of 3,050 dwellings, on par with a slowdown in population growth. This slowdown in population growth was however limited, as restrictive levels of housing affordability resulted in some migration out of Sydney and into regional areas, including the Hunter.

In the subsequent years, as the interstate outflow fell from its peak and the overseas migration inflow accelerated once more, underlying demand rose to an estimated 4,800 in 2006/07 and 2007/08.

The underlying demand for new dwellings is forecast to average 4,850 per annum over the five years to 2012–13, a considerable rise from the underlying dwelling demand average of 4,250 between 2002 and 2006.

Table 8: Annual underlying demand for dwellings, Hunter SD

Year ended June	Household Formation	Demolition	Change in Unoccupied Demolition	Annual Underlying Demand	Completions	Stock Deficiency
1997-2001	3,300	700	450	4,450	4,450	0
2002-2006	3,050	700	500	4,250	4,350	-500
2007-2008	3,600	700	500	4,800	3,650	2800
Forecasts						
2009-2013	3,600	750	500	4,850	4,855	2,775

Source: BIS Shrapnel forecasts

3.5. Supply of housing

Supply referred to the stock of dwellings and the additions to this strong through new dwelling projects. This is critical to understanding the true demand–supply position of the market, and to provide interpretation to rental and price movements.

New residential construction over the 1999–2004 period was influenced by the impact of government policy, distorting the traditional residential construction cycle. Total dwelling commencements in 1999–2000 remained high at 4871, being supported by additional demand ahead of the introduction of the GST, as new home buyers brought forward their decision to build in order to avoid the GST imposts. Given the "pull forward" in demand to avoid GST imposts, the subsequent downturn in the market was emphasized by the "drop off" of construction activity, with total dwelling commencements falling by 39% to 2,977 in 2000–01. This fall back was more pronounced in the Hunter than elsewhere, including metropolitan Sydney.

In response to the low level of commencements (which were the lowest level for 20 years at the national level), the Federal Government introduced an additional $7,000 (subsequently reduced to $3,000 and expiring on 30 June 2002) to the original $7,000 First Home Owner's Grant exclusively for first home buyers who constructed, or purchased, a new dwelling. This prompted a sharp rebound in the market, bringing first home buyer activity into the market that would have not otherwise taken place in 2001–02. Consequently, dwelling approvals rose by 51%.

Despite the expiry of the additional grant on 30 June 2002, dwelling approvals remained resilient in 2002-03, increasing by 11%. This growth was driven principally by other dwelling approvals, increasing 24% compared to a 6% increase for houses. The slowing in demand for new houses that started in 2002-03 was largely due to the sharp increase in the median land price.

In 2003–04, the rapid rise in house and land prices in the previous two years coincided with interest rate rises. The decline in affordability caused house approvals in the Hunter to contract by 3%. With continued investor confidence, other dwellings continued to see strong growth increasing 14%, with a few major M&HD projects getting underway.

House approvals continued to fall in 2004/05, down 21%. The sharp rise in property prices over the last few years, specifically relating to new broad hectare land, resulted in a dramatic deterioration in housing affordability. Detached house approvals continued their steep decline in 2005/06, dropping a further 21% to 2,230. Other dwellings on the other hand rebounded 16%, supported by demand from empty nesters and retirees.

House approvals stabilized at an extremely low level in 2006/07 and 2007/08. This situation reflects the very challenging affordability of new detached houses in the Hunter. We show in a later section that the ratio of land prices to established dwelling prices has risen to a very high level. This environment is significantly dampening demand for new detached houses. The low level of dwelling construction is reducing the availability of older established dwellings for the rental market, which is reflected in the low vacancy rate and strong growth in rentals.

Forecasts

Over the forecast period, the rental market will emerge as the key driver to dwelling construction. With affordability constrained, new dwellings commenced will continue to be below underlying demand, and we expect the current shortfall of dwellings to rise significantly. The current deficiency of dwelling stock has already placed significant pressure on the rental market, resulting in record low vacancy rates across Hunter, and considerable rise in rents. This is forecast to persist and will put the pieces in place for the following market upturn.

As the deficiency of stock reaches over a year's worth of demand by June 2009, dwelling construction will continue to escalate. However, as in 2007–08, the recovery is forecast to be hampered in 2008–09, as sentiment will be slow to improve. Affordability will still be below long term low levels and low yields will still prevent any substantial increase in investor interest. Nevertheless, total dwelling approvals are forecast to rise by a solid 9% for the year, underpinned by pent up demand.

Subsequently, activity will pick up strongly from 2009–10, as continuing rises in pent up demand manifests itself onto the market and the growth in the rental market will begin having a more positive impact on investor sentiment. At the same time housing variable interest rates would be easing, resulting in improved affordability. Total dwelling approvals are forecast to rise by 29% in the 2009–10, a further 20% in 2010–11, before peaking in 2011–12 at 6,650 dwellings, or a total rise of 96% in the four years to 2011–12. Growth is expected to be driven by both the house and other dwelling components of the residential market over this period.

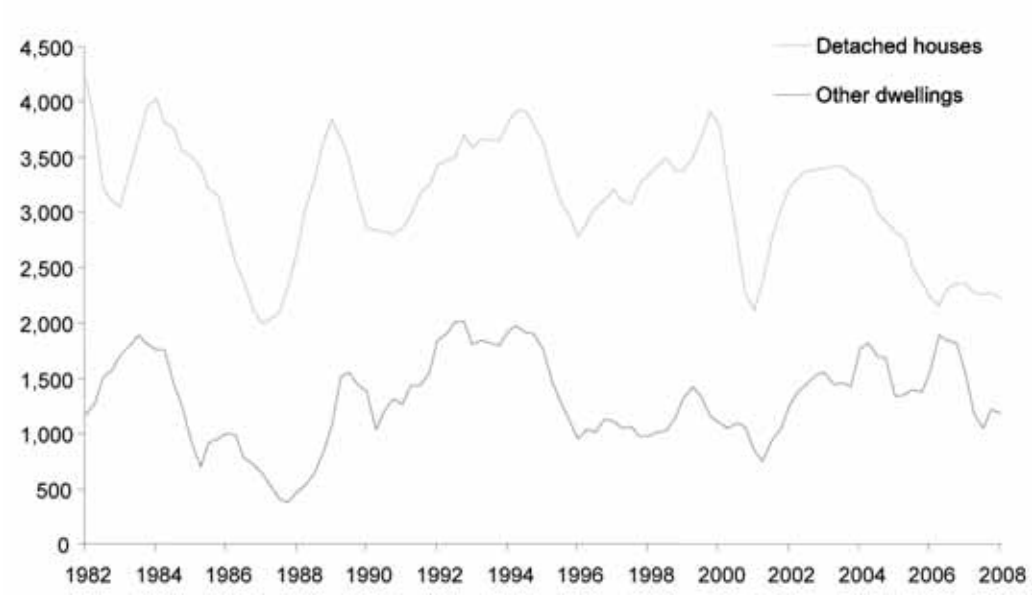
By 2012–13 however, the upturn in new dwelling construction will drive economic growth, leading to inflationary pressures and rising interest rates. Total dwelling commencements are then forecast to stall, falling by 5% as rising land and house prices worsens housing affordability and dampens demand.

Table 9: Annual dwelling Approvals, Hunter SD

Year ended June	Houses		Other Dwellings		Total	
	No.	% Var	No.	% Var	No.	% Var
1998	3346	4	976	-12	4322	
1999	3378	1	1322	35	4700	9
2000	3771	12	1100	-17	4871	4
2001	2127	-44	850	-23	2977	-39
2002	3224	52	1259	48	4483	51
2003	3402	6	1558	24	4960	11
2004	3302	-3	1777	14	5079	2
2005	2825	-14	1343	-24	4168	-18
2006	2230	-21	1556	16	3786	-9
2007	2349	5	1536	-1	3885	3
2008	2222	-5	1178	-23	3400	-12
Forecasts						
2009	2350	6	1350	15	3700	9
2010	3000	28	1775	31	4775	29
2011	3750	25	2000	13	5750	20
2012	4050	8	2600	30	6650	16
2013	3850	-5	2500	-4	6350	-5
Annual Average						
1984-19-88	3015		959		3975	
1989-1993	3315	10	1475	54	4790	21
1994-1998	3356	1	1348	-9	4704	-2
1999-2003	3180	-5	1218	-10	4398	-7
2004-2008	2586	-19	1478	21	4064	-8
2009-2013	3400	31	2045	38	5445	34
2014-2018	3169	-7	2155	5	5324	-2
2019-2023	2756	-13	2369	10	5124	-4

Source: ABS data, BIS Shrapnel forecasts

Chart 1: Dwelling approvals moving annual total, Hunter SD



Out to June 2018, approvals are expected begin accelerating again, increasing 16% from the 2012/13 level, driven principally by houses, as house affordability relative to Sydney, encourages greater intrastate migration into the Hunter. Approvals are forecast to increase by a further 4% out to 2023. As the general population structure of the Hunter ages, demand for M&HD is expected to represent a rising share of housing construction.

3.6. Deficiency of housing

In the long term, we would expect the number of new dwellings constructed to match the underlying demand for new dwellings. However, this is not the case from year to year. In periods of uncertainty, people sit out of the market, resulting in a deficiency of dwelling stock building up until the outlook improves. Alternatively, when price growth is strong, speculative activity takes place and excess dwellings are constructed.

The level of stock deficiency, or excess, is an indicator of the level of pent–up demand for new dwellings in the market, and consequently the future performance of new dwelling construction. In adverse economic conditions, sentiment is usually weak, and new housing construction is generally constrained. In this period, new supply is consequently below the underlying demand for new dwellings and a stock deficiency emerges. Alternatively, in a buoyant market, increased speculative construction will result in supply exceeding demand, and an excess stock develops.

In a conducive economic environment (i.e. low interest rates and/or a strong economy), a substantial stock deficiency will drive a strong market upturn (in both construction and prices), while a sizeable oversupply will prevent a major upturn until the excess stock is absorbed.

Site constraints and the inability to add to new dwelling supply at the rate required during an upturn, prevented a significant excess of dwelling stock building up before a market downturn. This has been one of the factors in Sydney's historically strong growth in residential property prices.

History

Pent up demand began to emerge during the downturn of the residential property market in 1995/96. This combined with improving economic conditions set the scene for a strong market upturn. Steady growth in commencements between 1997 and 2000 diminished the moderate stock deficiency that developed during to downturn of 1996. This occurred with underlying demand increased over the few years to June 2000, driven principally by higher levels of net overseas migration into NSW. At June 2001, the Hunter dwelling stock is estimated to have been in balance.

In the 2002-2006 period, average annual completions fell back mildly, the result of the strong upturn in residential activity that occurred during 2002/03 and 2003/04 being countered by significant weakness towards the end of the period. Despite dwelling completions falling back sharply in 2005 and 2006, average annual completions fell to 4,350, a level slightly above annual underlying demand. With this, a mild stock surplus built up out to June 2006 of 500 dwellings.

With an environment of rising interest rates and flat price growth in 2007 and 2008, average dwelling completions were significantly weaker, falling to 3,650. This had the impact of turning the mild 500 stock surplus that developed between 2002-2006, into a considerable stock deficiency of 2,800 dwellings at June 2008. Consequently, rental

vacancy rates have tightened with subsequent substantial rises in rents, although house prices across the Hunter have experienced more marginal growth in 2007–08, due to significant interest rate rises over the same period.

Residential building activity is expected to pick up considerably over the 2009-2013 period, specifically in the 2009-2012 period as rising rentals push some renters to become owner occupiers. With this, average annual completions are forecast to rise to 4,855.

Annual underlying demand is forecast to remain relatively unchanged during this period. With this, the level of construction close is estimated to approximately equal underlying demand, causing the housing shortage that developed during the 2007 and 2008 to remain in place by June 2013. As a result, the rental market is forecast to remain tight for the next five years.

3.7. Conclusions

Population growth occurs through natural increase (births less deaths) and migration flows. In NSW, these two components currently account for about the same magnitude of population increase.

The relationship between population growth and dwelling construction depends on the composition of household formation.

Household formation over the next few decades will be dominated by persons reaching retirement age.

Currently, more than half of the detached houses in the Hunter region are occupied by only 1 or 2 persons. This proportion will increase over the next decade, as the population ages. The proportion of lone person households will show the strongest growth, as older residents tend to pass away.

The rising prevalence of lone person households in existing houses will greatly affect the relationship between population growth and dwelling construction.

Demand for new dwellings will be increasingly driven by retirees, so that the ratio of medium and high density dwellings to detached houses will rise in the construction mix. This trend is already evident.

Retirees moving out of detached houses and into new medium and high density dwellings will tend to sell their property to younger families. This movement will facilitate population growth.

A large proportion of single retirees will remain in their house until they pass away. The subsequent occupation of the property by younger families will facilitate population growth.

A developer charge relating to new dwelling construction will not address the many cases where population growth is achieved through the existing dwelling stock.

Retiree households moving into new medium and high density dwellings would be forced to pay for an increment to water infrastructure that they do not 'use'. Younger families moving into a retiree's existing house would generate the demand for the infrastructure, but are not required to pay for it. These outcomes are inequitable, and are contrary to the principles of user pays pricing.

It would be almost impossible to trace the myriad of relationships between purchases of new dwellings, established properties and population growth. As a result, it is preferable to recover 'growth' costs of new infrastructure through the current structure of user charges, as this involves the least distortion to behaviour, and is more equitable.

4. IMPACT OF ADDITIONAL DEVELOPER CHARGE ON HOUSING MARKETS

4.1. Summary

Housing affordability in the Hunter region is already at a very challenging level. There have been very large increases in the price of residential property, both for established dwellings and residential land. There are mounting shortages of housing, as reflected in low vacancy rates and strong growth in rentals.

The high price of residential land is reflected in the extremely low level of detached house approvals. In 2007/08, detached house approvals were at the lowest level since the early 1980s.

With demand for new dwellings in subdivisions running at a very low level, margins for developers have been pressured down substantially. Low margins mean that it is unlikely that the additional charge will be absorbed by developers. If a residential development is unlikely to provide a reasonable developer margin, then developments will simply be deferred. This will obviously impact on supply and affordability as well the anticipated income by authorities.

Consequently, developer charges are likely to be passed on to new home buyers as higher prices. A rise in the cost of new dwellings would occur at a time when housing affordability is already at a critical level.

Imposition of an additional developer charge will increase the price of new dwellings, and thereby dampen demand. This impact will delay the expected recovery in dwelling construction that is expected to develop over the next five years. We expect that demand will shift towards established dwellings, and push up property prices. The delay in dwelling construction will mean that the supply of rental properties will be reduced, and the tightness in the rental market will persist for longer.

These market impacts mean that additional developer charges will tend to have effects that are dispersed across all households. These market impacts don't align with infrastructure cost recovery related to population growth.

4.2. Median House Prices

Property prices in NSW grew strongly in four years to June 2000, driven by strong underlying demand (due to a higher net overseas migration inflow and a low net interstate migration outflow) and a deficiency of dwelling stock, underpinned by strong economic conditions.

A brief setback occurred in 2000–01 in the NSW property housing market, as the market reacted to the introduction of the GST, interest rates rose and the dwelling stock deficiency was absorbed. The Hunter region weathered this reasonably well. While nominal house price growth slowed in Newcastle, it still remained positive, at 4.4%.

Continued strong underlying demand saw a dwelling deficiency subsequently rapidly re–emerge and, as interest rates fell, Newcastle median house price rose by 106% over the following three years to June 2003.

Consequently, underlying demand in New South Wales began to weaken as outward net interstate migration almost doubled between 2000–01 and 2003–04 due to residents seeking more affordable housing in regional areas or interstate. In addition net overseas migration into New South Wales also softened as New South Wales attracted a lower proportion of Australia's net overseas migration. This was evident in Newcastle's median house price growth, which went from 22.5% growth in 2003/04 to a 9.1% decline in 2004/05.

Table 10: Newcastle median house price, quarterly medians

Year ended June	House Price		CPI	Real House Price	
	$ '000	% Var	June '06=100	$ '000	No.
1999	140.0		79.3	176.6	-
2000	153.2	9.4	81.8	187.3	6.0
2001	160.0	4.4	86.7	184.5	-1.5
2002	211.0	31.9	89.2	236.6	28.2
2003	269.3	27.6	91.6	294.1	24.3
2004	330.0	22.5	93.8	351.7	19.6
2005	300.0	-9.1	96.2	311.9	-11.3
2006	305.0	1.7	100.0	305.0	-2.2
2007	327.7	7.4	102.1	321.0	5.2
2008 e	330.0	0.7	106.7	309.3	-3.6
Forecasts					
2009	340.0	3.0	110.7	307.2	-0.7
2010	360.0	5.9	114.1	315.4	2.7
2011	390.0	8.3	117.5	331.9	5.2
2012	425.0	9.0	121.5	349.7	5.3
2013	445.0	4.7	125.0	356.1	1.8
Compound Annual Growth %					
199-2008		10.0			6.4
2008-2013		6.2			2.9

Source: ABS data, BIS Shrapnel forecasts, e=estimate

However, over 2004–05 and 2005–06, New South Wales net interstate migration loss eased, and with net overseas migration increasing at the national level, New South Wales underlying demand improved. This placed upward pressure on rentals across the Hunter, leading to pockets of price rises. The Newcastle median house price showed signs of recovery in 2005/06, with nominal prices increasing a marginal 1.7% to June 2006. The median increased relatively strong in the twelve months to June 2007, increasing 7.4% to $327,700.

Although the past year has seen considerable rises in interest rates since August 2007 (1.4% rise in the standard variable rate in 2007–08), they have only just begun impacting more negatively on price growth at the start of 2008. Newcastle's median house price is forecast to increase by just 0.7% in the year to June 2008 to $330,000, with the strength of the rental market supporting house price growth, despite affordability worsening.

Continued inflationary pressure (combined with the potential for increased demand inflationary pressure from tax cuts from July 2008).

A slowing economy and affordability concerns will keep property prices at bay, despite upward pressure from rising rents and tightening vacancy rates. By June 2009, we expect Newcastle's median house price to increase by a marginal 3% for the year.

In 2010, we expect that housing mortgage rates will fall, independently of the Reserve Bank of Australia as the decreased cost of credit are subsequently passed on with the easing of the credit crunch. With house prices now underpinned by both falling interest rates, and a rising stock deficiency, which has tightened vacancy rates and spurred solid rental growth, the median house price in Newcastle is forecast to increase by 5% in 2009–10.

After five years of significant rental growth, Newcastle's median house price is expected to rise by 8.3% in the year to June 2011. Although we expect the RBA to respond to stronger economic growth and an accelerating residential sector with higher interest rates towards the end of 2010–11 into 2011–12, the momentum in price growth is forecast to continue over the remainder of the forecast period (albeit at a more moderate level), aided by a rising stock deficiency. By June 2013, Newcastle's median house price is forecast to be $445,000 with growth slowing to 4% in 2012–13.

Over the forecast period, Newcastle's house prices are expected to increase by a modest 6.2% per annum on average, although in real terms prices will experience a more marginal rise of 2.9% per annum. A very similar result is expected from Sydney, and New South Wales overall.

Land prices are very high relative to the price of established houses

Land price growth has been the dominate component of growth new house prices over the last decade.

Between 1996 and 2000, overall price growth was fairly modest, increasing at an average annual rate of 5.6% in the Hunter SD. While growth was relatively strong at 9.4% in 1996/97, growth slowed considerably in the following years, falling to 1.6% in 1999, before picking up mildly in 1999/00.

In the 2001-2004 period, land prices began a pronounced upswing, increasing at an average annual rate of 29.7%. Growth gradually accelerated over the 2001-2004 period, increasing from 12.1% in 2000/01 to a massive 62.6% in 2003/04. Similar growth was experienced in Sydney, but the larger growth occurred in 2001/03 (+24.3%) and 2002/03 (+54.2%). Sydney land price growth began to slow first, while in part reflects the Sydney market hitting a 'affordability ceiling' well before regional New South Wales.

Land price growth slowed considerably in the 2005-2008 period, with average annual growth of 0.4%. While some mild variation has existed year to year over this period, residential land prices in the Hunter have remained relatively flat at the high base established in the previous corresponding period. While historically, land prices still remain high, they continue to remain relatively cheap compared to Sydney, the major source of migration into the Hunter. Sydney land prices experienced an annual decline of 4.6% over the same period.

The sizable rise in residential land prices increased the median land component of the median house price form around 45% and the mid/late 1990s to 65% in 2007/08. With the development of a substantial stock deficiencies in the Hunter, relatively good affordability compared to Sydney, and increasingly limited lot production capacity, it is difficult to see any potential for land prices to fall going into the medium term future.

The high price of residential land relative to the price of established houses developed in 2002/03 and 2003/04. This shift in relative prices was followed by the sharp drop in demand for new detached houses in 2004/05 and 2005/06.

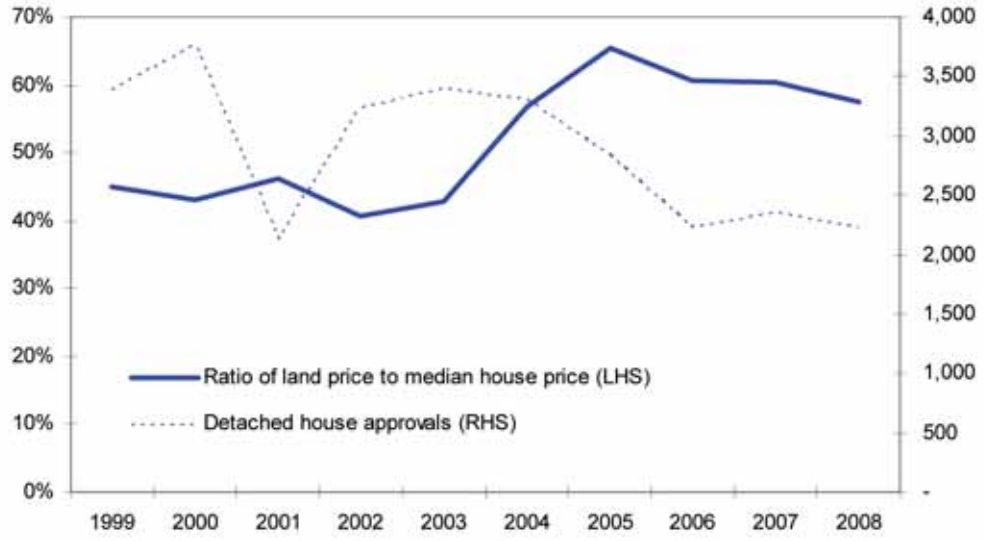
Home buyers have two options when buying a dwelling – purchase of an existing dwelling, or purchase a new dwelling. The relative price of established and new dwellings will influence this decision. As the price of residential land rose relative to established dwellings, it is understandable that this will tend to encourage some households to choose existing dwellings. This choice means that the supply of new properties tends to diminish and a deficiency of housing will emerge. This trend reflects a falling rental vacancy rate, strong growth in rentals, and support for residential property prices.

Table 11: Land price quarterly medians, quarterly medians

Year ended June	Hunter SD Median Land Price ($)	Annual Growth %	Newcastle Median Land Price ($)	Annual Growth %	Sydney Median Land Price ($)	Annual Growth %
1996	53,000				90,800	
1997	58,000	9			93,000	2
1998	62,000	7			107,000	15
1999	63,000	2	60,000		131,000	22
2000	66,000	5	69,000	15	150,000	15
2001	74,000	12	79,850	16	167,000	11
2002	86,000	16	98,000	23	207,500	24
2003	115,000	34	164,000	67	320,000	54
2004	187,000	63	225,000	37	356,000	11
2005	196,000	5	210,000	-7	350,000	-2
2006	185,000	-6	188,000	-10	325,000	-7
2007	198,000	7	200,000	6	310,000	-5
2008	190,000	-4	214,000	7	295,000	-5
Compound Growth %						
1997-2000		5.6		-		13.4
2001-2004		29.7		34.4		24.1
2005-2008		0.4		-1.2		-4.6

Source: ABS data, BIS Shrapnel forecasts

Chart 2: High land prices have choked off demand for new houses



Source: ABS data, BIS Shrapnel forecasts

Margin pressure on residential developers

Given the sharp drop in demand for new detached houses, it might be expected that the market would adjust by a change in prices. In particular, it might be expected that the price of englobo residential land would fall as land holders compete to sell the marginal hectares of land. The evidence of recent years in the Hunter region does not support this expectation. Residential land prices have been resilient despite the sharp fall in demand.

It is possible that prices would show significant declines in the future if there was an enduring slump in demand. However, we expect that land owners are holding out, given the evidence of housing shortages and rising rents. In this situation, it is likely that residential property will start to show solid growth again, which will encourage more buyers to buy new dwellings (as the relative price of established dwellings rises).

This viewpoint is backed by analysis of the cost structure of broadhectare development in the Hunter region. We find that profit margins for developers are at low levels, given the existing prices. Developers are price takers for the vast majority of their costs. It makes sense that profit margins are very low given that demand is at extremely low levels by historical standards.

A different viewpoint applies to median and high density infill projects. In most cases, these developments are dependent on land that can be used for other purposes – an existing dwelling, or perhaps commercial building. The highest marginal value use will tend to be applied. An additional developer charge will raise the cost structure, and some developments will not be economically viable until new dwelling prices rise.

It is evident that the high price of residential land relative to established dwellings has led to a sharp drop in demand for new detached houses over the past three years. In circumstances where demand falls, we could expect that there will be downward pressure on the price of land. This trend has been evident in real terms, as the medium price of land has been close to steady since 2003/04. Given inflation over the past four years, the real price of land has declined.

The deeper issue is that residential developers have limited control over the cost structure of subdivision development. The core elements by the land cost structure are land acquisition, government related charges and costs, and civil works for land preparation. Of these elements, payment for land acquisition is the key factor that developers will influence.

Our analysis is if residential subdivision economics in the Hunter indicates that profit margins are low. The margin for a subdivision in Maitland is estimated to be about 5-6%, or about $9,000 per lot. This margin is slightly better than that in south-west Sydney, where demand for new detached houses is running at a 50 year low.

Our view is that with such margins, developers will already be demanding the most competitive pricing possible when negotiating land acquisition.

An additional developer charge will come at a point where adverse land affordability is already depressing demand. A charge of $2,800 would represent a large proportion of the estimated developer margin. It is unlikely that this could be absorbed. The most likely outcome is that the charge will be passed on to home buyers, either through a higher price, or through a reduction in the average product offering (size of lot).

A higher price for residential would exuberate the poor affordability of residential land. It would extend the period of weakness in demand for new houses, and thereby mean that the deficiency of housing will persist for longer. The rental market will remain tight, and there would be some upward pressure on rentals.

Table 12: Estimated cost structure for residential subdivision development

Stage	Maitland ($ per lot)	South West Sydney ($ per lot)
Land Acquisition	**45,000**	**60,000**
Stamp Duty	2,435	4,052
Interest	14,326	19,102
Council Rates/Water	391	868
Land Tax	1,339	2,231
Purchase/Holding Costs	***18,492***	***26,254***
Council/Application Fee	1,500	2,000
Consultant Fees	6,500	8,103
Developer Contributions	20,000	26,000
Water and sewage connection	15,000	15,000
Proposed SIC Charge	0	35,000
GST on Land	4,091	6,818
Government Related Charges/Costs	***47,091***	***92,922***
Land Preparation	***50,000***	***57,881***
Marketing	2,300	2,300
Sales Fees	2,500	3,500
Other	4,800	5,800
Total Costs	***165,383***	***242,857***
Estimated Land Price $ (June 2008)	170,000	242,844
Developer profit	**4,617**	**5,987**
Developer margin	**2.8%**	**2.5%**
Average House Cost	150,000	190,000

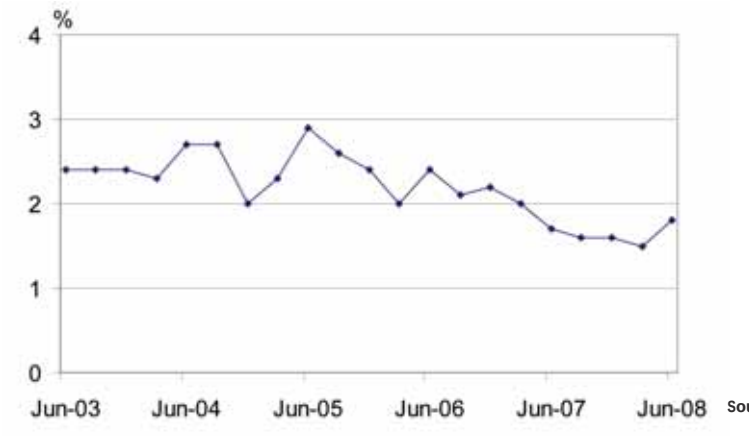
Source: Residential Development Council: Residential Development Cost Benchmarking Study, BIS Shrapnel

4.3. Rental market trends

In is necessary to investigate to the rental component of the Hunter property market, as it makes up a sizable proportion (approximately 26%) of total dwellings in the Hunter, and is important to explaining the dynamics of the market going into the future. Historical data generally shows a similar rental growth between houses and higher density dwellings. As a result, we concentrate on house rentals, as they make up the greatest component of the total dwelling stock.

Chart 3 below shows the residential rental vacancy rate for the Hunter region over the past five years. We consider that a vacancy rate of about 2.5% represents a reasonably balanced market. It is evident that the rental market has tightened considerably in 2007 and 2008. This tightness accords with our estimate of the dwelling stock deficiency in the Hunter, which increased sharply over the past two years following the plunge in dwelling starts in 2004/05 and 2005/06.

Chart 3: Residential rental vacancy rate, Hunter region



Source: REIA

The tightening of the rental market has contributed to a clear acceleration in rentals during 2007 and 2008.

Table 13 highlights the rental variation across the Hunter, and rental growth over the period 2001 and 2008. Median rentals in Lake Macquarie, Maitland, Newcastle and Port Stephens showed little variations in 2001, all in the $170-185 range. The median rental in Sydney was substantially higher, averaging $240.

Over the 2002 to 2006 period, annual rental growth in the Hunter was substantially higher than that of Sydney. The Hunter's average growth was 6.5% per annum in this period, with growth distributed fairly evenly across the whole region. Sydney's rental growth was substantially lower, averaging around 2% per annum. This sizable variation in growth rates contributed to a relative narrowing of the gap between Sydney and Hunter rentals.

In 2006/07, Sydney housing rentals did improve, rising 6%. This however was still lower that the general increases across the Hunter, with Lake Macquarie (8%), Newcastle (8%), and Port Stephens (11%) all experiencing stronger growth than Sydney. Hunter rental growth maintained this strong growth rate going into 2008, with Lake Macquarie, Maitland and Newcastle all experiencing growth rates in the 10-12% range. House rentals in Sydney played catch up in 2007/08, increasing a massive 18%.

Overall, rents between the 2002 to 2008 period have shown strong growth. All the Hunter areas have grown in the 53% and 72% range, with Newcastle growing the strongest and Port Stephens growing the weakest.

The overall growth in Sydney was substantially lower, at 38%. Sydney's limited growth in part reflects affordability, and greater outflows of persons in response to affordability issues in the Sydney housing market.

Table 13: Median three bedroom house rentals, 2001 to 2008

QUARTER	Cessnock	Kiama	Lake Macquarie	Maitland	Newcastle	Port Stephens	Sydney SD
Sep - 01	150	225	175	170	180	170	240
Jun - 02	160	240	190	180	193	180	240
Jun - 03	170	250	200	190	220	200	250
Jun - 04	180	260	220	210	230	200	250
Jun - 05	188	270	230	220	245	220	260
Jun - 06	190	270	240	230	260	225	265
Jun - 07	210	290	260	240	280	250	280
Jun - 08	230	310	290	265	310	260	330
Annual growth %							
2002	7	7	9	6	7	6	0
2003	6	4	5	6	14	11	4
2004	6	4	10	11	5	0	0
2005	4	4	5	5	7	10	4
2006	1	0	4	5	6	2	2
2007	11	7	8	4	8	11	6
2008	10	7	12	10	11	4	18

Source: Deparment of Housing NSW

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