

Parkside@Terrigal – Employment and Economic Impact

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Employment and Economic Impact – Parkside@Terrigal

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1. Executive Summary

This analysis applies the Input-Output tables of the National Accounts to estimate the economic effect of the proposed Parkside@Terrigal Development (P@T). This report concludes that the economic benefits of the project are significant and on-going.

The project has three key elements:

1. Construction of the development as a whole, incorporating a technology hub and community facilities;
 2. Impact of additional residential population;
 3. Impact of the operation of the commercial (home based business) component of the development;
- The five year construction phase will yield an estimated \$182m in economic benefits of which \$73m will flow to the Central Coast Region. A total of over 1,105 full time jobs will be supported, with approximately 637 occurring in the immediate region. The projected economic benefits of the project over the construction phase of the development will have a significant economic impact on the local community.

The ongoing annual economic impact of the residential and commercial components are also significant in terms of both employment and on-going economic impact.

- The annual wealth benefit from the residential estate is \$14.7m nationally. The benefit to the Central Coast Region will be \$12.5m per annum, involving some substitution effect from other areas of the economy.
- The annual benefit flowing from the home based business activities is \$35m with \$8.4m captured by the immediate Region. A total of 220 full time jobs will be created within the Estate supporting 110 owner/operators and 110 employees. The breakdown of industry sectors which will be represented in the estate has not been predicted. However, a common employment multiplier a factor of 2 (that is for each FTE job there will be another supported by the economic flow associated with the wages of the FTE jobs). This would make the total national multiplied effect 440 jobs, with 308 directly relating to the immediate region.
- The annual pay packet effect for the additional jobs is estimated to be \$3.4m per annum and \$14.6m (including net returns) for operator households.

When the benefits are averaged over a 10 year life cycle the annual benefits to the national economy are \$38m of which \$19m or 50% flows in to the Central Coast Region.

Economic Impact – Fully Operational

Product/service	National output gain \$m	Economic gain to the Central Coast \$m	National employment gain #FTE	Employment increase in the Central Coast # FTE
Construction of the whole Development	\$182m	\$73m	1,105	637
Income from new households moving to the area	NA	\$12.5m	NA	NA
Economic benefit from the new property development	\$3.8m	\$3.2m	6.5	6.5
Commercial activities	\$35m	\$8.4m	-	308

If the estate was simple a dormitory suburb then the household wealth effect would be \$14.7m per annum. Operating the development as a home based business estate changes the overall wealth effect to \$35m per annum. This represent a 100% increase in the household wealth effect and this has a significant flow-on effect in the local economy, both in spending and employment.

2. Background

2.1. The proposal

The Parkside@Terrigal (P@T) is a residential housing and home based business development, with 146 lots, located between the Terrigal and Erina CBDs. The proposal for P@T is somewhat unique, in that, it is designed to provide a combination of domestic living and small business activity. There is a growing trend for home-based businesses in Australia. According to recent research released by the Australian Bureau of Statistics (ABS) and summarised in the *Sydney Morning Herald* (29 April, 2005):

More than half of the nation's 1.3 million small businesses comprise just one person, and the ranks of those working from home are swelling. The bureau's latest figures show the proportion of small business based in the home rose from 58.3 per cent in 1997 to 67.5 per cent last June. About 70 per cent of the home-based business operators were men. The typical small business is a middle-aged man working 35-50 hours a week from home. The proportion of people working part-time in a home based business was higher than in other small businesses. But 30 per cent of small business operators worked more than 50 hours a week, and about 5 per cent work more than 75 hours.

This indicates that the growth in the small business sector is largely being driven by home based business activity. However, while government policy has recently focused on the fiscal and compliance issues impacting on home based business, there has been little, if any consideration of the physical and home environment. In addition, access to technology is another major factor, with 68.2% of home-based operators requiring access to the internet, according to the ABS (2005).

The P@T is structured around homes which are designed to support business activity and access to associated resources. In addition to broad band access, the estate will house a technology/business hub, providing supporting services and facilities, including: formal and informal meeting spaces; catering facilities; technology hub; stationary and business needs supplies; and an on site manager to program resource usage and business services. It is expected given the nature of the development and associated costs of locating in the development that 75% of dwellings will support business activities. Current statistics indicate that about 40% of these businesses will have 1-4 employees, with the remainder having a sole operator, with 1-2 part-time employees (who are often family members). On this basis, it is also estimated that across the estate the 110 businesses supported will engage the services of one full-time equivalent employee.

The analysis presented in this report is based directly on the construction and operation of the development. It does not take into account the cost savings which will be achieved with respect to public and associated private infrastructure by developing the site in a area adjacent to existing suburbs.

2.2. Key data for the proposal assessment

The current proposal is understood to involve the following key parameters:

1. There are 146 dwellings. The average construction cost per dwelling is estimated to be \$415,000 (including estate infrastructure costs of \$90,000 per dwelling). This indicates a total construction value of \$61 million [146 x \$425,000]. It is assumed that 85% of purchasers of the new homes will be sourced from outside the region, with 15% moving from within the region.
2. Construction of the Technology Hub/Infrastructure and Community Facilities (including buildings) is estimated to cost \$4 million.
3. Approximately 75% (110) of the dwellings will support business activity, with on average one operator (owner) and one FTE job per business. This represents 220 people working in (or from) the estate.

3. Our Approach

3.1. Goal of this report

The primary objective of this study is to estimate the overall economic impact of the development and operation of the Parkside@Terrigal Estate (P@T). The benefits from the construction phase are detailed, as well as the annual ongoing benefits from the operation of the imbedded business activities and residential “pay packet effect” of the development.

3.2. Structure of the economic impact report

The report will be partitioned as follows:

1. ***Economic Impact Construction Phase*** – the economic impact of constructing 146 homes and community facilities will be analysed, with particular respect to the employment (both direct and indirect) associated with the construction phase and the overall economic impact of the construction outlays, both locally and nationally.
2. ***Economic Impact Residential Estate*** – the economic impact of the residential estates will be analysed, with particular respect to the overall on-going economic value of the residential estate and related contribution to employment and economic activity.
3. ***Statement of Overall Economic Impact*** – the total economic value and impact of the construction, development and operation of the development will be outlined, with particular respect to the economic stimulus (added value) to the local economy.

3.3. Method adopted

The economic benefits of a particular form of activity are much greater than the output of that activity itself. There will be supplementary benefits for other sections of the economy. These flow-on effects are often much larger than the economic output of the isolated project under consideration. These flow-on impacts can be broadly classified as follows:

Output – the added level of production derived from increased activity within the industry in response to the initial stimulus and the added demand derived from increased consumption in the household sector as a result of wages and salaries derived from this increased activity.

Employment – the overall increase in jobs that will flow from the initial stimulus. The effect is usually expressed as persons per one million dollars expended.

The most appropriate way to capture this dynamic element of the economic process is through the National Accounts. These publications are the nation’s economic balance sheet and are used to derive gross domestic product (GDP) and its components: the national income account, the national capital account, the national financial account and

the national balance sheet. Income, capital and financial accounts and a balance sheet are provided for each sector of the economy.

Within the National Accounts there is a specific type of derived statistical tool called the Input-Output Tables. Input-Output tables present a comprehensive picture of the supply and use of goods and services (referred to collectively as 'products') in the economy and the incomes generated from production. These identify the linkages and interaction between different parts of the economy.

The possible size of these impacts can be illustrated using multipliers based on inter-industry flows in input-output tables. These multipliers indicate the proportion of inputs required to derive final output. These provide a way of answering some of the questions often asked by input-output practitioners. These queries tend to arise because of the types of "what if" analysis for which input-output tables can be used (for example, what would be the impact on employment of an x% change in output by the manufacturing industry). This type of analysis is dependent on a knowledge of input-output multipliers and their shortcomings. Using input-output tables, multipliers can be calculated to provide a simple means of working out the flow-on effects of a change in output in an industry on one or more of imports, income, employment or output in individual industries or in total. The multipliers can show just the 'first-round' effects, or the aggregated effects once all secondary effects have flowed through the system. This paper includes analysis of the secondary effects.

The multiplier itself has certain key components.

- The **initial effect** - an initial \$1m of extra output of the industry, and related employment in the industry to produce that output;
- a **production induced effect** - the combination of:
 - the **first round effect** - the amount of output and employment required from all industries that supply goods and services to the industry in order for that industry to produce the initial \$1m of extra output;
 - an **industrial support effect** - the induced extra output and employment from all industries to support the production of the first round effect;
- a **consumption induced effect** - the subsequent inducement for extra output and employment due to increased spending by the wage and salary earners across all industries arising from the compensation received for their labour as part of the other effects above.

Some qualifications need to be made.

- These multipliers are based on the national statistics. Regional multipliers are not available in any useful form. So assumptions have to be made in applying these to the local region.
- There is an implied reliance on the stability of the national accounts and related I-O tables. This assumption holds that the industrial structure of the Australian economy has remained unchanged since 1996/1997 when the I-O tables were

originally developed. This assumption directly affects the perceived accuracy of the resultant I-O multipliers.

- There is a general tendency of I-O frameworks to ignore the presence of supply side constraints. The implications of this assumption are that the economic impact tends to be overstated in situations where there is either excess production capacity, or limitations on availability of inputs (for example – skilled labour).
- An assumption needs to be made about imports: to what extent will inputs be sourced overseas. This analysis assumes no imports will be sourced from overseas (called the Direct Allocation of Imports Method).

Overall, the approach adopted represents a simple, direct and valid means of estimating the impact of the development.

4. Impact Analysis

This method can now be applied to the three key components:

1. Construction of the development as a whole, incorporating a technology hub and community facilities;
2. Impact of additional residential population;
3. Impact of the operation of the commercial (home based business) component of the development.

4.1. Economic Impact Construction Phase

The table below summarises the multipliers for output and employment in the construction industry. The most recent input-output tables available are for 1998-99. They show that, for every \$1m spent on construction output (houses, non-residential buildings, etc.) in 1998-99, a possible \$2.8m in output would be generated in the economy as a whole.

The most recent input-output employment table available is for 1996-97. This shows that every \$1m of additional output gives rise to 6 full-time jobs in the construction industry (the initial employment effect), and 17 full-time jobs in the economy as a whole from all effects. In many cases the employment impact will be higher in terms

Economic Impact of the Parkside@Terrigal: Construction Effects Only

	Initial effects (1)	First round effects (2)	Industrial support effects (3)	Production induced effects (4 = 2 + 3)	Consumption induced effects (5)	Total Multiplier (6 = 1 + 4 + 5)
Output (\$m)	1.000	0.456	0.425	0.881	0.915	2.796
Employment (no.)	6	3	2	5	6	17

(a) Direct Allocation of Imports method.

Source: Australian National Accounts: Input-Output Tables 1996-97, 1998-99 (5209.0).

of actual personnel as many will be employed on a part-time or casual basis (ie 17 full time jobs equates to say 34 part time jobs).

These flow-on effects are made up as follows. The **initial effect** of the additional construction is \$1m. The first round effect for this additional construction would be the increased value of activity of around \$0.5m in those businesses manufacturing the materials needed for the additional construction, such as concrete and steel frames. The businesses supplying and servicing the concrete and steel frame businesses, such as aggregate quarrying and raw steel production, experience an increased demand for their products and services. This **industrial support** effect is estimated to be an additional \$0.4m. As activity has increased in the construction industry, as well as in the suppliers

to that industry and the suppliers to the suppliers, there is an increase in wages and salaries to employees in this chain. The spending of these wages and salaries induces a further round of **consumption effects** in other areas of the economy totalling an additional \$1m.

Care is required in interpreting multiplier effects; their theoretical basis produces estimates which may overstate the actual impacts in terms of output and employment. Nevertheless, the estimates illustrate the high flow-on effects of construction activity to the rest of the economy. Clearly, through its multipliers, construction activity has a significant impact on the economy.

The estimated construction costs are:

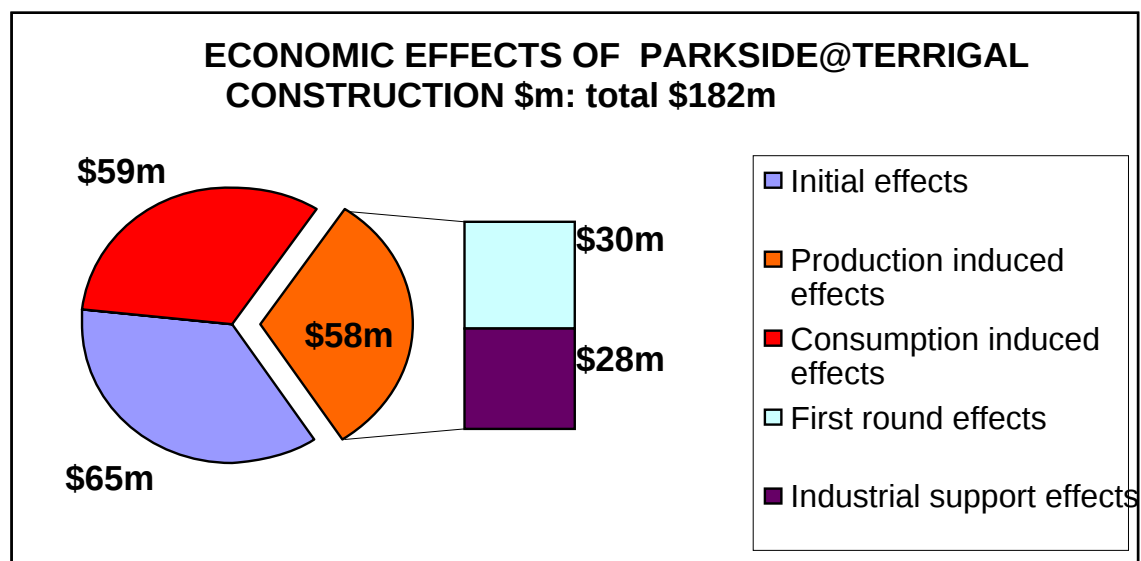
- Residential Buildings - \$61 million
- Community Facilities (including Technology Hub) - \$4 million

Total estimated construction costs - \$65 million.

Based on multipliers from the national accounts the flow on effects are:

- a **production induced effect** - the combination of:
 - the **first round effect** of $0.456 \times \$65\text{m}$ = \$30m
This is the amount of output required from all industries that supply goods and services to the construction industry
 - an **industrial support effect** of $0.425 \times \$65\text{m}$ = \$28m
This is the induced extra output from all industries to support the production of the first round effect;
- a **consumption induced effect** of $0.915 \times \$65\text{m}$ = \$59m
This is the subsequent inducement for extra output due to increased spending by the wage and salary earners across all industries arising from the first round effect:

The total national economic impact of the project is approximately \$182m. It seems reasonable to presume that 40% of these benefits would flow to the Central Coast Region. This is an estimate of the localised content of the direct and first round effects. It is likely to be conservative. From this estimate the boost to the local economy from the project would be at least \$73m.



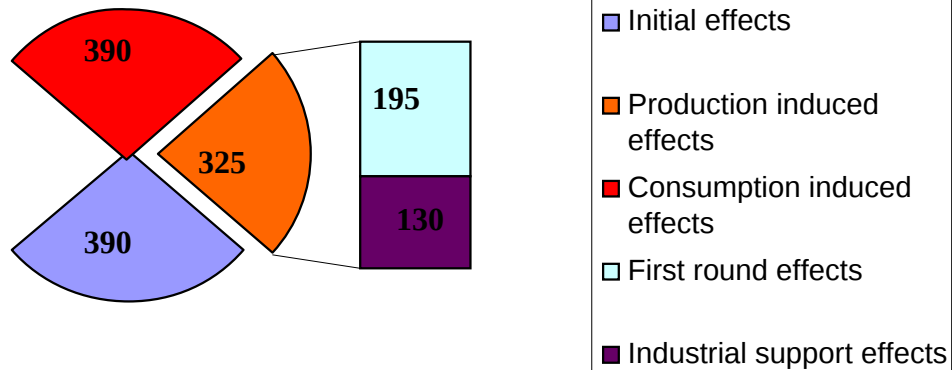
The chart below indicates the employment impact of the construction phase. The same basic procedure applies, but in this case each \$1 of construction expenditure generates a number of new full time equivalent (FTE) positions, both directly and in flow on-effects in other sectors. The initial effect of the additional construction is the amount of additional employment in the construction sector (6 persons per \$1m or 390 people). The jobs are assumed to be primarily locally based.

The first round effect relates to the extra labour required for the additional construction from suppliers of the materials needed for the construction phase, such as civil construction and timber frames. This amounts to three full time positions per \$1m or 195 positions.

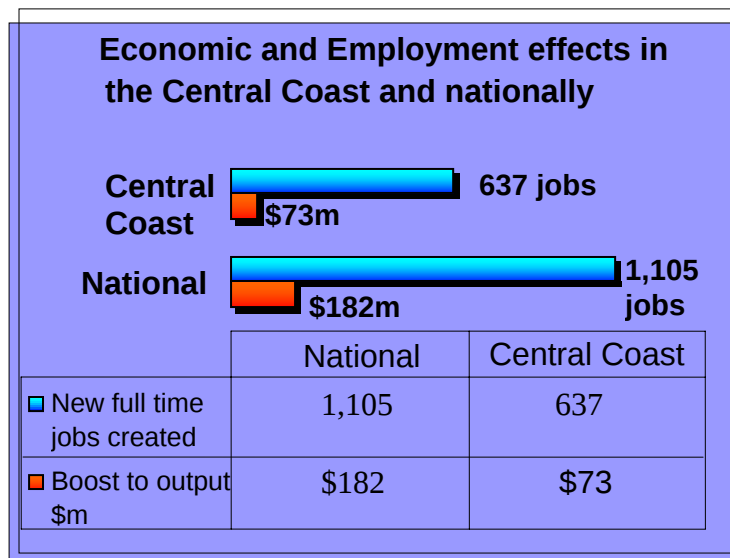
The businesses supplying and servicing the material and civil works, experience an increased demand for their products and services. This industrial support effect is estimated to create an additional two full time positions per \$1m or 130 positions. There is an increase in wages and salaries to employees in this chain valued by these induced production effects.

The spending of these wages and salaries induces a further round of consumption effects in other areas of the economy totalling an additional 6 full time positions per \$1m spent representing 390 positions for the first round. The final result is an increase in the number of full time positions by 1,105.

**EMPLOYMENT EFFECTS OF PARKSIDE@TERRIGAL
CONSTRUCTION: no. of full time jobs: total 1,105**



The employment gains will probably flow to the region in a higher proportion. This is because the direct effect on employment flowing from the construction investment will be substantially captured by the local labour force. This analysis therefore assumes that 90% of the employment gains from the direct construction expenditure will flow to the local labour market. The flow-on gains will accrue according to the standard assumption of 40% capture by the local economy. This leads to an estimate of 637 full time jobs in the immediate region.



4.2. Economic Impact Residential Estate

The 146 dwellings residential estate generates on-going economic activity. This effect has two components - a wealth effect associated with the movement into the region of new households and an output effect associated with the property as an ongoing income generating asset.

The increase in incomes can be calculated from assumptions about household income and the origin of the purchases of the residential properties. This analysis assumes that 85% of the purchases of the units derive from outside the Central Coast Region. The income of all the purchasers is assumed to be equal and to equate to the midpoint of the household income range for the upper (4th quartile) of household incomes in the Gosford LGA. Given the nature of the proposed development, it is reasonable to assume that the resident households will be predominantly drawn from this quartile (in addition, the estimate is toward the lower end of the quartile as one additional category > \$2,000 a week was excluded). Based on the 2001 Census data this was \$1,750 per week per household. Indexed for wage growth at 3.5%, this yields a current figure of \$100,893 per year. The first round wealth effects are outlined below.

Region	New Households	Income Effect
Central Coast	85% new households moved from outside the region	\$12.5m

In principle this will also lead to a multiplier effect, as the additional consumption flows through into other businesses (most of them locally based). Still, the national account framework adopted here does not produce this parameter as it operates at a higher level of aggregation. Consequently, second round consumption effects of the rise in households have not been included in this analysis. Although these flow-on effects may be significant in the region they will not be significant nationally as there will be no net increase in households in Australia as a result of the development. This is also commonly referred to as the “pay packet effect”, which simply means how much income flows into an area because of additional or new households. In the current case of the 146 new households, 124 (85%) are drawn from outside the region and hence provide additional funds flow into the region. Approximately 40% of these funds tend to be directly expended in the local region (the other 60% normally represent capital repayments, taxes and savings). In the current case this represents an estimated direct annual local spend of \$5 million.

The input-output framework can however be used to estimate the economic effect of the 146 new property assets. The multiplier adopted is not from the construction sector but from the ownership of dwellings sector. This output is calculated as the gross rent of dwellings (where tenanted) and imputed rent for owner occupied (what the rent would be if rented).

Based on a net 6% return on an investment of \$325,000 per unit (total value residential buildings/number residential buildings), the annual rent per unit is estimated to be \$19,500 (or \$2.8m in total). The total multiplier for this sector from the national

accounts is 1.344. The annual economic benefit from the residential units as a property asset is therefore \$3.8m. Overall, 100% of the direct output gain is enjoyed by the region and 40% of the additional multiplier of 0.344. This means that the benefit to the Central Coast Region is \$3.2m per annum.

The economic activity associated with the residential property (rent and imputed) will lead to a flow on employment benefit of 2 FTE per \$1 million, or in this case 6.5 FTE in the Central Coast Region.

4.3. Economic Impact – Home Based Business Activities

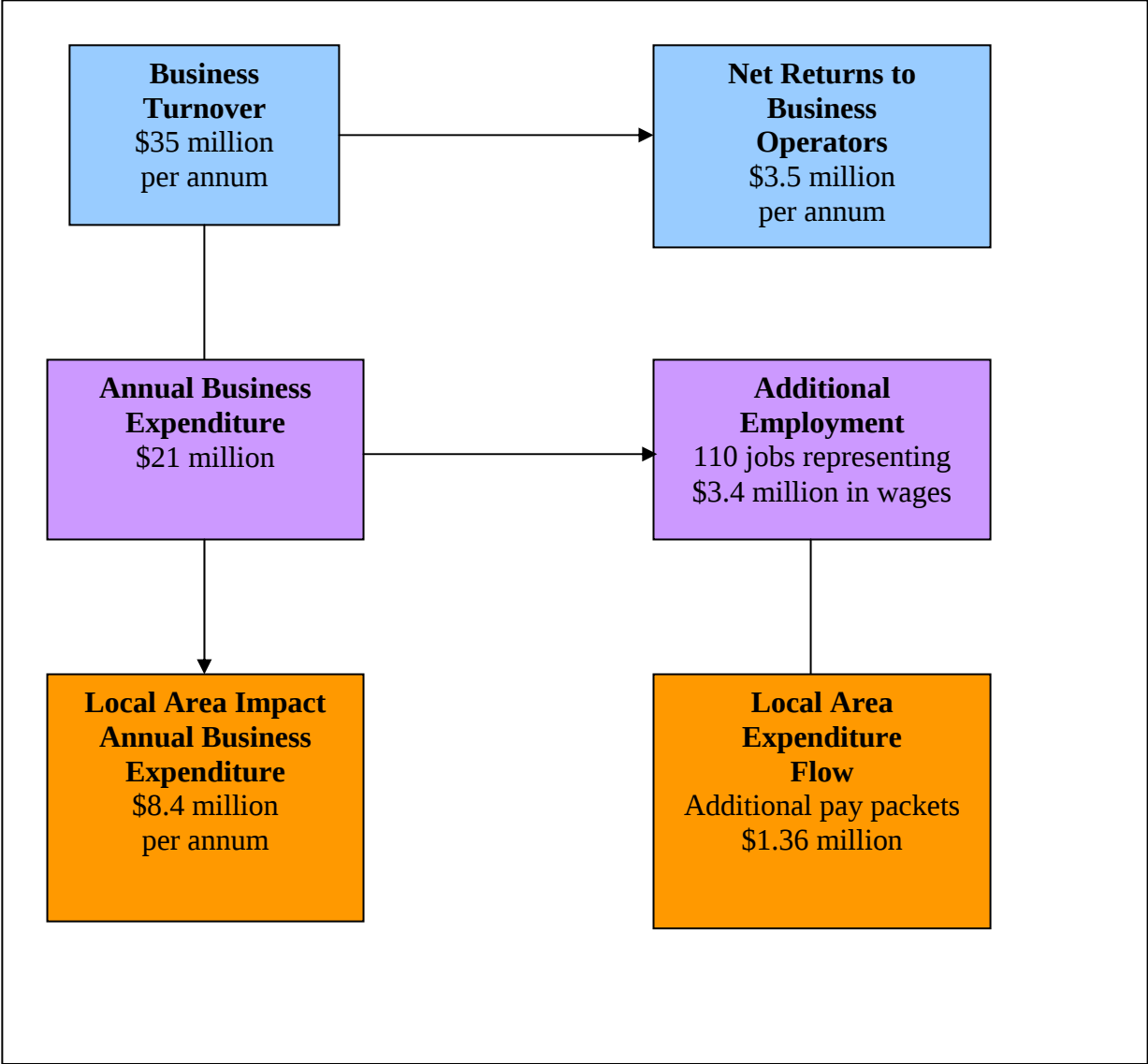
The household income projections presented in the previous section may be conservative when consideration is given to the operation of home based businesses in the estate, which operate as an extension of household activity. Given that over 1 in 2 small firms are based at home; that technology allows for remote access and information exchange; that more people are seeking to move out of Sydney and are shifting toward the Central Coast and Hunter Regions; and the specific design of this proposal; it is reasonable to expect that the estate will attract a significant number of home based business operators. In fact, given that an annual levy will be charged to support the business support facilities and a significant purchase premium charged on initial purchase to support the construction of the community facilities and technology hub, it is not expected that a significant number of residents will opt to live in the estate and not operate some form of business. On this basis it is estimated that 75% (110) of households will support a home based business and consistent with information detailed previously, will involve an operator (owner) and one full-time equivalent employee.

It is difficult to determine the specific income flow associated with the estimated 110 businesses. However, the national average turnover for small firms was \$279,000 for the 2000-01 year. Adjusting this figure for inflation by 3.5% per annum results in a current dollar estimate of \$320,160 per annum. This represents a total estimated annual turnover for the business activity in the estate of \$35 million. If the average household income of \$100,893 is deducted from this turnover, then there is a net difference in gross revenue inflow of \$219,266 per business household, representing an annual total of \$24 million. So by directly encouraging home based business the revenue flow per household, for all households in the estate increases from the average household income by \$164,000. Obviously, this revenue flow will attract expenditure. On average, small firms make a net return of 10%. However, the 90% expenditure level will normally include owner wages. So on this basis, there will be net revenue flows of \$32,000 per business household (\$3.5 million in total per annum) and expenditures of \$187,000 (\$21 million in total per annum), including the wages of employees. It is expected that much of the \$21 million will be expended in the local community. If the 40% local spend estimate is applied then this represents an annual local economic value of \$8.4 million. This will also have a significant multiplied effect within the local economy.

In addition, the employment value of the business activity should also be considered. The midpoint range of individual wages in the Gosford LGA is \$500-\$599. If we apply the midpoint of this range, this represents an annual wage of

\$31,709 (adjusted from the 2001 figure, for annual wage increases of 3.5%). The additional pay packet effect of this employment is \$3,488,026 per annum.

Parkside@Terrigal – Home Based Business Impact



4.4. Statement of Overall Economic Impact

These various economic outcomes can now be drawn together so that the economic potential of the project can be understood. It should be noted that there are likely to be significant synergistic benefits associated with such a community based business model. There would also be economies of scope. This refers to the capacity to reduce costs captured by applying such synergies. An example would be that a single IT maintenance and service supplier would support such an integrated development, reducing the costs relative to contracting for such services on a business by business basis.¹ The relevance of this for the economic analysis is that this would increase the gross margin for the operations which would lead over time to an expansion of output. This analysis does not consider these dynamic effects, but they would certainly increase the economic value of the project.

The aggregate results nationally and for the Central Coast Region in terms of annual economic benefit and employment are listed in the table below. Clearly, the construction phase, represents a significant one-off economic stimulus. However, it should be noted that the benefits of the construction phase and the operation phase for the development are likely to overlap. So the best way to calculate an overall benefit to the region is using a 10 year evaluation period, with a 5 year development and construction phase and a 5 year operations phase. Assume that output grows at the rate of inflation, no discounting is required over time to produce current year dollars. On this basis, for the 10 year analysis the total benefit to the economy is \$376m and \$194m in the Central Coast region. The average annual benefit is therefore \$38m to the nation and \$19m to the immediate region with 220 full-time on-going direct jobs.

Economic Impact – Fully Operational

Product/service	National output gain \$m	Economic gain to the Central Coast \$m	National employment gain #FTE	Employment increase in the Central Coast # FTE
Construction of the whole Development	\$182m	\$73m	1,105	637
Income from new households moving to the area	NA	\$12.5m	NA	NA
Economic benefit from the new property development	\$3.8m	\$3.2m	6.5	6.5

¹ Note that no separate measurement of this is warranted as this is captured by the employment multipliers.

Commercial activities	\$35m	\$8.4m	-	308
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5.0 Conclusions

The economic impacts of the P@T are significant and on-going. The analysis indicates that for the construction phase \$182m in economic benefits will occur, with \$73m flowing to the Central Coast Region. A total of over 637 new full time jobs will be created in the region. The projected economic benefits of the project over the construction phase of the development will have a significant economic impact on the local community.

The ongoing annual economic impact of the residential and commercial components are also significant in terms of both employment and economic impact:

- The annual income benefit from the residential estate is \$14.7m nationally. The benefit to the Central Coast Region will be \$12.5m per annum, involving some substitution effect from other areas of the economy.
- The annual benefit flowing from the home based business activities is \$35m with \$8.4m captured by the immediate Region. A total of 110 full time jobs will be created within the Region, supporting 110 owner/operators.
- The annual pay packet effect for the additional jobs is estimated to be \$3.4m per annum and \$14.6m (including net returns) for operator households.

When the benefits are averaged over a 10 year life cycle the annual benefits to the national economy are \$38m of which \$19m or 50% flows in to the Central Coast Region.

If the estate was simple a dormitory suburb then the household wealth effect would be \$14.7m per annum. Operating the development as a home based business estate changes the overall wealth effect to \$35m per annum. This represent a 100% increase in the household wealth effect and this has a significant flow-on effect in the local economy, both in spending and employment.

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