



An Economic Assessment

Former Kingston High School Site Redevelopment

Prepared for Kingborough City Council

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EXECUTIVE SUMMARY

The redevelopment of the former Kingston High School (KHS) Site will have a significant impact on the economy of Kingston and the surrounding area.

Our analysis and modelling identifies that the economic benefits of the redevelopment will stem from the following key areas:

1. Job Generation – the successful redevelopment of the former KHS Site as envisaged in the proposed Development Plan would generate jobs during the construction phase (an estimated 253 job years), as well as through construction multiplier effects (i.e. potentially a further 677 job years).
2. The ongoing operation of commercial, civic and community facilities developed during the construction phase would lead to significant lasting employment benefits, and the operation of new retail, commercial, civic and cultural facilities (an estimated 638 jobs).
3. Output Benefits – the operational phase of the former KHS Site redevelopment will generate additional output¹ through the employment generated on-site in new facilities (an estimated net additional \$78.97 million per annum).
4. Construction Related Benefits - an estimated \$89m in construction related investment would be created through the redevelopment of the High School Site. The redevelopment will comprise new residential dwellings, mixed-use commercial and retail premises, public facilities and open space consisting of an iconic adventure playground.
5. An estimated \$205 million in Production and Consumption Induced Construction Multiplier Benefits – these benefits would be spread across the national economy, although would in part be secured by the economy of Kingborough LGA and the Southern Tasmania region.
6. Retail Expenditure – additional expenditure would be generated for the benefit of local businesses as a result of spend from:
 - Additional workers in premises on the redeveloped site (estimated at \$1.6m per annum);
 - Additional CBD residents (estimated \$0.95m per annum);

¹ The end value of all goods and services produced in the economy on an annual basis

- Visitors attracted to the region through facilities located on the redeveloped site, including the proposed adventure playground facility (estimated at \$1.1m per annum); and
- Construction workers (estimated at \$0.64m over the course of the site redevelopment).

In addition to the quantified economic benefits, there will be significant additional benefits to Kingston that have not been quantified. These include:

- Amenity benefits - the redevelopment of the former KHS Site which has stood vacant since early 2011 will greatly enhance public amenity with improved urban design ;
- Improved access to open space;
- Increased levels of activity within the Kingston CBD, leading to
- Improved passive surveillance and public safety, with extended use of the CBD area outside of core business hours resulting from a diversification of land uses and business functions;
- Sustainability benefits accruing from centrally located facilities reducing the need for multi-stop trips within the CBD;
- Health benefits resulting from the increased provision of open space, increasing opportunities for the resident population to exercise;
- Opportunities for small business and creative / cultural industries in developed commercial premises;
- Improved retail provision and price competition within the CBD and opportunity for the provision of a complementary range of retailing focussed around café/ restaurant dining, catering for new and existing residents, for workers based in new developments in the CBD, and for visitors to the CBD attracted to Kingston by the development of iconic open space facilities;
- Additional impetus for development elsewhere in Kingston, including infill development, with development on the former KHS site providing examples of good design and use of space; and
- Providing increased diversity of housing development forms and residential market price points, improving housing options for younger buyers and retirees.

The Cost Benefit Analysis assesses direct costs and benefits resulting from the redevelopment of the former KHS Site. Benefits assessed in the model include industry value add, the terminal value of development, and the indirect impact on the economy measured by input output multipliers. Direct benefits to the region, using a discount rate of 7% are estimated at:

- Net Present Value (NPV) of \$274 million;
- IRR of 25.3%; and
- A Benefit Cost Ratio (BCR) of 4.10.

Once indirect benefits are included the total benefits, including multiplier effects, the benefits are estimated at:

- NPV of \$1,030 million;
- IRR of 52%; and
- A BCR of 12.6.

1 INTRODUCTION

This economic assessment relates to the redevelopment of the Former Kingston High School (KHS) Site in Kingston. The assessment examines the economic impacts of the proposed development outlines for the site as identified in the proposed Site Development Plan.

The first section of the report provides an introduction to the site and the local context in which the proposed redevelopment will take place, and overview of the Development Proposal.

Section 2 provides the economic impact analysis, identifying the impacts from the construction and operational phases of the proposed development and quantifying the impact of additional expenditure from additional workers, residents and visitors.

Section 3 provides the results of the Cost Benefit Analysis (CBA) modelling undertaken.

Section 4 provides a summary of the findings.

The Local Economic Context

It is intended that the redevelopment of the KHS Site will reinvigorate the Kingston community and stimulate investment and development throughout the CBD. The fragmentation of retail and services provision through the CBD in the current configuration means that the centre fails to fully capitalise on its advantageous position, the natural environment surrounding the town, and the significant population growth that has occurred in the municipality.

Population growth rates in Kingborough have exceeded those of the State over recent years and over the period 2012-2013, population growth in Kingborough accounted for 7% of total State population growth. The strong growth is projected to continue. Over the 20 years to 2035, Kingborough is projected to have the third highest population growth rates in Tasmania, with the population increasing by nearly 11,500 over the period at an average annual growth rate of 1.05% and accounting for over a fifth of total projected net state population increase².

However, the population is ageing. This trend, as has been experienced across the rest of the State, is projected to continue. The aging of the population will have an impact on the services required

² Tasmanian Government, Department of Treasury and Finance 2014 Population Projections for Tasmania and its Local Government Areas

within the municipality and the form of housing required by residents of the LGA. Increased provision of medium to higher density dwelling forms are likely to be required to enable local residents to age in-place.

The LGA also experiences a net outflow of labour to Hobart. Over 6,500 Kingborough residents commute to work in Hobart³, with around 800 Hobart residents commuting to work in Kingborough. Other local LGAs also account for a significant proportion of the Kingborough resident population workforce: while nearly 5,500 - or 38% - of the municipality's employed residents work within Kingborough, nearly 50% travel to Hobart, 8% and 5% work in Glenorchy and Clarence respectively, with the remaining 3% working in Derwent Valley, Huon Valley, Brighton and Sorrel. 71% of the Kingborough workforce also lives within the municipality.

A challenge facing Kingborough is the retention of a higher proportion of the local labour force working within the LGA. Workforce retail spending that can be retained within the LGA, reinforces the viability of local retail and strengthens local employment prospects. It is therefore, important for the local economy to attract as many jobs for local residents as possible. This is needed in order to ensure that less of the expenditure from the LGA leaks out of the local economy to Hobart and the rest of the region. Kingston has an important role to play as a key employment centre of the South Tasmania region.

By enabling redevelopment on the former Kingston High School site, opportunities will be provided for the continued growth in Kingston, not only growth of the resident population, but also and equally importantly, growth in the labour force. Current CBD capacity constraints will be overcome and existing businesses and retailers within the region will benefit from an expanded customer base.

The Site

The former KHS Site is the most important development opportunity in the town. The site and site boundary are shown in the image below. The site contains the former Kingston High School. The school was relocated in early 2011, and the former KHS Site has since been vacant. Following a period of negotiation Council purchased the site from State Government for \$1.5 million. The cost of purchase was based on an assessment of the residual land value based on the

³ Tasmanian Government State Growth Journey to work Report 2011

development plan proposed by Council (i.e. incorporating significant elements of non-commercial development) rather than the \$8.5 million value determined by State government if the site was to be sold for commercial development.

Figure 1 - Former Kingston High School Site



Source: Kingborough (KHS) Business Plan

How the former KHS Site is developed will be critical in determining the future viability of the whole Kingston CBD. It is a critical project for the economic future of the Kingborough municipality.

The former KHS Site accounts for a significant component of the land within Kingston CBD. It is well-located relative to Kingston CBD with permeability through John Street and adjoining the Channel Highway.

The future redevelopment of the site can only be considered within the context of this CBD and any review of the future development of the KHS Site should be primarily concerned with how well it complements the future sustainable development of the whole of central Kingston and Kingborough more generally. The redevelopment of the site expected to act as a catalyst for increased private and public sector investment within Kingston.

A significant proportion of the site will be developed for use by the community for public open space. Earlier work modelling the

financial feasibility of the proposed development plan for the KHS Site indicated a residual land value figure of around \$0.5 million. However this figure did not include cost to be borne by Council to provide amenity and landscaping works on public open space within the KHS Site.

Proposed Development

The development proposed for the site is a mix of private investment providing commercial and residential development and publically funded community and public uses, including public open space for recreational and community uses, and transport interchanges to enable the former KHS Site to develop sustainably.

The Development Plan proposal indicates that the former KHS site will be developed with the following general layout.

Figure 2 General Layout Proposed Former KHS Site Redevelopment



Source: Kingborough (KHS) Business Plan

Development on the site is proposed to occur in Stages. Design guidelines have been proposed for distinct precincts to inform future subdivision and development. The development plans are indicative and as such, the economic impact assessment undertaken here is broad in nature. The analysis here considers the construction phase and the operational phase (post-construction) of the Development

Plan proposal. The analysis has used proposed height limits to provide indicative floorspace, land use and development totals. The assumptions regarding development made in the analysis are shown in the table below.

Table 1 Development Proposed for former KHS Site

Land Use / Development Type	Developed Floorspace (SQM)	Site Area (SQM)	Residential Units
Integrated Care Centre	3,000	2,000	
Car Park	2,500	4,900	
Retail Development	2,300	2,500	
Residential Apartments	11,400		75
Public Realm		50,900	
Commercial General	10,600	9,800	
Community Hub	2,000	2,000	
Residential Townhouses	8,500	15,300	69
Parkland	0	33,800	
Total	40,300	121,200	144

Source: HillPDA

Note - the analysis undertaken does not replicate the earlier work undertaken regarding the development feasibility of the Site. However, the construction costs used in the earlier work have been used as guide assumptions made in this analysis regarding construction costs and inputs.

Construction cost figures used in the earlier work are shown in the appendices to this report.

The redeveloped site will incorporate significant components of public open space. Public open space is envisaged to be designed to attract users of open space from within the broader municipality and from further afield. Although not finalised, it is envisaged that an iconic development such as an adventure playground that would appeal to visitors from within the region and across the State could be used to promote Kingston as a place to visit. Significant benefits are to be realised through the marketing of the region to tourists and visitors.

There is further potential to make the CBD appealing to visitors from outside the region. An appropriate mix of uses, such as restaurants and eateries embracing the growing 'foodie' culture and the State's reputation for fresh local food produce, could encourage visitors to Kingston and mark it as a must-visit destination just a stone's throw from Hobart. Boutique retail developments may also be appropriate on the site.

2 ECONOMIC IMPACT ANALYSIS

Construction Phase

The construction cost of the proposed development is estimated at approximately \$89 million⁴.

The construction industry is a significant component of the national economy accounting for 7.3% of Gross Domestic Product (GDP) and employing almost one million workers across Australia⁵. The industry has strong linkages with other sectors, so its impacts on the economy go further than the direct contribution of construction output.

Multipliers refer to the level of additional economic activity generated by a source industry.

There are two types of multipliers:

- production induced: which is comprised of:
 - first round effects: which are all outputs and employment required to produce the inputs for construction; and
 - an industrial support effect: which is the induced extra output and employment from all industries to support the production of the first round effect; and
- consumption induced: which relates to the demand for additional goods and services due to increased spending by the wage and salary earners across all industries arising from employment.

The source of the multipliers adopted in this report is the ABS Australian National Accounts: Input-Output Tables 2008-09 (ABS Pub: 5209.0). These tables identify first round effects, industrial support effects and consumption induced multiplier effects at rates of \$0.6463, \$0.6734 and \$0.9891 respectively to every dollar of construction.

Construction related development costs have been estimated at approximately \$89m. Construction areas and approximate costs are shown in the appendices to this document. A 10% construction cost contingency has been incorporated into this figure to reflect the potential for variation in actual outcomes from the proposed development. This figure also included demolition costs required for the former KHS Site. These have been estimated in the Business Plan document at \$1.4million with an associated 10% contingency.

⁴ This figure is inflated from that used in feasibility analysis and has been based on 2015 Rawlinson's costs estimates and updated information provided in the Development Proposal Business Plan.

⁵ Source: IBIS World Construction Industry Report 2011

Additional costs for works associated with the clean-up and preparation of the site are also included. The economic multipliers associated with the proposed development construction are calculated in the following table.

Table 2 - Economic Multipliers: Former KHS Site Redevelopment - Construction Phase

	Direct Effects	Production Induced Effects: First Round Effects	Production Induced Effects: Industrial Support Effects	Consumption Induced Effects	Total
Output multipliers	1	0.6463	0.6734	0.9891	3.3088
Output (\$) (million)	\$89	\$57.3	\$59.7	\$87.7	\$293.5

Source: HillPDA and ABS Australian National Accounts: Input-Output Tables 2008-09 (ABS Pub: 5209.0).

It is estimated that the equivalent of 2.85 construction positions over 12 months are created for every one million dollars of construction work undertaken⁶. Based on the estimated direct construction and demolition cost of \$89 million, approximately 253 job years⁷ would be directly generated. This is equivalent to 253 full-time jobs lasting for one year.

The ABS Australian National Accounts: Input-Output Tables 2008-09 identified employment multipliers for first round, industrial support and consumption induced effects of 0.64, 0.70 and 1.34 respectively for every job year in direct construction. Including the multiplier impacts, the former KHS Site development proposal construction will have the potential to generate approximately 929 job years.

Due to its relatively small size, the construction industry in Tasmania experiences cyclical skills shortages. During downturns, tradespeople may move interstate for work, and few apprentices are trained. During periods of high levels of construction there are shortages of suitably qualified tradespeople, such as bricklayers, plasterers and plumbers. This can cause delays to projects and affects the overall productivity of the construction industry.

⁶ Source: ABS Australian National Accounts: Input-Output Tables 2008-09 (ABS Pub: 5209.0)

⁷ Note: One job year equals one full-time job for one full year

Table 3 - Employment Multipliers: Former KHS Site Redevelopment - Construction Phase

	Direct Effects	Production Induced Effects: First Round Effects	Production Induced Effects: Industrial Support Effects	Consumption Induced Effects	Total
Employment Multipliers	1	0.6428	0.6952	1.3380	3.6759
Employment generated per (\$) (million)	2.85	1.83	1.98	3.81	10.48
Total Job Years Created	253	163	176	338	929

Source: HillPDA and ABS Australian National Accounts: Input-Output Tables 2008-09 (ABS Pub: 5209.0).

Note that the multiplier effects noted are national and not necessarily local. The ABS states that “care is needed in interpreting multiplier effects: their theoretical basis produces estimates which somewhat 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 high impact on the economy.”⁸

The Operational Phase

While the construction phase of the project is expected to provide significant economic benefits over the shorter term, the major benefits of the redevelopment of the former KHS Site would be those generated on an ongoing basis. This includes employment generated through the ongoing operation of healthcare services, community facilities, commercial activity, hospitality, and retail activities in Kingston. These activities may not necessarily take place within the development area but will include those impacts throughout the rest of the economy realised through multiplier effects.

In order to determine the quantum of operational employment likely to be generated on the site, HillPDA has applied employment ratios to indicative floorspace supply by type as identified in the Development Plan proposal and accompanying business case

⁸ Source: ABS Year Book 2002 - The Construction Industry's Linkages with the Economy

document. Employment ratios refer to the number of jobs that can be sustained per square metre of floorspace. These ratios differ across land use types with office and retail uses typically having a greater proportion of employees per square metre of floorspace than recreational and entertainment uses, such as gyms or cinemas.

Applying a range of employment ratios based on HillPDA’s previous experience, on land use and employment surveys undertaken elsewhere, it is estimated that the proposal could generate approximately 638 jobs through the direct operation of activities proposed for the former KHS Site. The jobs estimated to be created within the redevelopment are shown in the following table.

Table 4 -Former KHS on-site Employment Generation

Sector of Employment		Jobs generated in KHS Site Redevelopment
Accommodation & Food Services		42
Residential Services		6
Arts & Recreation Services		0
Parkland & Public Open Space		2
Retail Trade		41
Public Administration & Safety		6
Parking		1
Commercial uses:	Information Media & Telecommunications	57
	Financial & Insurance Services	93
	Rental, Hiring & Real Estate Services	50
	Professional, Scientific & Technical Services	180
	Administrative & Support Services	101
Health Care & Social Assistance		60
Total		638

Source: HillPDA Calculations

This level of employment will generate significant and long-term economic and employment benefits for the Kingston CBD, the broader municipality and the wider Southern Tasmania region. Accessibility to jobs and services for the local Kingston population will be improved.

The analysis undertaken by HillPDA indicates that 638 jobs could directly be supported by the development as proposed within the Development Plan. A proportion of this employment total is likely to be a replacement or substitution of existing employment within the municipality. For example the planned Kingston Integrated Care Centre would replace the existing Community Health Centre in Kingston, although with a significantly higher level of service and employment generation potential.

The employment created as a result of the redevelopment of the former KHS Site will generate significant and long-term economic benefits for Kingston CBD. Increased employment in the Kingston CBD is expected to lead to increased economic activity and consequently increased output. Output per worker estimates generated from State Accounts have been used to calculate the potential output resulting from on-site operational phase employment on the former KHS Site redevelopment. The anticipated increase in employment generated by the former KHS Site redevelopment would lead to an estimated \$78.97 million in annual economic output⁹.

However, these estimates of employment and output benefits do not include flow-on jobs and output to other parts of the CBD and the rest of the Region. The increased ongoing activity within the Kingston CBD will support growth in the overall economy through multiplier effects for other locations in the City and the Region.

Additional Retail Expenditure in the Locality

The proposed development for the former KHS Site will lead to an increase in retail expenditure in the locality from workers and residents on the site and visitors to the site.

Much of this additional retail expenditure would likely go to retail activities in the broader Kingston CBD.

In order to quantify additional retail expenditure from the proposed development, HillPDA has estimated spend from a number of different sources including:

- Construction employees:
- Operational employees;
- New residents on the site; and

⁹ Using Employment by sector data (REMPPLAN) and Gross State Product by sector data (Australian National Accounts, State Accounts, ABS Cat No 5220.0), a figure representing output per worker by sector can be calculated, and then applied to the employment by sector projections for the operational phase of the KHS Site redevelopment.

- Additional visitors to the area.

Worker Spend

It is assumed that around 15-20% of total household expenditure is spent close to the place of work but this is influenced by a number of factors – the main one being the level of retail offer in close proximity.

For the purpose of this analysis it is assumed that expenditure per worker on site in the locality would be \$2,512, which represents approximately 20% of an estimated per capita expenditure of \$12,561 per annum for local residents.¹⁰ Based on these assumptions, the potential for additional retail expenditure is as follows:

- \$0.64m from construction workers over the course of the development;
- \$1.61m annually from operational workers as part of proposed employment uses and facilities on the former KHS Site.

New Resident Spend

When assessing the additional retail expenditure likely to be generated from new residents as part of the proposed residential development on the former KHS Site, the following assumptions were made in the analysis:

- There would be an average of 1.78 persons per townhouse dwelling / apartment¹¹;
- All residents on site would be new residents in the locality;
- Retail expenditure per capita would be in the order of \$12,561 at the current time and real retail growth would average 1.1% to completion of construction¹²; and
- The residential development on the former KHS Site is estimated to comprise of a mix of apartment dwellings and townhouse dwellings. Apartment dwellings will be located in mixed used development identified in the Development Plan proposal. Townhouse dwellings will be developed in the area reserved for residential uses in the Development Plan proposal. The analysis

¹⁰ HillPDA estimates, Household Expenditure Survey data 2014

¹¹ Kingborough LGA Basic Community Profile, ABS Census of Population and Housing (2011)

¹² Construction has been estimated to be complete by 2021. This is an indicative timeframe purely used for the purposes of this economic analysis.

has allowed for 69 townhouse dwellings and 87 apartment dwellings.

Given the above assumptions, it is estimated that the Development Plan proposal for the former KHS Site could support an additional 274 new residents that would spend in the order of \$4.4m per annum at 2021. This represents expenditure per capita of \$13,861 per annum.

Only a portion of this expenditure will be captured by retail facilities on the subject site. A significant proportion of retail expenditure of residents of Kingston is likely to be directed towards retail facilities in Hobart. While the Development Plan proposal will have a significant boost to the economy of the region, it is still envisaged that Hobart CBD will remain the prime destination for commuters from Kingston, and the major retail destination in the wider region for residents of Kingborough LGA. Applying a relatively conservative estimate of 25% of resident retail expenditure being retained within the local economy allows for an additional \$1.1m per annum to be retained by retail businesses within Kingston.

Visitor Expenditure

The Development Plan proposal identifies opportunities within the former KHS Site to attract visitors to Kingston. These opportunities include the potential to construct an iconic adventure playground, the opportunity to convert the old School Gymnasium into an architectural showpiece, and the provision of space for a broad mix of uses including regular markets, events and street-side activities.

Assumptions regarding increased visitation numbers at adventure playgrounds outlined in Appendix C provide a guide which can be used as a basis for an estimate of visitation to a facility in Kingston. It might be expected that the facility could be used by between 100,000 and 150,000 users annually. A significant proportion of these users would be local users, and of the visiting users, it is expected that a proportion of these would be visitors to the region who use the facility in addition to other attractions in Kingston and the broader region and therefore should not be included in the net additional impact of tourism visitation.

Using these assumptions together with data on average visitor expenditure provided in Appendix C, an estimate has been made on the additional visitor spending resulting from the development of iconic tourist attractions such as an adventure playground on the former KHS Site. The estimates and assumptions are shown in the table below. These figures indicate that the development of tourist

facilities on the former KHS Site could lead to an additional \$1.1 million annually in visitor expenditure in the local economy.

Table 5 - Additional Visitor Spending Estimate - KHS Site Adventure Playground

Park	Visitors - total	Visitors - external (50%)	Visitors - incremental (25%)	Visitor spend (\$)
Cobram (VIC)	150,000	75,000	37,500	2,718,750
Tamworth (NSW)	104,000	52,000	26,000	1,885,000
Kingston KHS	127,000	31,750	15,875	1,150,938

Source: HillPDA estimate

Additional Potential Regional Benefits

Benefits Not Quantified

With the proposed Development Plan for the Former KHS Site there are a significant number of benefits that will occur that can be estimated and quantified beforehand in terms of the number of jobs created or the additional expenditure or development that will take place in the area to be redeveloped. In addition to these quantifiable, there are a range of benefits that are typically not quantified. Some of these are described here.

Amenity Benefits

Benefits to Kingston and the surrounding municipality will occur through amenity improvements resulting from the redevelopment of the former KHS Site. Improved access to open space will be provided through the redevelopment of the site. This will deliver improved outcomes for residents, users of the CBD and visitors to the Region. Outcomes would include the opportunity to attend events taking place in the public amphitheatre, and recreate in the open space provided within the CBD setting. Kingston would be able to host events in a CBD setting. Visitors attracted to such events would contribute to increased retail expenditure within Kingston.

Sustainability Benefits

While it is expected that the increased attraction of the Kingston CBD as a place to visit will see increased visitation to the CBD, the development of centrally located residential dwellings, employment generating commercial floorspace opportunities and consolidated healthcare facilities will reduce the requirement to make multi-stop trips within Kingston. This will have an impact on road congestion and limit the vehicle kilometres travelled to and in the CBD.

The additional recreational space and parkland in the redeveloped Former KHS Site Waterfront Precinct will provide environmental benefits, leisure and recreation opportunities for the local and regional population. Additional provision of recreational space may have health benefits as opportunities for exercise within the CBD are improved.

Small Business and Cultural Industries

The development of commercial opportunities and creation of new small business spaces could provide an outlet for the clustering of knowledge intensive and creative industries in the area.

The proposed Development Plan presents an opportunity for provision of diverse range of business spaces including low rent business spaces in an area that, given the proximity to Hobart, the advantages of the natural environment and proximity to Kingston Beach, is ideally placed for the potential clustering of knowledge and creative industries.

Passive Surveillance

The addition of hundreds of new residents in the area would help to increase passive surveillance in the local area, thereby improving safety and creating a higher level of amenity for workers and residents, and for visitors to the locality.

Improved Retailing and Price Competition

The proposal would not only improve the access to recreational and community activities, and health facilities within the Kingston CBD but would also improve retailing and price competition.

In the Development Plan proposal, there is the potential for provision of a number of cafes, restaurants and bars that could add to the vibrancy of the Kingston CBD, providing a relaxing and attractive space in which to socialise and interact. These facilities will act as a

complement to the existing range of retail goods and services within the CBD and will not detract from retail activity and spending given their limited scale and scope. They are well positioned to take advantage of pedestrian foot traffic given their ground floor positions and will enhance the eating and drinking options for workers, visitors and residents in the locality.

Impetus for Development

The redevelopment of the former KHS Site as envisaged by the proposed Development Plan is also likely to encourage further investment and development in and around the Kingston CBD. With potentially iconic redevelopment opportunities including the adventure playground, open space and community hub and facilities, with higher density residential living options broadening the diversity of housing available within the municipality, the development has the potential to instigate additional infill development in the CBD and surrounds by providing an example of good design and use of space.

Reduced Construction and Transport Impacts

Whilst impacts from the proposal development are overwhelmingly positive, there are likely to be some short-term negative impacts incurred during the construction phase in any construction project.

These impacts typically include a temporary reduction worker amenity around the site given the construction phase would include the erection of hoardings and fencing and the use of heavy machinery and heavy vehicle transport.

These impacts would be confined to the duration of the construction phase only. However, given the proposed development is expected to take place over a period of 10-20 years, the impact of this disruption is likely to be considerable.

Key Findings

This analysis has demonstrated that there are likely to be significant economic benefits resulting from the proposed Development Plan. Kingborough and the broader region economy will benefit during the construction and operational phase of the project. Some of these benefits have been quantified and are summarised in the table overleaf. Further benefits described have not been quantified. These include benefits to amenity, sustainability benefits, health benefits, and traffic reduction benefits.

Table 6 - Former KHS Site Redevelopment Outcomes

Development	Space Use	Floorspace Area SQM	Jobs	Output (\$M)	
	Commercial Uses	10,575	481	69.13	
	Public Administration & Safety	52,881	6	0.55	
	Health Care & Social Assistance	2,957	60	5.32	
	Parking	4,865 ¹³	1	N/A	
	Parkland	33,780 ¹⁴	2	N/A	
	Residential Development	19,795	6	N/A	
	Retail Trade	2,273	82	3.98 ¹⁴	
Total			638	78.97	
Jobs	Direct	Indirect		Consumption Induced Effects	Total
		Production Induced Effects: First Round			
		First Round	Industrial Support		
Construction (job years)	253	163	176	338	929
Operational	638				
Output (\$ million)	Direct	Indirect Effects		Consumption Induced	Total
		Production Induced			
		First Round	Industrial Support		
Construction	\$89	\$57.3	\$59.7	\$87.7	\$293.5
Operational	\$78.97M per annum				
Additional Spend				(\$ Million)	
Construction workers (total)				\$0.64	
Operational phase worker (annual)				\$1.6	
On-site residents (annual)				\$0.95	
Increased Visitors to Kingsborough (annual)				\$1.15	

Source: HillPDA

¹³ Site Area

¹⁴ Includes Retail Trade, and Accommodation & Food Services

3 COST BENEFIT ANALYSIS

This section of the report provides a Cost Benefit Analysis (CBA) of the redevelopment of the former KHS Site. The CBA is provided to inform the National Stronger Regions Fund (NSRF) grant application.

This document identifies the direct costs and benefits of the whole project using a discounted cash flow method. Benefits assessed in the CBA model include industry value add, the value of additional visitation and retail spending to the region as a result of the development of iconic playground facilities, the terminal value of development, the increased expenditure outside of the development by additional residents and workers and, and the indirect impact on the economy measured by input output multipliers.

Further detail on the methodology and modelling process is provided in the appendices to the report.

Direct benefits to the region, using a discount rate of 7% are estimated at:

- Net Present Value (NPV) of \$274 million;
- IRR of 25.9%; and
- A Benefit Cost Ratio (BCR) of 4.10

Once indirect benefits are included the total benefits, including multiplier effects, the benefits are estimated at:

- NPV of \$1,029 million;
- IRR of 52%; and
- A BCR of 12.6

According to these estimates, the redevelopment of the former KHS Site is projected to deliver significant economic benefits to Kingston and the surrounding region. The redevelopment of the former KHS Site should be supported by grant funding.

These estimates account for escalating occupation rates of commercial, residential and retail space within the development. However, while the occupation of the commercial space is projected to occur over a period of time following completion of the development component, there is no guarantee that the development will be fully occupied at the employment density ratios assumed in the analysis.

It also assumes that all employment located within the developed site is net additional employment in the region. That is to say, the

analysis does not consider the likelihood that some of the jobs 'created' as a result of the redevelopment aren't merely jobs that have relocated from elsewhere within Kingborough or the wider region.

Summary

The table overleaf provides the direct benefits and costs in the equivalent discounted cash flow method. The performance indicators – NPV, BCR and IRR are summarized below it. (Note in the table the NPV at 7% discount rate is +\$274m. The IRR of 25.3% is considered a very strong return on investment. The benefit cost ratio is 4.10).

Table 7 - CBA Model Results

COST BENEFIT MODEL (2015 \$,000s)

	NPV	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
COSTS																					
Capital Cost	86,978	6,899	19,632	21,315	13,923	14,762	5,632	6,202	4,259	5,166	6,347	6,347	0	0	0	0	0	0	0	0	0
Opportunity Cost	1,500	1,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Multiplier Impacts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL COSTS	88,478	8,399	19,632	21,315	13,923	14,762	5,632	6,202	4,259	5,166	6,347	6,347	0	0	0	0	0	0	0	0	0
BENEFITS																					
Industry Value Add	266,417	0	0	0	3,881	7,761	16,218	24,676	31,301	35,987	38,459	38,642	42,983	44,461	45,200	45,200	45,200	45,200	45,200	45,200	45,200
Add Tourism Benefits	5,023	0	0	0	0	0	0	0	0	0	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151	1,151
Multiplier Impacts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Terminal Value	91,547	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	331,082
TOTAL BENEFITS	362,987	0	0	0	3,881	7,761	16,218	24,676	31,301	35,987	39,610	39,793	44,134	45,612	46,351	46,351	46,351	46,351	46,351	46,351	377,433
NET BENEFIT	274,509	-8,399	-19,632	-21,315	-10,042	-7,001	10,586	18,473	27,042	30,821	33,262	33,446	44,134	45,612	46,351	46,351	46,351	46,351	46,351	46,351	377,433

Discount Rate	NPV (2014 \$,000s)	BCR
4.0%	438,509	5.51
7.0%	274,509	4.10
10.0%	172,107	3.12
25.9%		1.0

There is considerable further improvement to the performance indicators when indirect benefits are included in the above DCF model. The table below provides a summary of the NPVs when various indirect impacts are added both to the benefits and to the opportunity cost sides of the model.

Table 8 - Direct and Indirect Impacts

	Direct	Direct + First Round Production Induced	Direct + Production Induced	Direct & Total Indirect
NPV at 4%	438,509	702,725	945,693	1,551,881
NPV at 7%	274,509	453,543	618,239	1,029,515
NPV at 10%	172,107	297,035	412,004	699,380
IRR	25.9%	33.6%	39.5%	51.6%

Source: HillPDA

The table shows that if all indirect impacts are added, including the consumption induced impacts, then the NPV increases to \$1,030m and the IRR to 52%.

4 SUMMARY

The redevelopment of the former KHS Site in Kingston CBD will lead to a range of benefits and impacts on the local, regional and national economy.

The benefits accruing to the economy are significant. In addition to the \$89M direct construction expenditure there are further construction multiplier related benefits in the order of \$204M. On-site construction is expected to generate 253 job years directly, with first round impacts, industrial support and consumption related impacts providing an estimated additional 677 job years in the broader economy.

Development on the site will lead to employment generating floorspace and land uses that could accommodate an estimated 638 jobs. Jobs supported by development on site would include retail, commercial office employment, healthcare jobs and employment supporting the residential component of the proposed development. It is estimated that the sum of employment on the site could generate \$78.97m in annual output.

Development on site will include a significant residential component. In addition to the value of residential construction, this residential development will bring benefits such as improved housing affordability and diversity within Kingsborough, increased passive surveillance and levels of activity within the CBD, and broader sustainability benefits. It is estimated that the Development Plan proposal for the former KHS Site could accommodate 69 townhouse dwellings and 87 apartment dwellings, supporting a residential population of 274.

Employment on-site, both in the construction phase of development and the operational phase of the development, and new residents on the site will support increased retail activity within Kingston. Increased visitor spending will also boost the local retail economy. Increased expenditure will accrue from the following:

- Construction workers - \$0.63M
- Operational workers - \$1.6M annually
- Residents - \$0.95M annually
- Visitors - \$1.1M annually

Construction of the new Integrated Care Centre and its indirect benefits are in addition to the above. The increased ongoing activity within the site will support growth in the overall economy through multiplier effects on other sites and precincts. Whilst these multiplier effects will be spread nationally they are likely to be mainly focused in Kingston and Tasmania.

Other Ongoing Impacts and Benefits

In addition to the economic benefits already identified, there would be a range of additional short and long-term implications likely to result from the Development Plan proposal for the former KHS Site, including:

- An improved range of retail and enhanced price competition;
- Acting as an impetus for investment and development in the local area;
- Improvements to the public realm and passive surveillance in the area;
- Facilitation of local economic development, especially knowledge and creative industries; and
- Sustainability benefits through the development of transport infrastructure hub / park and ride station.

APPENDIX A: CONSTRUCTION COST FIGURES: DEVELOPMENT FEASIBILITY ANALYSIS 2012

The figures below show the construction cost figures used for each stage of the proposed development on the former KHS Site in the earlier analysis of development feasibility.

Stage 1

COSTS (\$)	
Land Purchase Cost	1,288,529
Land Transaction Costs	85,382
Construction (inc. Construct. Contingency)	24,688,843
Professional Fees	2,800,272
Project Contingency	669,220
Interest Expense	383,851
TOTAL COSTS	29,916,099

Stage 2

COSTS (\$)	
Land Purchase Cost	1
Land Transaction Costs	20
Construction (inc. Construct. Contingency)	21,036,624
Professional Fees	2,584,901
Project Contingency	575,784
Interest Expense	423,318
TOTAL COSTS	24,620,648

Stage 3

COSTS (\$)	
Land Purchase Cost	2,659,746
Land Transaction Costs	181,367
Construction (inc. Construct. Contingency)	2,718,154
Professional Fees	405,034
Project Contingency	74,398
Interest Expense	210,366
TOTAL COSTS	6,249,064

Stage 4

COSTS (\$)	
Land Purchase Cost	615,672
Land Transaction Costs	38,555
Construction (inc. Construct. Contingency)	1,128,158
Professional Fees	165,164
Project Contingency	31,127
Interest Expense	96,452
TOTAL COSTS	2,075,128

Stage 5

COSTS (\$)	
Land Purchase Cost	1
Land Transaction Costs	20
Construction (inc. Construct. Contingency)	27,594,420
Professional Fees	38,18,120
Project Contingency	765,693
Interest Expense	417,595
TOTAL COSTS	32,595,849

APPENDIX B: ASSUMED CONSTRUCTION AREAS AND COSTS

Precinct	Use	ANZIC Category / Description	Floorspace / Area	Rawlinsons Reference	Construction Cost	Jobs - Construction
A	Integrated Care Centre	Health Care & Social Assistance	2,957	13.5.4	7,700,000	22
A	Car Park	Parking	2,484	Project Cash Flow - Business Case	300,000	1
A	Mixed Use*	Retail Trade	1,874	9.1.2.7	6,433,703	18
A	Public Realm	Public Administration & Safety	2,077	Project Cash Flow - Business Case	1,000,000	3
A	Mixed Use*	Commercial General	2,827	9.1.2.5	14,493,815	41
B	Community	Public Administration & Safety	2,017	Project Cash Flow - Business Case	3,000,000	9
B	Mixed Use*	Retail Trade	399	9.1.2.7	3,166,294	9
B	Mixed Use*	Commercial General	1,323	9.1.2.5	4,355,439	12
B	Residential	Residential	738	13.2.1.2	1,490,760	4
B	Public Realm	Public Administration & Safety	1,103	Detailed Prices - Civil Engineering Roadworks (MELB)	408,180	1
B	Public Realm	Public Administration & Safety	2,210	Project Cash Flow - Business Case	1,300,000	4
B	Commercial Office	Commercial General	4,551	9.1.2.5	9,863,512	28
B	Car Park	Parking	2,381	10.03.01	213,140	1
C	Residential	Residential	615	13.2.1.2	1,242,300	4
C	Residential	Residential	369	13.2.1.2	745,380	2
C	Residential	Residential	861	13.2.1.2	1,739,220	5
C	Residential	Residential	738	13.2.1.2	1,490,760	4
C	Residential	Residential	984	13.2.1.2	1,987,680	6
C	Residential	Residential	492	13.2.1.2	993,840	3
C	Residential	Residential	615	13.3.1.2 (adjusted)	1,242,300	4
D	Residential	Residential	492	13.2.1.2	993,840	3
D	Residential	Residential	369	13.2.1.2	745,380	2
D	Residential	Residential	492	13.2.1.2	993,840	3
D	Residential	Residential	738	13.2.1.2	1,490,760	4
D	Residential	Residential	615	13.2.1.2	1,242,300	4
D	Residential	Residential	369	13.2.1.2	745,380	2
D	Public Realm	Public Administration & Safety	916	Detailed Prices - Civil Engineering Roadworks (MELB)	339,021	1
D	Public Realm	Public Administration & Safety	41,897	Project Cash Flow - Business Case - open space	600,000	2
E	Public Realm	Parkland	18,440	Project Cash Flow - Business Case	800,000	2
E	Public Realm	Parkland	1,038	11.13.1 adjusted	35,111	0
E	Public Realm	Parkland	6,358	Item cost assumed with Park & Ride area	0	0
E	Public Realm	Parkland	2,251	Project Cash Flow - Business Case	800,000	2
E	Public Realm	Parkland	1,954	11.13.1 adjusted	66,106	0
N/A	Mixed Use*	Commercial General	1,874	9.1.2.5	6,105,840	17
N/A	Public Realm	Public Administration & Safety	2,660	Project Cash Flow - Business Case	1,800,000	5
N/A	Public Realm	Parkland	3,739	Detailed Prices - Civil Engineering Roadworks (MELB)	1,383,593	4
Total	Area for infrastructure / services	\$1.1M/ha	29,731	HillDPA rules of thumb @ \$1.1M/ha	3,270,398	9
Total			137,748	#	83,335,592	238

APPENDIX C: VISITOR NUMBERS

Limited availability of data on tourism visitation and tourism expenditure in Kingborough make it difficult to assess the economic impact of additional visitation to the facilities provided as part of the former KHS Site redevelopment.

In this analysis it is assumed that the number of tourists / visitors to Kingston would increase as a result of the design of the proposed adventure / playground facility on the former KHS Site. It is also assumed that the majority of visitors to the facility would be domestic day trippers and the average expenditure benefit received by Kingston and surrounds would reflect this.

As a guide to the increase in visitor spending, the available data on domestic day tripper expenditure for available LGAs in Tasmania is shown in the table below.

Table 9 - Domestic Daily Visitor Expenditure

LGA	Average daily expenditure (\$ per visitor (2013))
Burnie	98.2
Circular Head	60.4
Break O'Day	87.8
Central Highlands	60.2
Devonport	93.8
Glamorgan / Spring Bay	70.8
Kentish	60.5
Launceston	135.7
Meander Valley	70.3
Northern Midlands	61.9
Tasman	69.9
West Coast	63.7
Average Expenditure	77.8

Source: Tourism Research Australia (TRA.gov.au) 2013

Average daily expenditure per visitor averages just under \$80 per visitor. If a major urban area such as Launceston is excluded from the

analysis, the average daily expenditure figure falls to just over \$70 per visitor.

While no explicit visitor numbers have been prepared for the Development Plan proposal, HillPDA have sourced visitor numbers for other planned and built attractions elsewhere in Australia.

1. Tamworth Regional Council prepared a plan for an adventure playground to serve the area and increase visitor numbers.

"Based on 2006 Census figures for the Tamworth Regional Council area, the target market for the playground includes some 9,203 children under the age of 14 years, and a further 5,497 parents including single parent families and de facto parents. The playground's role, as part of the overall Marsupial Park precinct, will attract visitors from throughout the region, adding to the annual visitor nights spent in Tamworth and thus adding to the overall economy."

"Based on the visitor numbers for other Adventure Playgrounds in NSW, the Tamworth Adventure Playground will expect up to 500 families visiting per week..."

2. The Barossa Tourism Gap Audit estimated that the provision of an adventure playground with an assumed capital cost of \$250,000 would increase day trip visitation to the region by 5%.¹⁵
- 3.
4. Cobram Ardmona Kidstown Adventure Playground located between Mooroopna and Shepparton is estimated to attract around 150,000 visitors per annum.

International examples have indicated that the provision of adventure playground facilities have led to an increase in visitor numbers: a historical 'working life' museum in Norfolk, UK saw monthly visitor numbers increase by 2,000 - or around 10% - as a result of the development of an adventure playground in the facility.

These estimates - other than that made for the Barossa region - do not necessarily provide an estimate of additional visitors to the region. Rather they provide an estimate of how many visitors to the region will visit the facilities.

¹⁵ Barossa Product Gap Audit, Department of Resources, Energy and Tourism & AEC Group, Final Report v1.2

APPENDIX D: COST BENEFIT ANALYSIS (CBA) MODELLING AND ASSUMPTIONS

The CBA is a decision making tool based on the evaluation of the economic performance of different Project Scenarios. For each option it involves quantifying the incremental (marginal) costs and benefits to all sectors of the economy through the life of a project and discounting them to a net present value.

CBA is often used as a method for organising information to aid decisions about the allocation of resources. It is recognised that CBA is useful where developments can impose costs and benefits on third parties having wider economic and social effects. As a result, a CBA takes a broader perspective than a site specific financial feasibility study as it assesses the costs and benefits made to the community as a whole, rather than an individual.

A CBA differs from a Net Community Benefit Test or Economic Impact Assessment in that it quantifies both the external economic, social and environmental costs and benefits (or welfare impacts) of a planning proposal. The CBA converts the benefits and costs of a project that may occur in the future into present values using the 'discounting' technique. This enables a comparison of the value of costs and benefits at any one point in time.

The CBA uses Net Present Value (NPV) as a measure of economic performance. NPV relates to the difference between the present value (PV) of total incremental benefits and the present value of the total incremental costs. Where there is a positive NPV, it means that the incremental benefits of the scenario in question exceed the incremental costs over the evaluation period (or project life).

Techniques for Quantifying Environmental Impacts

Decisions concerning the environment always involve benefits and costs, some with monetary value and some without. Ideally decisions are made where the benefits outweigh the costs. In many cases where environmental resources are affected by the decision, monetary values may need to be weighed against non-monetary values. Notwithstanding this, qualitative comparisons in which the decision maker explicitly compares the environmental effects with the relevant monetary values allows for a more substantial understanding of the issues.

A key challenge of quantifying environmental impacts however is that “many environmental resources are not traded in markets and so do not have an obvious price.” Notwithstanding this it is recognised that “though environmental effects do not have a price, that does not mean they do not have value.”¹⁶

Accordingly there is an inherent risk in any assessment of a project that “the effects of human activity on the natural environment will be ignored. If they are not fully taken into consideration there is a danger that the decisions made will not be in the best interest of society”¹⁷.

The Commonwealth Government in turn identifies three potential implications as a result of failing to account for environmental impacts to be:

- “The net environmental effect could be negative-degradation of natural resources through over-exploitation, excessive pollution or irreversible losses of natural capital may occur;
- The net environmental effect could be positive - there could be under-investment in or under-utilisation of the environments productive capacity;
- The net environmental effect could be neutral – the value of degradation is the same as the value of the use. In this case, decision makers need consider only non-environmental factors, such as budget or equity concerns, in making their decisions.”

The Commonwealth Government has subsequently identified a series of methods that can be used to quantify environmental impacts. A summary of these methods is provided below.

- The Change in Productivity Technique: this approach considers an increase in output as a benefit and a decrease as a cost. Monetary values must therefore be assigned to the relevant environmental impacts, for example the economic effects of reducing greenhouse gas emissions. This technique is widely used in land conservation, forest management, tourism and grazing.
- The Change in Income Technique: this approach measures the impact of an environmental change (i.e. pollution control) to the ability to work i.e. through ill / improved health, premature death or prolonged life. When the relationship between the

¹⁶ Techniques to Value Environmental Resources: An Introductory Handbook, Commonwealth Department of the Environment, Sport and Territories & the Commonwealth Department of Finances and the Resource Assessment Commission 1995

¹⁷ Ibid

environmental effect, health and income can be established, the effect can be valued as a change in income.

- The Replacement Cost Technique: this approach identifies the expenditure necessary to replace an environmental resource or to make an area good. As replacement costs are relatively easy to estimate, this technique is widely used.
- The Preventative - Expenditure Technique: this technique estimates what households would be willing to pay to prevent damage to an environmental area / feature or to enjoy it (i.e. a rainforest, floods, fire and reductions in water quality). This approach is also widely used as it can be relatively easily quantified through surveys / interviews.
- The Relocation-Cost Technique: this technique is similar to the preventative approach in that it estimates the cost of maintaining a level of enjoyment or access to a location. The activities may however relate to the relocation of individuals or entire companies or towns from an existing location. The cost of relocation becomes an estimate of the benefit of avoiding the damage. This approach allows for a direct way to incorporate damage costs into the valuation of the proposal. If the development of an environmental resource would require another use to relocate, the relocation costs may be considered a legitimate charge against the cost.

The techniques outlined above determine the value of an environmental resource based on direct costs or revenues associated with the effects themselves. The following outlines additional methods that derive values from the costs or revenues of surrogate effects that may be closely related to the environmental resource in question.

- Travel Cost: this approach assumes that a rational individual will weigh up the costs of a recreational visit with the benefits. It therefore bases its analysis on actual travel costs (including food costs, accommodation costs and foregone income) that can be quantified from a survey. This approach can help to quantify the value of recreation change associated with an environmental change.
- The Property Value Technique: this approach appreciates that the price paid for a property directly reflects the benefits of the characteristics of the property including clean air, peace, quiet and beauty. The amount of the price attributed to the

environment is then assessed through statistical analysis. This approach has benefits as it can be quantified in monetary value, yet it is restricted to circumstances where the environmental effect of interest can be shown to effect price.

- The Wage-Differential Technique: this approach recognises that wages in a given locality or across localities can vary on account of different environmental qualities. For example higher wages may be paid to attract workers to areas (such as cities) with more pollution or greater health risks. If wages can be related to such environments for similar jobs, it can be possible to value differences in wages.
- The Proxy-good technique: this final technique recognises that a good, service or resource with a market price may be used as a substitute for an environmental effect or interest. This approach therefore uses the market price of the good as an approximation of the value of the effect. One example may be a swimming pool as a proxy for a river or lake for community members.

Limitations to Using CBA

The Department of Finance and Administration 2006 Handbook of Cost Benefit Analysis identifies that the effective use of CBA requires an appreciation of its limitations as well as its merits. Accordingly, this Section identifies some of the project specific and more commonly identified limitations associated with CBA analysis in general. These limitations have been recognised in the assessment process discussed in Sections 3 and 4 and the associated risks minimised where possible.

Potential limitations associated with CBA include:

- The need for reliable evidence to quantify costs. This can be a challenge in practice where technical studies have not been undertaken or costs are difficult to value (such as environmental impacts);
- A CBA can compare scenarios with one or more scenarios identifying what may / may not have happened in the absence of the project. This can create a higher level of uncertainty or margin for error;
- Not all costs and benefits can be quantified in dollar terms and therefore some costs or benefits may be overlooked;
- A CBA may have an inherent bias against members of the community with a lower ability to pay; and

- A CBA may have a degree of obscurity when the focus is on the project's 'bottom line'.

The CBA Model

Economic appraisals assess all of the costs and benefits of scenarios from the point of view of the "whole of community" or "whole of economy". In this case we have defined the 'standing' or 'scope' of the CBA to be the Tasmania's southern region.

The methodology selected for the economic appraisal is CBA. Similar to financial appraisals, CBA utilises the Discounted Cash Flow (DCF) method for determining the NPV of the scenario. However an economic appraisal differs from a financial appraisal in that it measures the costs and benefits to the whole of the community – and not just the financial costs and revenues to the owner, financial sponsor, developer or proponent.

In order to compare the likely costs and benefits of the Project, HillPDA prepared a Microsoft- Excel based spread sheet model. The model incorporates the quantified costs and benefits of the Project for each year of the Project's life. The resulting costs have been subtracted from the total benefits to identify the net impacts. These impacts have then been discounted to the base year (the year of construction) and summarised as a NPV for each applicable scenario (as defined below).

The model was prepared generally in accordance with the Commonwealth Handbook of Cost Benefit Analysis.

For the purposes of this assessment two Scenarios have been tested:

- Scenario 1: The Do Nothing Scenario i.e. no redevelopment; and
- Scenario 2: Redevelopment for the mix of land uses as proposed.

Scenario 1 "Do Nothing" has a NPV of 0 as it is the status quo. A positive NPV for Scenario 2 therefore implies a net economic gain over Scenario 1 i.e. the Base Case. A negative NPV would imply economic loss compared to the Base Case.

The scenario with the highest NPV provides the highest net benefit to the economy (measured in dollar terms). The HillPDA CBA model also allows for any required sensitivity testing by varying discount rates and other risky variables.

General Modelling Parameters and Assumptions

The CBA model is based on the following parameters:

- The model is in annual rests;
- The standing or economy measured was the Southern region of Tasmania;
- Project life was assumed at 20 years, however a terminal value was included to reflect continuing future net benefits after the project life;
- GST, stamp duties and the majority of other taxes were excluded because they are transfer payments with zero net benefit to the economy;

Quantified Costs

Capital Costs

Capital costs include demolition, construction, design and application fees and project management costs. Demolition is projected to take place over one year during 2015. Construction occurs in 5 stages over 6 years from 2016 to 2024. Pre-construction design and application fees are assumed at 7.5% of construction and incurred the year before construction for each stage of works. Construction for each stage spans 2 years. A further 5% professional fee is incurred during construction to meet project management and supervision costs.

Costs provided by Council are also included in the analysis. These include ongoing site security, site subdivision costs and site maintenance costs for the period of redevelopment.

Opportunity Cost

Opportunity cost refers to the opportunity forgone from redevelopment. It is the benefit of the “do nothing” option. This may be the current value ascribed to the land by the community. Given the site is not accessible by the community as a recreational resource, we have adopted the approach where the opportunity costs is measured as an upfront cost of the land. In this model we have shown the land purchase cost to Council in addition to the cost of finance, or interest paid on loans to Council.

Quantified Benefits

Industry Value Add

Industry Value Add (IVA) is defined by IBIS World as the “market value of goods and services produced by an industry minus the cost

of goods and services used in the production process, which leaves the gross product of the industry". Industry Value Add is the industry's contribution to gross domestic product (GDP). It is calculated as "the value of output minus the value of intermediate inputs. That value added is the difference between the costs of production (excluding the Compensation of Employees, Gross Operating Surplus, Taxes and Imports) and the value of sales turnover. In a national accounts context, Gross Domestic Product (GDP) consists of the sum of value-added by all industries. Value-added also pertains to differences between the value of production at various stages of the supply chain."¹⁸ In simple terms IVA is the contribution the industry or company makes to gross domestic product.

The sources of data for IVA are various IBIS World reports including the following:

- H5731 Cafes and Restaurants in Australia Industry Report;
- N8432 Technical and Further Education in Australia Industry Report;
- P9239 Recreational Parks and Gardens in Australia Industry Report;
- L7800 Business Services in Australia Industry Report;
- AUM8113 Local Government;
- G5000 Consumer Goods Retail in Australia Industry Report;
- G5111 Supermarkets and Other Grocery Stores in Australia Industry Report;
- O8600 Health Services in Australia Industry Report;
- Various other reports

Terminal Value

Because the development that is proposed for the site is assumed to have a life beyond the 20 year period of the CBA, a terminal value was applied to reflect the value of the assets to the economy. The terminal value was calculated from capitalising the previous year's net benefit at 14%.

Input Output Multiplier Impacts

The above costs and benefits all refer to direct impacts on the economy. Input output multiplier impacts refer to indirect impacts –

¹⁸ Western Research Institute

both production-induced and consumption-induced. Production-induced is comprised of:

- first round effects: which are all outputs and employment required to produce the inputs for construction; and
- an industrial support effect: which is the induced extra output and employment from all industries to support the production of the first round effect; and

Consumption induced impacts relates to the demand for additional goods and services due to increased spending by the wage and salary earners across all industries arising from employment.

While their ease of use makes I–O multipliers a popular tool for economic impact analysis, they are based on limiting assumptions that results in multipliers being a biased estimator of the benefits or costs of a project. The ABS website identifies the following inherent shortcomings and limitations of multipliers for economic appraisals:

- Lack of supply–side constraints: A significant limitation of economic impact analysis using multipliers is the implicit assumption that the economy has no supply side constraints. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or near capacity.
- Fixed prices: Constraints on the availability of inputs, such as skilled labour, require prices to act as a rationing device. In assessments using multipliers, where factors of production are assumed to be limitless, this rationing response is assumed not to occur. Prices are assumed to be unaffected by policy and any crowding out effects are not captured.
- Fixed ratios for intermediate inputs and production: Economic impact analysis using multipliers implicitly assumes that there is a fixed input structure in each industry and fixed ratios for production. As such, impact analysis using multipliers can be seen to describe average effects, not marginal effects. For example, increased demand for a product is assumed to imply an equal increase in production for that product. In reality, however, it may be more efficient to increase imports or divert some exports to local consumption rather than increasing local production by the full amount;

- No allowance for purchasers' marginal responses to change: Economic impact analysis using multipliers assumes that households consume goods and services in exact proportions to their initial budget shares. For example, the household budget share of some goods might increase as household income increases. This equally applies to industrial consumption of intermediate inputs and factors of production.
- Absence of budget constraints: Assessments of economic impacts using multipliers that consider consumption induced effects (type two multipliers) implicitly assume that household and government consumption is not subject to budget constraints.
- Not applicable for small regions: Multipliers that have been calculated from the national I–O table are not appropriate for use in economic impact analysis of projects in small regions. For small regions multipliers tend to be smaller than national multipliers since their inter–industry linkages are normally relatively shallow. Inter–industry linkages tend to be shallow in small regions since they usually don't have the capacity to produce the wide range of goods used for inputs and consumption, instead importing a large proportion of these goods from other regions.

In a nutshell the true benefit of indirect impacts depends on the level to which resources would be employed elsewhere in the economy if the project did not proceed.

For the purpose of the CBA we have excluded the indirect impacts but have documented the range of performance indicators with and without their inclusion. This is discussed below.

Discount Rate

The Commonwealth Guidelines does not prescribe a fixed discount rate arguing that this would vary year by year and by project to project. There are two main methods for determining the discount rate being the opportunity cost of capital and the social time preference rate. The former reflects the opportunity to invest resources into alternative projects. One method for calculating this is to use a risk free rate of return (say 10 year Government bond rate) and add a risk premium. The social time preference rate reflects the desire to consume benefits now rather than later. The NSW Treasury Guidelines prescribes a fixed real (inflation free) discount rate of 7% with sensitivity testing at 4% and 10%. 7% is considered a good representation of the social time preference rate and is around 4% to

5% higher than a risk free investment rate. For the purpose of this CBA we have adopted the NSW rates.

APPENDIX E: DEFINITION OF TERMS

DEFINITION OF TERMS

Accessibility - refers to the extent to which people have access to employment, goods and services, either through proximity or transport links to places.

Base Case - the scenario against which the marginal costs and benefits of all other scenarios are measured. This is sometimes referred to as the “do nothing” option, although “do nothing” is not always an option in every case.

Benefit Cost Ratio (BCR) - ratio of the present value of total incremental benefits over the present value of total incremental costs.

CBD - Central Business District

Cost Benefit Analysis - a technique for evaluating the economic performance of different options. For each scenario it involves quantifying the incremental (marginal) costs and benefits to all sectors of the economy through the life of the project and discounting them to a net present value.

Discounted Cash Flow (DCF) - a technique for appraising a future cash flow based on the idea of discounting it to present value. It is the reciprocal of “compounding” or “adding interest to” present capital in order to calculate future value.

Gross Domestic Product (GDP) - the monetary value of all the finished goods and services produced within a country in a specific time period, including private and public consumption, government outlays, investment and exports less imports that occur within a defined territory.

Gross Floor Area – Gross Floor Area (GFA) is Gross Lettable Area plus common mall spaces (including amenities), centre management area and plant rooms.

Hectares (HA) - 10,000 square metres

Intangibles – refers to costs and benefits that are difficult to quantify.

Internal Rate of Return (IRR) – the discount rate at which the present value of benefits equals the present value of costs.

Journey to Work (JTW) - data collected from the ABS Census on individual usual residence, address of workplace and method of journey to work.

Net Present Value (NPV) – the difference between the present value of total incremental benefits and the present value of the total incremental costs.

Opportunity Cost: resources are priced at their value against their best alternative use, which may be above or below the actual cost of production. In this case the opportunity cost refers to the value of the land put to its highest and best use in the base case.

Marginal (or incremental) costs and benefits – refer to changes in the levels of costs and benefits between options or between an option and the base case (sometimes referred to as the ‘do nothing’) option.

Revenue – the total sales revenue of a business, including sales (exclusive of excise and sales tax) of goods and services; plus transfers to other firms of the same business; plus subsidies on production; plus all other operating income from outside the firm (such as commission income, repair and service income, and rent, leasing and hiring income); plus capital work done by rental or lease. Receipts from interest royalties, dividends and the sale of fixed tangible assets are excluded.

Risk - is the extent of expected variability in the project's returns.

Sunk Cost – a cost that occurred in the past and therefore cannot be included in assessing the net present value of future costs and benefits.

Terminal (or Residual) Value – is the value of the project at the end of its life or at the end of the assessment period.

Transfer Payment – refers to a monetary payment made from one sector of the economy to another with zero net gain to the total economy. An example may be a Section 94 payment to Council from a developer.

Value Added – the market value of goods and services produced by a business minus the cost of goods and services used in the production process, which leaves the gross product of the business (also known as contribution to gross domestic product or GDP).



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