ITEM NUMBER: 17.1

CONFIDENTIAL

GLENELG JETTY REGENERATION PROJECT - UPDATE

Pursuant to Section 83 (5) of the Local Government Act 1999 the Report attached to this agenda and the accompanying documentation is delivered to the Council Members upon the basis that the Council consider the Report and the documents in confidence under Part 3 of the Act, specifically on the basis that Council will receive, discuss or consider:

b. Information the disclosure of which –

(i) could reasonably be expected to confer a commercial advantage on a person with whom the council is conducting, or proposing to conduct, business, or to prejudice the commercial position of the council; and

(ii) would, on balance, be contrary to the public interest.

Item No: **17.1**

Subject: **GLENELG JETTY REGENERATION PROJECT - UPDATE**

Date: 14 June 2016

Written By: General Manager Community Services

General Manager: Community Services

SUMMARY

A Benefit Cost Analysis on the potential benefits of the Glenelg Jetty Regeneration Project has been received by Council. This Analysis demonstrates that the project would provide positive economic impact to the State through increasing tourism, local visitor attraction and job creation.

In order to further the project, investment commitments need to be made by both state and federal governments as well as private investors.

RECOMMENDATION

1. **Council receives the Benefit Cost Analysis and presents this report together with previous research to the South Australian Premier in order for the project to be progressed to the next stage at State level.**

2. **Council recognises its continuing role in the Glenelg Jetty Regeneration project as one of 'supportive partner', with the Mayor, CEO and Councillors continuing to promote the Glenelg Jetty Regeneration Project to relevant stakeholders; and**

3. **That the 'fly-through' video is released from confidence in order to allow its public distribution;**

COMMUNITY PLAN

A Place to do Business
A Place that Welcomes Visitors
A Place that Provides Value for Money
A Place that is Well Planned

BACKGROUND

Early in 2014 the Jetty Road Mainstreet Management Committee developed conceptual ideas to facilitate economic stimulus locally. In February 2014, the Jetty Road Mainstreet Management Committee engaged Mott MacDonald, a global management, engineering and development consultancy to further develop concept plans and prepare an outline business case for the proposed Glenelg Jetty Regeneration Project.

This Jetty Regeneration Project centres on the development of an iconic tourist destination in the form of a redeveloped and repurposed jetty with the specific intention of increasing the visitation of interstate and international visitors to the State of South Australia, stimulating the local economy and providing improved amenities to the local community.

Support for the concept has been received from the Western Alliance of Councils, Kangaroo Island Council, with Adelaide City Council an interest. The leader of the South Australian Opposition, Mr Stephen Marshall has pledged $20m to support the proposal.

Most recently the Jetty Road Mainstreet Management Committee undertook to fund an Economic Impact and Cost Benefit Analysis in order to quantify the benefits to the region of the proposed project. This Cost Benefit Analysis, prepared by the South Australian Centre for Economic Studies, University of Adelaide has now been completed.

The project is at a point where Council needs to determine the next steps.

REPORT

The Cost Benefit Analysis has been circulated under separate confidential cover and forms Attachment 1 of this report.

Refer Attachment 1

The Benefit Cost Analysis demonstrates considerable economic benefit to South Australia with non-quantified but potential benefits to the City of Holdfast Bay. These benefits include, but are not limited to; increased local hotel stays, increased multiplier impacts on local businesses, improved employee retention rates (particularly over the winter period), and appreciation in house prices.

Two types of analysis were conducted – an Input-Output model, and a Benefit Cost analysis. The Input-Output analysis answers the question *"what is the likely impact of this project on overall economic activity, namely job creation and gross state product?"*; the Benefit Cost analysis answers the question *"is this project worth doing?"*. (If the Benefit Cost analysis returns a ratio of 1 or higher the project is considered to be worth doing). The two approaches are complementary in that they assess the impacts of the project from different perspectives.

Data used to inform the Benefit Cost Analysis was supplied from a number of sources including the Australian Bureau of Statistic, the Department of Planning, Transport and Infrastructure, Mott MacDonald and Tourism Australia and the City of Holdfast Bay.

The Economists based their modelling on the project as described by Mott MacDonald which include public spaces, an enclosed pavilion, boutique hotel and a centre for marine excellence/aquarium plus a terminal for ferries etc. They assumed a construction period of five years, with an estimated total investment of $260 - $280 million.

The Input-Output model estimates that the gross state product derived from the 5 year construction period is on average $42 million per year, with an expected creation of 289 full time equivalent jobs on average per year. (The actual results will vary across the 5-year period depending on the level and type of construction activity).

The Benefit Cost analysis shows that the proposed redevelopment has a significant quantified incremental net benefit relative to the base (do nothing) case of $37.3m and a benefit cost ratio of 1.1.

Over the course of the 25 years used for the analysis, the most significant benefits for the redevelopment are in terms of additional visitor expenditure from international and interstate tourists ($150 million), the value of visits to the aquarium/marine research centre ($66 million) and revenue earned by the hotel operator ($47 million). Revenue to Council from rates is projected to be $2.23 million. All dollar values are at 2016 values. (A 7% real discount rate was used for this calculation.)

It is clear that the success of the project will depend on financial contributions from both state and federal governments, as well as the private sector. The Benefit Cost Analysis indicates that this project is likely to offer a positive return for investors and the current political climate (federal election) suggests that active lobbying of major stakeholders is timely.

It is important to note that the Benefit Cost Analysis are very sensitive to the data and assumptions used. The Economists took a conservative approach and much more detailed analysis based on the extent and nature of each individual element of the project, including Environmental Impact Statements and extensive community consultation would need to be conducted prior to any major investment. At this time, it is envisaged that the funding for any further analysis would rely on State, Federal or private investment.

The opportunity now exists for Council to promote the benefits of this project to State and Federal members with a view to the State government taking carriage of the redevelopment, with Council's main role in the project as one of 'supportive partner'.

It is proposed that Council continues to promote the project to local members of parliament, (state and federal), other councils and other stakeholders and that a stakeholder engagement plan will be developed to ensure that communications are both strategic and targeted. Marketing materials will be up-dated to incorporate the key findings from the Benefit Cost Analysis.

By continuing to lobby stakeholders to engender excitement and commitment to the project, Council is demonstrating its commitment to the future of Holdfast Bay.

BUDGET

The cost of up-dating appropriate marketing materials is estimated at $3,000 and can be absorbed within existing budgets.

LIFE CYCLE COSTS

There are no life cycle costs associated with this project at this time.

South Australian Centre for Economic Studies

Benefit Cost Analysis of the Glenelg Jetty Regeneration Project

Report commissioned by:

City of Holdfast Bay

Report prepared by:

The South Australian Centre for Economic Studies
University of Adelaide

June 2016

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Executive Summary

The City of Holdfast Bay has developed a proposal to redevelop and repurpose the Glenelg Jetty to create an iconic tourism and economic hub which attracts visitors to Glenelg and, potentially, South Australia. The proposal involves extending and widening the jetty and raising its build to a modern urban form. Various multi-purpose facilities are currently planned to be incorporated into the redeveloped jetty in order to attract visitors. These facilities include a public event space at the start of the jetty; enclosed pavilion at the end of the jetty to host events; boutique hotel; centre for marine excellence and aquarium; terminal for catamaran ferries, luxury yachts and seaplanes; and other facilities that cater for specific users, such as dedicated jetty fishing space and recreational swimming areas.

Through the provision of improved and new visitor experiences the proposed redevelopment will increase visitation to the region – whether by increasing the average length of stay and/or visitor numbers – thus helping to stimulate economic activity. Other potential benefits include, among other things, the value to visitors of new experiences (e.g. aquarium) and improved existing jetty facilities; enhanced tourism links with regional centres; value added from construction activity; additional rates revenue for the City of Holdfast Bay; a reduction in employee transition costs for businesses due to establishment of a more smoother profile of activity through the year; and appreciation in house prices for home owners located near the jetty.

Two approaches were taken to assessing the economic impact of the proposed development, namely modelling the impact of the construction and operational phases of the proposal on local economic activity (in this case using input-output analysis), and undertaking a cost benefit analysis.

Input output analysis provides good information on the gross changes to local employment and value added, but does not capture any of the non-market impacts of the proposal such as the value of new visitor experiences. Cost benefit analysis allows non-market impacts of the proposal to be assessed (and, where possible, monetised) relative to its costs, but does not capture the impact of direct project expenditures on the local region.

These two approaches are complementary in that they assess the impacts from different perspectives, but they are not in any sense additive.

It is important to note that the following analysis is based on a preliminary version of the jetty redevelopment proposal with considerable uncertainty regarding the overall scope and features of any finalised proposal. Given significant uncertainty and data limitations high level assumptions have been adopted in some circumstances. Thus the potential impact of the redevelopment may change significantly depending on any refinement of the scope of the jetty redevelopment proposal.

Input output analysis

The gross economic impact of the construction phase of the jetty redevelopment was assessed using an Input-Output model. The construction impact is modelled separately for each of the five years of construction. Details of the methodology used, and the limitations of input output analysis, are provided in Chapter 4. Potential relevant limitations include that:

- the results of the input-output analysis represent the gross impacts in the absence of any capacity constraints; and
- the input-output tables are based on data that would only approximate the actual pattern of linkages between industries in the regional economy.

Construction activity for the redevelopment is spread over five years, with the greatest amount of activity occurring in 2018/19 and 2019/20 (i.e. years 3 and 4). The estimated total spending on the redevelopment was applied as a shock to the ‘other construction’ sector.

The "total impacts" of the 5 year construction phase of the jetty redevelopment are estimated to be $42 million in gross state product (GSP) on average per year, while the employment impacts are estimated to be 289 full-time equivalent (FTE) jobs on average per year.

The average impacts obscure significant variations in economic impacts over the construction phase of the redevelopment due to fluctuations in the level of construction activity. For instance, the "total impacts" of the jetty redevelopment are estimated to be $7.8 million in GSP in 2016/17 rising to a peak of $78 million in 2018/19 and 2019/20 respectively, before falling back to $7.8 million in 2020/21. Meanwhile, employment impacts are estimated to rise from 56 FTE jobs in 2016/17 to a peak of 536 FTE jobs in 2018/19, then fall back down to 52 FTE jobs in the final year of construction – refer Table E.1.

Table E.1: Gross impact of construction activity by year

	2016/17	2017/18	2018/19	2019/20	2020/21	Average (per year)
Gross State Product ($'m)						
Direct impact	2.7	13.7	27.4	27.4	2.7	14.8
Production impact	5.6	27.9	55.9	55.9	5.6	30.2
Total impact	7.8	38.9	77.8	77.8	7.8	42.0
Employment (persons, full-time equivalent)						
Direct impact	19	93	182	179	18	98.2
Production impact	41	204	400	393	39	215.3
Total impact	56	273	536	526	52	288.5

A new jetty incorporating a boutique hotel, various attractions and provision of terminals for various transport modes, together with a pavilion that will give the city greater scope to hold events all year round, should increase visitor attendance and increase visitor expenditure in the region. Unless it displaces an interstate or overseas trip, increased visitor expenditure from South Australian residents would not be considered a net economic benefit since it would simply substitute for some other expenditure made in the state. Although impacts associated with local visitor expenditure may be of interest from a City of Holdfast Bay perspective, they have been excluded from further consideration in the analysis, with impacts only being assessed in respect of additional international and interstate visitor expenditure.

The extent to which a new jetty may boost visitor attendance and associated expenditure is highly uncertain with little existing evidence of the impacts of such projects provided by existing literature. Nonetheless, plausible estimates of additional international and interstate expenditure were derived. On the basis of various assumptions explained in the report, visitor expenditure is assumed to rise by $16.4 million from 2021/22 – the first full year of operation of the new jetty – and rise by approximately 0.7 per cent per annum thereafter.

The total impacts of additional visitor expenditure are estimated to be an additional $14 million in GSP and approximately 136 full-time equivalent employees in 2021/22, with GSP impacts increasing over time in line with projected visitor numbers. From a City of Holdfast Bay perspective these estimates significantly understate the potential economic impacts of the development to the extent that additional spending from intrastate visitors is excluded.

Benefit cost analysis

The benefit cost analysis is an economic evaluation, which aims to value costs and benefits of the project for the broad community, irrespective of the incidence of those costs and benefits. For the purposes of the economic evaluation we are interested in the value of resources (broadly defined) that are created or consumed. Although information about transactions may be used to value resources, we are not directly interested in transactions that occur.

The approach taken for the Cost Benefit Analysis is consistent with the guidelines issued by the Australian Government.

The cost benefit analysis was conducted over a period of 25 years commencing in 2016/17. A real discount rate of 7 per cent was applied to the analysis. All results are in real 2016 values.

The assumptions underlying each of the individual cost and benefit items are detailed in sections 5.2 to 5.7.

The economic analysis shows that proposed redevelopment has a significant quantified incremental net benefit relative to the Base Case scenario of $37.2 million. Total incremental quantified costs for the redevelopment scenario are $274 million higher compared to the base case scenario, while total incremental benefits are $312 million higher. This gives the redevelopment scenario an incremental benefit cost ratio of 1.1 relative to the base case.

While the redevelopment scenario has a positive net benefit relative to the base case scenario, there are also a number of potential benefits that were unquantifiable for the redevelopment scenario. These non-quantified benefits include:

- enhanced tourism links;
- appreciation in local house prices;
- reduced employee transition costs for business; and
- enhanced facilities for marine biology students.

There are also non-quantified impacts in respect of changes in travel times, which may be positive or negative, and potential unquantified negative impacts in terms of increased congestion for visitors and local residents and loss of access to the jetty during the construction phase. Readers and decision makers need to bear in mind the range of unquantified benefits and costs when interpreting the results of the analysis.

The results of the benefit cost analysis are sensitive to variations in some of the assumptions within the bands tested. For instance, the redevelopment scenario has a negative net benefit relative to the base case under the assumptions of a 10 per cent discount rate rather than 7 per cent; the increased length of stay for international and interstate visitors due to the redevelopment is 0.25 days rather than 0.5 days; there is no increase in length of stay for interstate visitors; and effectively breaks even with the base case (i.e. has a small negative net benefit) if capital costs were 20 per cent higher. A negative net benefit under higher discount rate assumption reflects that the costs associated with the project are front-loaded whereas benefits in terms of increased visitor expenditure, improved visitor experience etc., are realised as a relatively constant stream over the analysis period, and a higher discount rate consequently gives less weight to these future benefits. Meanwhile, the results are clearly sensitive to assumptions regarding additional visitor expenditure, which in part reflects that these are the single largest benefit item. In is important to note that assumptions regarding impacts on visitor expenditure are somewhat speculative given the lack of clear evidence regarding the scale of impact on visitor behaviour resulting from these types of redevelopment project.

The remainder of other parameter variations do not change the conclusion that the redevelopment scenario has a positive net benefit relative to the base case scenario.

1. Introduction

The City of Holdfast Bay has developed a proposal to redevelop and repurpose the Glenelg jetty to create an iconic tourism and economic hub which attracts visitors to Glenelg and, potentially, South Australia. The regeneration involves widening and extending the jetty with the inclusion of the following components:

- a public event space and facilities that cater for specific users, such as dedicated jetty fishing space and recreational swimming areas;
- a terminal for catamaran ferries and sea planes;
- facilities for private luxury yacht use;
- a boutique hotel located on the jetty;
- an enclosed pavilion located at the end of the jetty to cater for a wide range of events;
- a centre for marine excellence and aquarium with an educational and tourism focus.

Development of the proposal is at a relatively early age and the City of Holdfast Bay is interested in ascertaining the potential economic impact and net benefit of the development in order to assess both the feasibility of the development and support approaches for funding. The City of Holdfast Bay consequently commissioned the SA Centre for Economic Studies to undertake an independent economic analysis of the proposed regeneration project.

There are two broad ways in which the economic impact of the proposed regeneration project could be assessed. The first is to model the impact of the proposal on local economic activity (in this case using input-output analysis). This provides good information on the changes to local employment and value added, but does not capture any of the non-market impacts of the proposal such as improved amenity and enjoyment for visitors and local residents. The second approach is to undertake a cost benefit analysis. This allows non-market impacts of the proposal to be assessed (and, where possible, monetised) relative to its costs, but does not capture the impact of direct project expenditures on the local region.

Each of the approaches to assessing the project are included in this report, with the results of the input output analysis reported in Chapter 4 and the cost benefit analysis in Chapter 5.

These two approaches are complementary in that they assess the impacts from different perspectives, but they are not in any sense additive.

It is important to note that the following analysis is based on a preliminary version of the jetty redevelopment proposal with considerable uncertainty regarding the overall scope and features of any finalised proposal. Given significant uncertainty and data limitations high level assumptions have been adopted in some circumstances. Thus the potential impact of the redevelopment may change significantly depending on any refinement of the scope of the jetty redevelopment proposal.

2. Socio and Economic Profile of City of Holdfast Bay

[Forthcoming.]

3. The Proposed Regeneration Project

The original Glenelg jetty was constructed in 1859 as a working port and has evolved over time in terms of its physical dimensions and characteristics. The jetty was originally constructed to a length of 361 metres and width of 6 metres. Within a couple decades of its construction various enhancements were made including construction of a lighthouse, extension of the railway tracks and addition of an 'L' head to service ships (Mott MacDonald 2015). Other notable features that have existed during its history include:

- public swimming baths located north of the jetty (1876–1926);
- lower jetty level that was often used by fishermen;
- a three story pavilion at the end of the jetty on a separate platform that incorporated a dining room, refreshment rooms and garden roof (1906–1948); and
- an aquarium located on the north side of the jetty (1929–1948).

A major storm in 1948 destroyed the jetty. While the pavilion and aquarium remained standing, they were damaged and ultimately made non-functional without the main jetty infrastructure (Mott MacDonald 2015). The jetty was partially rebuilt in 1969 in its current form to a length of 215 metres and width of 5 metres. Notably, the jetty was rebuilt without its previous attractions in terms of the pavilion and aquarium. The current jetty infrastructure is consequently much reduced in scale and attractiveness for visitors compared to its pre-1948 incarnation. The main use of the current jetty is light recreational activities such as fishing, walking, swimming and sight-seeing.

The City of Holdfast Bay has identified a proposal to rejuvenate the Glenelg jetty and the adjacent Jetty road tourism precinct by building a new jetty that incorporates various new attractions and features, thus aligning the jetty more closely to its pre-1948 incarnation. The proposal involves expanding the jetty to a length of approximately 300 metres and width of 30 metres, and adopting a modern urban form that is more attractive to visitors. Major features of the proposed jetty redevelopment include:

- an event space at the beginning of the jetty;
- enclosed pavilion at the end of the jetty to provide capacity to hold various types of events year round;
- a boutique hotel aimed at the upper end of the market to attract new visitor demographics and minimise any displacement from existing accommodation facilities;
- a centre for marine excellence and aquarium that provides recreational and educational experiences for visitors;
- terminals for catamaran ferries, luxury yachts and seaplanes in order to provide new transport options for travel to regional centres (e.g. Kangaroo Island, Port Lincoln) and attract new visitor segments;
- public baths as well as potential for dedicated facilities for existing users such as spaces for fishers.

The total investment required to fund the proposal in its current form is estimated at $260 to $280 million (Mott MacDonald 2015). It is anticipated that funding will be derived from a mixture of public and private sector investment, although public sector funding would be required to fully finance the base jetty infrastructure. Other aspects of the proposal will be dependent on securing sufficient private sector investment.

By developing an iconic tourist destination with new attractions and transport linkages, the proposed redevelopment would contribute to the South Australian Tourism Commission's objective of ensuring Adelaide acts as a strong hub that helps to drive visitation to the regions, as well as realise potential growth in the South Australian tourism sector beyond the current 2020 planning horizon (SATC 2014).

The redevelopment would provide various potential benefits that include, but are not limited to:

- increased visitation to the Glenelg jetty precinct by international, interstate and intrastate visitors, whether through increased length of stay, additional visitor numbers or a combination of the two, and therefore increased visitor expenditure for the region but also potentially the state as a whole;

- improved visitor experience for existing jetty visitors due to improvements in visual and physical amenity and provision of new attractions and facilities (e.g. aquarium, public baths);
- increased visitation together with the provision of facilities (i.e. pavilion) to host events all year round may help to smooth the current highly seasonal nature of business activity in the Jetty road precinct area, helping to reduce the depressed activity levels experienced during the winter period; and
- additional transport options to regional centres will enhance linkages to regional areas.

4. Impact of Expenditure

4.1 Assessing Economic Impact

The gross economic impact of the construction phase of the jetty redevelopment was assessed using an Input-Output model. The construction impact is modelled separately for each of the five years of construction. The methodology employed involves estimating the total direct and indirect employment and gross regional product arising from expenditures on the jetty redevelopment construction. These costs include construction in relation to the jetty / plaza deck, hotel, aquarium and marine research centre, pavilion, and outdoor events space.

The impacts were modelled using the detailed (78 industry sector) 'Southern Adelaide' Input Output tables developed for the Department of Premier and Cabinet (Rippin and Morison, 2013), modified to adjust for actual and projected changes in the compensation of employees by sector. The Southern Adelaide table comprises the councils of Holdfast Bay, Marion, Mitcham and Onkaparinga.

An input-output table describes the linkages between sectors of the economy based on their patterns of purchase and supply. For each of the sectors in the economy (e.g. accommodation, cafes and restaurants; food and beverages manufacturing) it details the inputs the sector uses (to produce output in the case of producing sectors; for consumption in the case of "consumer" sectors), and what sectors it sells its output to.

The intuition of the input-output approach is best illustrated by example. Suppose the City of Holdfast Bay spends $1,000 on landscaping services from a local contractor. That landscaping contractor then uses the $1,000 to purchase inputs from "primary" and "intermediate" suppliers. "Primary" suppliers are employees, providers of capital, indirect taxation, and "imports" from suppliers of goods and services located outside of the Southern Adelaide region. Primary income payments are therefore labour compensation (wages), profits to owners, indirect taxes (net of subsidies) and imports. The landscaping contractor will also purchase inputs (e.g. fuel, plants, soil, tools etc.) from intermediate suppliers in the Southern Adelaide region which, by and large, are other business. Payments to those business enterprises then flow to their own primary incomes and intermediate suppliers. And this process carries on repeatedly, with ultimately all of the payments flowing to primary incomes. The input-output table lets us trace through, and aggregate, this chain of impacts.

The employment to output ratios in the 'Southern Adelaide' IO table have been adjusted to allow for increases in actual wage costs by broad sector from 2011/12 to 2014/15, and then to reflect projected changes in wage rates for those financial years up to 2020/21 (i.e. the final year of construction). This involves discounting the published multipliers by up to a maximum of approximately 20 per cent on average over the period 2011/12 to 2020/21. The discounting factor is based on the recent average rate of labour cost inflation by broad industry in Australia (ABS, 2016).

The modified Southern Adelaide input-output table was then transformed to derive input-output multipliers (see Box 4.1) for expenditures in Southern Adelaide for each year over the period 2016/17 to 2020/21.

The multipliers were then combined with annual expenditure data to estimate the direct and indirect impacts of the construction of the new Glenelg jetty on the Southern Adelaide economy, in terms of the employment and gross regional product created.

Box 4.1 Input-output multipliers

An increase in the output of one industry will (at least in gross terms) lead to increased outputs in other sectors due to the purchases of intermediate inputs to production, and the spending of capital and labour income locally. A multiplier measures the total change across the entire regional economy arising from a unit change in the final demand for the output of an industry (the initial "shock" to the model). Multipliers can be calculated for a range for economic variables, such as individual and business income, gross value added, and employment, according to one's interest.

In some cases the interest in the model results will be restricted to Type I impacts, also known as the production impact. This is the impact of the initial expenditure traced through the chain of intermediate good usage for the relevant industry sectors. However, no allowance is made for the expenditure of primary incomes (e.g. increases in local wage and capital income arising from the change in production). The total impact of an output change is derived from the production and consumption impacts. The consumption impact arises when primary factors − e.g. households in receipt of wage income − spend the incomes that they receive.

Limitations of the Approach

There are some important limitations associated with input-output models that should be considered when interpreting the results of the input-output analysis.

Most importantly, the results of input-output models represent the gross impacts in the absence of capacity constraints. In reality, except in economic downturns where there is substantial unused labour and capital, anything that boosts one form of economic activity is likely to increase wages and returns to capital to attract the additional resources it needs, this in turn leads to reduced economic activity in other sectors or regions. At the national level, the net impact of any new project on employment is likely to only be a small fraction of the gross impact when the national economy is close to full employment, with the benefits coming through increased wages and increased returns to capital. At the regional level (particularly for small regions) net impacts can be much closer to gross impacts as labour and capital can be drawn in from surrounding regions, and there can be existing unemployed labour and capital.

Secondly, in the absence of a better alternative, the South Australian input-output tables are based on data that would only approximate the actual pattern of linkages between industries in the Southern Adelaide regional economy. Moreover, no input output table is available for the City of Holdfast Bay. While one can in principle derive an indicative regional input output table by adjusting the national input output table to better reflect the local distribution of economic activity in the City of Holdfast Bay, it was felt that the existing Southern Adelaide input output table was an appropriate study area. A related limitation is that the Australian level input output table on which the South Australian tables are based are now somewhat dated.

Thirdly, an input-output analysis assumes that the industrial structure of the pre-existing regional economy remains unchanged as a result of the new project. This will not necessarily be the case as the structure of the regional economy can change to take advantage of the opportunities arising from the new project. However, given the scale of the proposed development, and its complementary nature to the existing industry structure of the Southern Adelaide regional economy, this limitation is unlikely to be significant.

Finally, in interpreting the modelled impacts on employment it should be noted that the estimates of the model effectively represents an increase in estimated hours worked which has been converted to full-time equivalent positions. In many cases the modelled impact (to the extent that the net impact matches the gross impact) will occur through increases in the hours worked by existing employees rather than the creation of new positions.

4.2 Construction Phase

Construction activity for the redeveloped jetty is assumed to be spread over five years, with $10 million in construction costs in 2016/17, $50 million in 2017/18, $100 million in 2018/19, $100 million in 2019/20, and $10 million in 2020/21. The estimated total spending on the redevelopment was applied as a shock to the 'other

construction' sector, which is comprised of non-residential building and heavy and civil engineering construction activity.

Taking into account the downstream production activity generated within the Southern Adelaide regional economy by the construction phase of the jetty redevelopment, then the "production impacts" of the construction phase are estimated to be $30.2 million in gross state product (GSP) on average per year, while the employment impacts are estimated to be 215 full-time equivalent (FTE) jobs on average per year – refer Table 4.1.

If the additional activity that is generated by the spending of wages by the people in jobs arising from the construction activity associated with the jetty redevelopment is taken into account, then the "total impacts" of the jetty redevelopment over the 5 year construction phase are estimated to be $42 million in GSP on average per year, while the employment impacts are estimated to be 289 FTE jobs on average per year.

Table 4.1: Gross impact of construction activity by year

	2016/17	2017/18	2018/19	2019/20	2020/21	Average (per year)
Gross State Product ($'m)						
Direct impact	2.7	13.7	27.4	27.4	2.7	14.8
Production impact	5.6	27.9	55.9	55.9	5.6	30.2
Total impact	7.8	38.9	77.8	77.8	7.8	42.0
Employment (persons, full-time equivalent)						
Direct impact	19	93	182	179	18	98.2
Production impact	41	204	400	393	39	215.3
Total impact	56	273	536	526	52	288.5

The average impacts summarised above obscure some significant variations in economic impacts over the construction phase of the redevelopment due to fluctuations in construction activity. For instance, focusing only on the "total impacts" of the jetty redevelopment, the impact on GSP is expected to rise from $7.8 million in 2016/17 to a peak of $78 million in 2018/19 and 2019/20 respectively, before falling back to $7.8 million in 2020/21. Meanwhile, employment impacts are estimated to rise from 56 FTE jobs in 2016/17 to a peak of 536 FTE jobs in 2018/19, then fall back down to 52 FTE jobs in the final year of construction.

Given the current subdued level of non-residential building and construction activity in Adelaide and the prospects of continued subdued economic growth in the short to medium term (SACES 2015), it is unlikely that the construction activity associated with the redevelopment would cause wage pressures in the local labour market. As such, the net impacts are likely to be close to the gross impacts.

4.3 Operational Phase

Any change to direct employment in the operational phase, and the extent to which it represents a net increase in total activity is currently unknown and is therefore not included in this analysis.

A new jetty incorporating a boutique hotel, various attractions and provision of terminals for various transport modes, together with a pavilion that will give the city greater scope to hold events all year round, should increase visitor attendance and increase visitor expenditure in the region. Unless it displaces an overseas trip, increased visitor expenditure from South Australian residents would not be considered a net economic benefit since it would simply substitute for some other expenditure made in the state. Although impacts associated with local visitor expenditure may be of interest from a City of Holdfast Bay perspective, they have been excluded from further consideration in the analysis, with impacts only being assessed in respect of additional international and interstate visitor expenditure.

The extent to which a new jetty may boost visitor attendance and associated expenditure is highly uncertain with little existing evidence of the impacts of such projects provided by the existing literature. Nonetheless, plausible estimates of the additional international and interstate expenditure resulting from the redevelopment were derived and the assumptions regarding these estimates are explained in section 5.4.3. On the basis of these assumptions visitor expenditure is assumed to rise by $16.4 million from 2021/22 – the first full year of operation of the new jetty – and rise by approximately 0.7 per cent per annum thereafter.

It is interesting to consider the impact that additional visitor expenditure may have in terms of GSP and employment created. The visitor expenditure for 2021/22 was allocated between sectors using the average distribution of expenditure by overnight domestic visitors whose purpose of trip was a holiday with long distance travel costs excluded from the calculation (TRA 2016a), with the following sectors in the input output table experiencing additional spending:

- wine, spirits and tobacco manufacturing;
- petroleum and coal product manufacturing;
- retail trade;
- accommodation;
- road transport;
- rental, hiring and real estate services;
- administrative and support services;
- cultural and recreational services; and
- personal and other services.

The total impacts of additional visitor expenditure are estimated to be an additional $14 million in GSP and approximately 136 full-time equivalent employees in 2021/22, with GSP impacts increasing over time in line with projected visitor numbers. From a City of Holdfast Bay perspective these estimates significantly understate the potential economic impacts of the development to the extent that additional spending from intrastate visitors is excluded.

Given the seasonal nature of tourism and irregular nature of event tourism the increases in FTEs may be spread unevenly through the year. Businesses are likely to adjust to this through a combination of taking on additional casual employees during certain times of the year and around events and through increasing the hours of existing workers.

5. Benefit Cost Analysis

5.1 Methodology

The benefit cost analysis is an economic evaluation, which aims to value costs and benefits of the project for the broad community, irrespective of the incidence of those costs and benefits. A financial analysis, in contrast, focuses on impacts from the point of view of a particular stakeholder.

For the purposes of the economic evaluation we are interested in the value of resources (broadly defined) that are created or consumed. Although information about transactions may be used to value resources, we are not directly interested in transactions that occur. For example, if the South Australian Government provided a subsidy to a project the subsidy would not be regarded as a benefit of the project; the benefit lies in the service stream produced by the project. Nonetheless, there may be an interest in showing transactions in the benefit cost analysis in order to observe the financial impact on particular stakeholders. It should be noted that in the following analysis the breakdown in transactions by stakeholder is highly uncertain at this stage given the early nature of the proposal and considerable uncertainty regarding potential investment and funding contributions from the private and public sectors.

The benefit cost analysis was conducted over a period of 25 years commencing in 2016/17. A discount rate of 7 per cent was applied to the analysis. It includes estimated construction costs and cost savings to the City of Holdfast Bay, benefits to visitors and other stakeholders. A residual asset value is included so as to make allowance for the service provided by the assets created beyond the end of the analysis timeline.

The analysis is conducted in real terms and all cash flows are entered in 2016 prices. Therefore no assumptions need to be made about actual inflation outcomes.

Only first round impacts of establishing the new Jetty are considered. This is done in order to avoid any potentially contentious issues arising from multiplier effects, and difficulties in identifying the extent to which any changes represent a net increase in spending rather than a transfer between uses. An input output analysis exploring the potential gross employment and gross value added impacts of the project is provided in Chapter 4.

5.2 Visitor assumptions

In order to assess various impacts on visitors over the time horizon of the analysis (i.e. from 2016/17 to 2041/42), baseline forecasts of international, interstate and intrastate visitors to the City of Holdfast Bay were required.

Data on recent visitation to Holdfast Bay and the Adelaide Tourism Region were sourced from Holdfast Bay, the South Australian Tourism Commission and Tourism Research Australia. Table 5.1 summarises recent trends in visitor numbers by type of visitor for Holdfast Bay and the Adelaide Tourism Region (i.e. greater metropolitan area). Holdfast Bay had an estimated total visitor population of approximately 1 million people in 2015. People undertaking day trips accounted for 81 per cent of visitors while overnight visitors accounted for the remaining 19 per cent.

While 2.8 per cent of the Adelaide estimated resident population at 30 June 2015 was located in Holdfast Bay, the latter was responsible for 20 per cent of day trips, 7.7 per cent of domestic overnight visitors, and 2.7 per cent of international overnight visitors. The data on overnight stays understates the role that Holdfast Bay plays in terms of tourism with many visitors undertaking day trips to the region. It is estimated that 80 per cent of interstate and international tourists to South Australia visit Glenelg (Intuito Market Research 2013).

In terms of the forecast of visitor numbers, the City of Holdfast Bay provided forecasts for the region and Adelaide for the year 2020. It was assumed that visitor numbers for each category for years between 2015 and 2020 would grow at a constant average annual rate. A split of domestic overnight visitors by interstate and intrastate

visitors was not available for Holdfast Bay. It was consequently assumed that the split of interstate and intrastate visitors for Holdfast Bay was equivalent to the split that applies for the Adelaide Tourism Region.

Table 5.1 Number of Visitors by Visitor Type ('000 persons)

	2009	2010	2011	2012	2013	2014	2015
Holdfast Bay							
International Overnight	10.7	14.4	15.9	11.7	16.0	10.0	10.0
Domestic Overnight	136.0	132.0	140.0	141.0	147.0	165.0	187.0
Interstate	*na*	*na*	*na*	*na*	*na*	*na*	*na*
Intrastate	*na*	*na*	*na*	*na*	*na*	*na*	*na*
Day Trippers	759.0	698.0	685.0	672.0	733.0	814.0	838.0
Total Visitors	905.7	844.4	840.9	824.7	896.0	989.0	1,035.0
Adelaide							
International Overnight	324.3	336.1	323.1	299.7	343.4	338.9	367.7
Domestic Overnight	2,171.0	2,014.0	2,189.0	2,227.0	2,140.0	2,342.0	2,428.0
Interstate	*1,406.0*	*1,269.0*	*1,383.0*	*1,319.0*	*1,252.0*	*1,414.0*	*1,495.0*
Intrastate	*765.0*	*745.0*	*806.0*	*908.0*	*888.0*	*928.0*	*933.0*
Total No. of Staying (Overnight) Visitors							
Day Trippers	3,311.7	3,463.3	3,672.1	4,489.2	3,856.6	4,398.2	4,273.8
Total Visitors	5,806.4	5,813.2	6,183.6	7,015.7	6,339.2	7,079.3	7,069.8

Source: City of Holdfast Bay, *Source and Number of Visitors 2009-2015*; Tourism Research Australia, *Tourism Region Summaries*; and South Australian Tourism Commission, unpublished data.

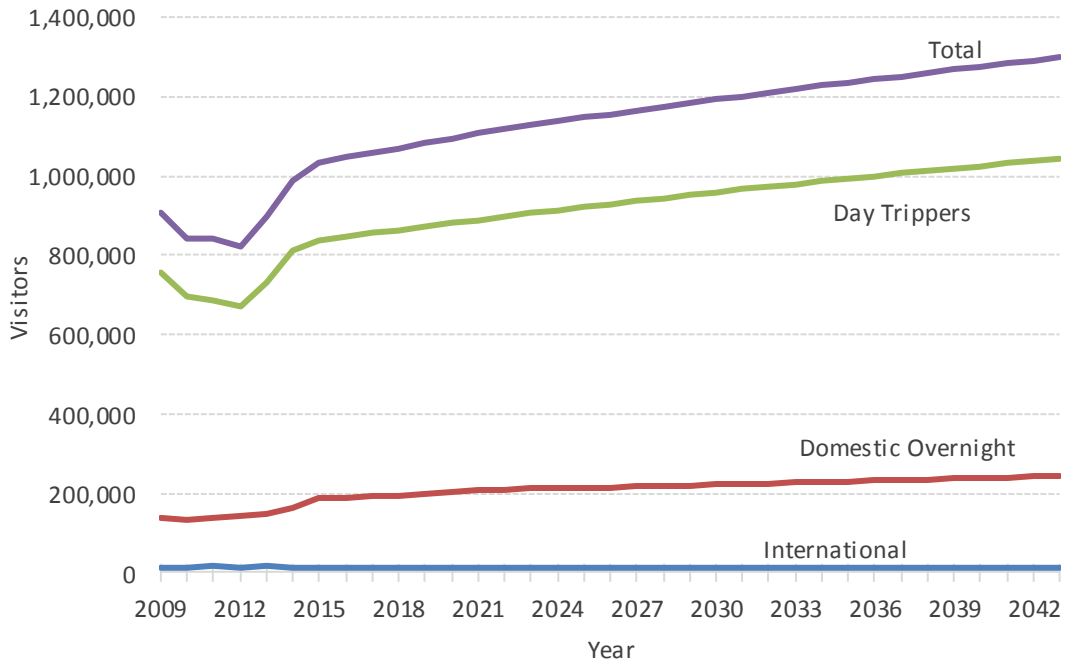
Existing forecasts of visitor numbers beyond 2020 were not available for Holdfast Bay or Adelaide, leaving SACES to derive are own forecasts. The starting point was to forecast visitor numbers for the Adelaide region. It was assumed that visitor numbers beyond 2020 would grow in line with the long-term trend over the period from 2005 to 2020 (i.e. based on actual data from 2005 to 2015 and the previously mentioned forecasts for 2020). This involved fitting a simple linear regression to each of the major categories of visitor numbers for the period 2005 to 2020.

In terms of visitor numbers for Holdfast Bay beyond 2020 it was simply assumed that the region's share of Adelaide international and domestic overnight visitors in 2020 would be maintained over the analysis horizon. Visitor numbers were then estimated by applying these ratios to the forecast visitor numbers for Adelaide. With respect to overnight domestic visitors, the ratio of interstate and intrastate visitors for Holdfast Bay was assumed to be equivalent to the ratio that applies for Adelaide. A slightly different approach was taken for projecting forecasts of day visitors. It was assumed that the ratio of Holdfast Bay day visitors to the projected Adelaide resident population in 2020 would be maintained over future years. This ratio was then applied to the projected estimated resident population for Adelaide derived from Department of Planning, Transport and Infrastructure (DPTI) population projections.[1]

The results of the above assumptions are illustrated in Figure 5.1. Total visitor numbers are projected to rise from approximately 1 million visitors in 2015 to 1.3 million by 2043, equivalent to an increase of 26 per cent. International visitors number are forecast to rise from 10,000 to 12,900 persons (29 per cent); domestic overnight visitors from 187,000 to almost 243,000 persons (30 per cent); and day trippers from 838,000 to 1,043,000 persons (25 per cent). In terms of domestic overnight visitors, interstate visitors are projected to rise from 115,000 to 146,000 persons (27 per cent), while intrastate visitors are projected to rise from 72,000 to 97,000 persons (34 per cent).

[1] Annual growth rates from the medium series projections prepared by DPTI (2015) were applied to the estimated resident population for 2015 from ABS (2016a).

Figure 5.1 Actual and Projected Visitor Numbers for Holdfast Bay[(a)]



Note: (a) Projections from 2016 and onwards.
Source: City of Holdfast Bay, SA Tourism Commission, Tourism Research Australia. Calculations by SACES.

5.3 City of Holdfast Bay

5.3.1 Jetty Construction Costs (cost item)

The total construction cost for the new jetty is estimated to be $270 million based on an estimate by Rider Levett Bucknall (Mott MacDonald 2015). Total construction costs associated with upgrading, extending and widening the existing jetty (i.e. Jetty Plaza) are estimated to be $118 million. Construction costs for other major components are estimated to be $47 million for the hotel, $81 million for the aquarium / marine research centre, $19 million for the pavilion, and $4.6 million for the outdoor event space.

As construction of the hotel is assumed to be entirely funded and operated by the private sector, it is assumed that the $47 million in hotel construction costs are faced by the hotel operator (see section 5.6) rather than the council. Those components of the project relating to the aquarium, pavilion and outdoor event space are expected to be fully or partly financed by a combination of private sector, agency and other stakeholder funding. However, the spilt in terms of funding between these stakeholders and who exactly will operate the facilities is unknown at this stage. Thus in order to simplify the analysis we have assumed that construction costs for these facilities are allocated to council in the first instance, with council receiving funding contributions (i.e. transfers) from other stakeholders to offset these costs. On this basis total non-hotel construction costs are assumed to be $223 million.

It is anticipated that the construction timeframe, from design to rectifying any defects, will span approximately 5 years. Mott MacDonald provided high level estimates of construction costs per year under a non-staged approach. In the absence of any further information, for the purposes of the analysis we have assumed that the jetty / plaza component would be constructed first, with the remaining components all being constructed simultaneously. The resulting schedule of construction for each component of the regeneration project is summarised in Table 5.2.

Table 5.2: Construction costs – Glenelg Jetty Regeneration ($'000)

	Year 1 2016/17	Year 2 2017/18	Year 3 2018/19	Year 4 2019/20	Year 5 2020/21	Total
Jetty	10,000	50,000	57,936	-	-	117,936
Hotel	-	-	11,978	31,991	3,199	47,168
Aquarium	-	-	20,645	55,137	5,514	81,296
Pavilion	-	-	4,820	12,872	1,287	18,979
Outdoor event space	-	-	4,622	-	-	4,622
Total	10,000	50,000	100,000	100,000	10,000	270,000

The City of Holdfast Bay has advised that under the Base Case – Do Nothing scenario, concrete repairs to the existing Jetty will likely be required sometime in the next couple of years. These costs are estimated to be $50,000 and are assumed to be incurred in 2017/18. In addition, existing lighting on the Jetty has a remaining useful life of 8 years and current replacement cost of $14,700. It is consequently assumed that existing lighting infrastructure is replaced in 2023/24. These costs would be avoided under the regeneration option.

5.3.2 Operating Costs (cost item)

The City of Holdfast Bay has advised that general maintenance costs for the existing jetty are approximately $5,000 per annum while electricity costs, which can't be directly observed as they are bundled with general foreshore electricity costs, would be no more than $500 per annum. In addition, the existing jetty will require concrete maintenance approximately every 5 years at an estimated cost of $5,000.

Operating and maintenance costs for the proposed new jetty are based on advice provided by Mott MacDonald in terms of a percentage of the asset rebuild cost as a function of residual design life (City of Holdfast Bay, pers. comm.). More specifically, it was advised that maintenance costs for fixed assets could be assumed to be equivalent to 0.25 per cent of the construction cost for the first 20 per cent of the asset design life, 0.5 per cent of the construction cost for the 20 to 40 percentage range of the design life, etc. We have applied these assumptions to the capital cost of the jetty plaza to estimate associated annual maintenance costs. On this basis maintenance costs for the new jetty are assumed to be approximately $295,000 per annum for the first 16 years of operation of the new jetty, rising to $590,000 per annum thereafter for the remainder of the analysis period. Clearly these amounts are substantially higher compared to those assumed for the Base Case scenario.

5.3.3 Funding contribution from state government (transfer item)

In order for the redevelopment to proceed the City of Holdfast Bay will require a funding contribution from the South Australian government. The council currently plans to seek a funding contribution of $59 million (i.e. 50 per cent) from the South Australian government towards the cost of the Jetty Plaza. This funding contribution has been allocated over a period of 3 years on a pro rata basis based on the assumed schedule of construction costs for the Jetty Plaza. On this basis funding contributions from the state government are assumed to be $5 million in year 1, $25 million in year 2 and $29 million in year 3. The benefit to the City of Holdfast Bay in terms of a funding contribution would be netted out in the cost benefit analysis by an equivalent opposite amount accruing to the State Government.

5.3.4 Funding contribution from federal government (transfer item)

A funding contribution from the Australian Government will also be necessary for the Jetty Plaza redevelopment to proceed. The council currently plans to seek a funding contribution of $59 million (i.e. 50 per cent) from the Australian Government towards the cost of the Jetty Plaza. This funding contribution has been allocated over a period of 3 years on a pro rata basis based on the assumed schedule of construction costs for the Jetty Plaza. On this basis funding contributions from the Australian Government are assumed to be $5 million in year 1, $25 million in year 2 and $29 million in year 3. The benefit to the City of Holdfast Bay in terms of a funding contribution would be netted out in the cost benefit analysis by an equivalent opposite amount accruing to the Australian Government.

5.3.5 Funding contribution from other funding stakeholders (transfer item)

Certain components of the project, such as the research centre and aquarium and pavilion may be owned and operated by the private sector, while other components such as the outdoor event space may need to be fully or partly financed by external sources (e.g. grant programs). Given significant uncertainty regarding funding arrangements, we have assumed that the City of Holdfast Bay will receive funding contributions that fully offset the construction costs of the aquarium, pavilion and outdoor event space. These contributions are assumed to be paid according to the assumed construction schedule of these assets. On this basis funding contributions from other sources are assumed to be $105 million in total, with the breakdown by year being $30 million in year 3, $68 million in year 4 and $6.8 million in year 5. The benefit to the City of Holdfast Bay in terms of a funding contribution would be netted out in the cost benefit analysis by an equivalent opposite amount accruing to the private sector, government agencies and other stakeholders.

5.3.6 Rates revenue – hotel (benefit item)

The hotel will be required to pay council rates to the City of Holdfast Bay. To the extent that these costs are ultimately passed onto international and interstate visitors, they represent a benefit from a South Australian perspective. The City of Holdfast Bay has advised that total rates revenue including general rates, NRM levy and Jetty Road maintenance levy would be in the order of $260,000 per annum. It is assumed that this amount will be received from 2021 onwards with total rates revenue estimated to be $5.3 million over the life of the analysis period.

5.3.7 Residual asset value (transfer item)

A residual asset value is included in the final year of the analysis to recognise the remaining useful economic life of the new facilities at the end of the analysis period. The residual asset value has been estimated using a straight line depreciation method based on the remaining useful life of the new facilities at the end of the analysis period and the initial construction cost. Unfortunately formal estimates of asset lives for each of the major components of the regeneration project were not available. Instead, assumptions regarding asset lives were made based on partial data sources. The assumptions and their basis were as follows:

- Jetty Plaza – 80 years. City of Holdfast Bay advised that the existing Jetty has a remaining useful life of 100 years. On the other hand a report published by the Local Government Association of SA (Tonkin Consulting 2014) indicates that councils typically adopt useful lives for jetty infrastructure ranging from 30 to 50 years, and useful lives ranging from 57 to 87 years for bridge infrastructure. Given the remaining life for the existing jetty and that we consider the new jetty would be of a standard more akin to bridge infrastructure than the existing small jetties typically managed by councils, 80 years was considered a suitable compromise.
- Pavilion – 60 years. Tonkin Consulting (2014) indicates that South Australian councils typically adopt useful lives of 60 to 80 years for 'building – structures'. We have adopted a useful life at the lower end of this scale on the basis that building structures located on a jetty may face more wear and tear given relatively greater exposure to weather elements.
- Aquarium – 50 years. There is little publicly available information to asset the useful life of an aquarium/ marine research centre. We consequently adopted a conservative approach and assumed that the useful life would be less than the range typically adopted by councils in South Australia for 'building – structures' (see previous dot point).

On the basis of the above assumptions the residual value of the new facilities that are constructed is assumed to be $142.4 million. As this value is entered into the final year of analysis it is much smaller in present value terms.

5.4 Community

5.4.1 Value of aquarium visits (intangible benefits)

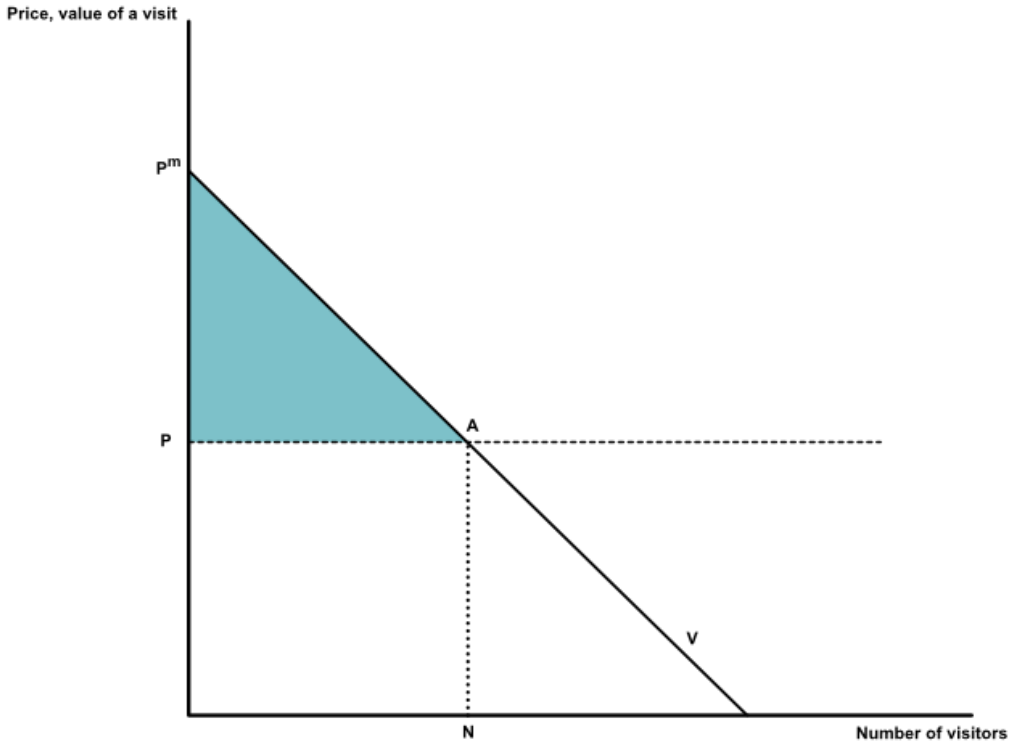
The construction of an aquarium / marine research centre will provide local residents and tourists will a potential visitor experience that is currently lacking in the Adelaide market.

For each visit or potential visit to the aquarium, each visitor will have a "value of visit" from their own perception. This value needs to be understood in a broad sense to include the "psychic" benefits of the visit, that is, the satisfaction derived by visitors which economists know as utility. A visitor will visit the aquarium if the value of the visit exceeds the admission price and any other costs involved in the visit (e.g. travel costs, congestion), and will not visit if the value is less than these costs.

The difference between a person's value of visit and the costs involved in the visit represents the net benefit of the visit to the individual. Within the sphere of economics this value is technically referred to as an individual's consumer surplus from a visit. It represents, in monetary terms, the difference between the maximum amount that an individual would be willing to pay to consume a service or good and the amount that they actually do pay.

The concept of consumer surplus is illustrated diagrammatically in Figure 5.2. The psychic benefits of a visit will vary from person to person, depending on, for instance, whether they have children, have an interest in marine life, previous experience visiting aquariums etc. Of course, the "value of visit" amounts are not directly observable. Nonetheless, they do exist and one can conceptually order these "value of visit" amounts from highest to lowest. The "value of visit" amounts are illustrated by the schedule V in Figure 5.2. In the example, there are N visitors to the aquarium at a price of P. "Value of visit" amounts less than the price P do not produce visits to the aquarium.

Figure 5.2: Consumer Surplus Associated with Aquarium Visits



The consumer surplus benefits (i.e. net visitor benefit) of the new aquarium are given by the area between the schedule V above the price P, or the area PAP^m. The quantum of the consumer surplus benefits represented by this area is ultimately unknown. While one can derive rough estimates of total visitation to the proposed aquarium (see below), information on individual or average consumer surplus amounts is lacking. Conceptually one could

estimate these amounts by conducting a sample survey to estimate willingness to pay to visit an aquarium. However, such an approach is resource intensive and costly, and in any event is not possible within the timeframe for the current analysis. While numerous studies have been conducted in terms of willingness to pay to visit particular tourism destinations (e.g. national and marine parks), participate in recreational activities (e.g. fishing) and improve particular environmental attributes (e.g. pollution, water quality), studies regarding willingness to pay to attend a new aquarium are scarce.

SACES did identify one study (Siderelis 2001) that sought to measure visitor benefits associated with incidental trips to three aquariums in the State of North Carolina in the United States of America. Based on econometric analysis of visitor survey results the Siderelis (2001) study estimated a consumer surplus of US$21.73 per individual per aquarium day-trip. Adjusting for the average 2001 Australia Dollar to US Dollar exchange rate and consumer price inflation over the interim period, this consumer surplus estimate is equivalent to $61.30 in current Australian dollars. In our judgement this estimate would appear to lie towards the high end of the plausible consumer surplus range. For example, a 2007 study prepared for the NSW Department of Environment and Climate Change estimated that recreational use values for four marine parks in New South Wales ranged from $16 to $50 ($20 to $61 in 2016 prices) when opportunity costs of time were excluded (Gillespie Economics 2007). Furthermore, Martin (1994) estimated that the consumer surplus in respect of a visit to a museum in Quebec City was an average of $8.39 per Quebec visitor (adult and child), which is equivalent to $15 in current Australian dollars. Various factors may account for the relatively high aquarium consumer surplus estimate found by Siderelis, including the possibility that it is an artefact of the modelling approach whereby the value was determined for incidental trips to the aquarium as part of a main trip to the broader region. Given these concerns and uncertainty as to whether the estimates are directly transferable to an Australian context given differences in study environments (in terms of economic, social and environment), we have used the Siderelis estimate as a guide toward the upper end of the plausible consumer surplus range of estimates.

An alternative approach to quantifying the value of a visitor experience is to adopt a scenario using a “value of time” approach. This approach recognises that an individual’s decision to participate in an activity has an opportunity cost in terms of preventing that individual from engaging in some other activity. That individual’s valuation of the preferred activity must be at least as high as the activity forgone otherwise the individual would not have decided to participate in the preferred activity. For instance, the decision by an individual to enjoy an additional hour of recreational activity rather than spend an additional hour working indicates that the value of recreational activity must be at least equal to the wage income they could have otherwise earned. By combining this concept of “value of “time with time spent on particular activities one can estimate the value of particular activities. This approach has been adopted for estimating the value of visitor experience for the proposed aquarium.

We have assumed that visitors to the aquarium would on average spend 2 hours viewing exhibits and engaging in other activities within the aquarium, and allowed 30 minutes in total travel time to and from the aquarium. Thus for aquarium visitors their value of a visit would consequently be equal to the opportunity cost of spending two and a half hours in respect of the aquarium. The recommended value for estimating regulatory impacts on household time in South Australia is $18.03 per hour in 2013/14 prices (SACES, 2011). This value has to be adjusted for the fact that children would comprise a significant proportion of visitors to the aquarium and their value of time would be significantly lower compared to adults. For the purposes of the analysis it is assumed that children’s time is worth 25 per cent of adult’s time and that children would comprise one half of visitors to the aquarium. On this basis the average value of a visit to the aquarium is estimated to be $31.7 per visitor.

The per visitor estimates of the value of an improved visitor experience are assumed to rise by 1.5 per cent per annum in real terms in recognition of real growth in household incomes.

To estimate total visitor benefits one also needs an estimate of the total number of people that would visit the aquarium. We have used estimates of the ratio of visitors to total catchment area population for existing aquariums to estimate the number of visitors that may be attracted to an aquarium located in Adelaide. The

Business Case identifies the Monterey Bay Aquarium and Research Institute in Monterey, California as a benchmark. The Monterey Bay Aquarium attracted just over 2 million visitors in 2014 from a population catchment area (defined by SACES) comprising almost 16 million people – refer Table 5.3. The visitor to population ratio for Monterey Bay implies a total visitor number of approximately 173,000 persons for the Glenelg Jetty aquarium based on the current population for the Adelaide greater metropolitan area. Data for the Sydney aquarium implies a significantly higher visitor estimate of approximately 348,000 people for an Adelaide aquarium. In our view the visitor estimate derived from the Sydney aquarium data is a little high as it implies annual visitor numbers equivalent to about a quarter of the Adelaide population. The Sydney aquarium may enjoy a relatively high visitation rate due to the greater population density on the east coast and relatively stronger tourism performance of Sydney. We have consequently taken a conservative approach and used the visitor to population ratio for Monterey Bay Aquarium to estimate visitation for the Adelaide aquarium. This ratio has then been applied to the projected estimated resident population for Adelaide over the analysis horizon. On this basis aquarium visitor numbers are assumed to rise from 183,000 in 2020/21 to 213,000 in 2041/42.

Table 5.3: Visitors and population catchment of existing aquariums

Aquarium	Number of visitors	Population catchment (persons)	Implied Adelaide aquarium visitation in 2015 (persons)	Implied Adelaide aquarium visitation in 2020/21 (persons)[a]
Monterey Bay	2,066,177	15,748,837	172,756	182,602
Sydney	1,300,000	4,920,970	347,861	367,688

Note: a i.e. first year of operation. Actual attendance for first year would be halved as operation assumed to commence in beginning of 2021.
Source: ABS, Regional Population Growth, Australia, 2014-15, Cat. No. 3218.0; United States Census Bureau; Sydney Aquarium (2012); SACES calculations.

The average values of a visit for visitors to a new aquarium have been combined with estimates of the number of visitors to estimate the annual total increase in the value of visitor experiences for a new aquarium at Glenelg Jetty. The value of visitor experiences is consequently assumed to rise from $3.1 million in 2020/21 to $9.9 million in 2042.[2] The total benefits in undiscounted terms over the life of the analysis period are $163 million. Sensitivity testing has been conducted using higher and lower individual consumer surplus amounts to assess the relative importance of these assumptions to the net results.

5.4.2 Improved visitor experience – existing Jetty visitors

The construction of an upgraded and expanded jetty will improve the experience for existing jetty visitors. Visitor experience will be improved by virtue of:

- Replacement of the existing jetty with a longer and broader jetty with a new urban form that offers significantly improved presentation over the existing jetty;
- Provision of shelter from prevailing southerly winds providing increased comfort levels;
- Provision of amenities and various facilities and mixed-use attractions along the length of the jetty (e.g. public event space, aquarium / centre of marine excellence, hotel, pavilion, yacht moorings, jetty terminal etc.) that encourage people to linger;
- Potential for sheltered and/or designated recreational swimming and fishing facilities.

At the same time the improved and expanded jetty together with the provision of additional facilities should attract new visitors.

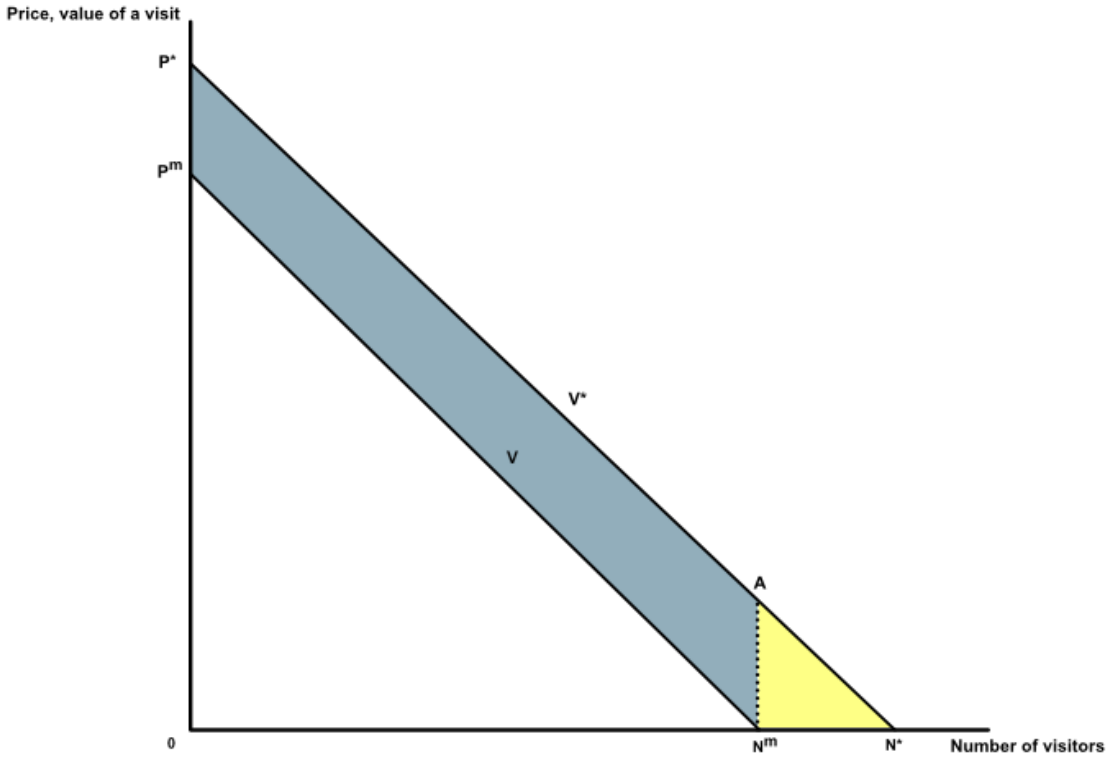
A new jetty will provide a value of visit in terms of improved consumer surplus along the lines discussed in respect of the value of aquarium visits in section 5.4.1. The conceptual basis on which a new jetty will impact consumer surplus values is illustrated diagrammatically in Figure 5.3. The 'value of visits' schedule for existing visitors is given by the schedule V. As visitors do not pay to access the jetty, the entire area between the schedule V and x-axis (i.e. area P^m0N^m) represents the consumer surplus benefits enjoyed by existing jetty visitors.

[2] Note that visitor expenditure for 2020/21 relates to operation for half the financial year as aquarium is assumed to open at the beginning of 2021.

Now suppose that a new jetty is constructed that improves the quality of the jetty and available attractions. In general, we can expect that the value of visit amounts will rise since consumers will anticipate additional exhibits and higher quality facilities. This improvement is represented by a shift in the "value of visits" schedule to V*. In Figure 5.3 we have drawn V* intersecting with the x-axis at N*.

The consumer surplus benefits (i.e. improved visitor experience) of the regenerated jetty are then given by the area between the new schedule V* and the old schedule V above the x-axis, or the area $P^*P^mN^mN^*$. There are two subsets of this area that are worth discussing in more detail. Area $P^*P^mN^mA$, which is clearly the larger area, represents the consumer surplus benefits for visitors who would have visited the jetty even without a new facility. Meanwhile, area N^mN^*A, the smaller of the two areas, represents the consumer surplus benefits for new visitors to the jetty, i.e. those who would not have visited without the regeneration. The contrast in the two areas illustrates an important point – namely that most of the consumer surplus benefits may potentially be derived by people who would have visited the jetty even without the construction of a new facility. Nonetheless, the gains for new visitors are no less important than the gains for existing visitors.

Figure 5.3: Consumer Surplus Associated with New Glenelg Jetty



Estimating the consumer surplus benefits for visiting a new jetty are even more challenging that estimating the consumer surplus benefits of attending an aquarium. There are very few studies available that attempt to assess the consumer benefits associated with improvements to the types of public recreation infrastructure being considered here, while to our knowledge none exist that consider improvements to marine infrastructure in an Australian context. The visitor benefits for a new jetty are likely to be much more marginal compared to those assumed for the aquarium given that the former already provides some of the current recreational benefits that would be offered by a new jetty. In the absence of any evidence of the potential visitor benefits, we have assumed that the new jetty would provide benefits equal to $1 per visit, which we consider to be a plausible estimate. Lower and higher values have been used in the sensitivity testing to assess the sensitivity of the overall results to this assumption.

In terms of estimating existing visitor numbers, market research indicates that 42 per cent of visitors to Glenelg walk on the jetty in its current form (Intuito Market Research 2013). This figure has been applied to the projected number of total annual visitors to the City of Holdfast Bay for each year of the analysis period (refer section 5.2)

to estimate existing visitor numbers. On this basis existing jetty visitor numbers to the City of Holdfast Bay are projected to rise from approximately 435,000 persons in 2015 to 542,000 in 2042. Taking into account the assumed value of visit benefit of $1 per visit, consumer surplus benefits for existing visitors are assumed to rise from $466,000 in 2021 to $542,000 in 2042.

No allowance for improved consumer surplus has been made for new visitors that may be attracted to the redeveloped jetty. Part of the justification for this is there is significant uncertainty regarding the extent to which the redeveloped jetty will boost visitor numbers to Holdfast Bay. Moreover, an allowance has already been made in the analysis for the consumer surplus benefits that would be enjoyed by people who would visit the aquarium / marine research centre. To avoid potential double counting of these visitor benefits we have elected not to include a consumer surplus benefit for new visitors that would in general be attracted by a new jetty.

5.4.3 Additional visitor expenditure

A redeveloped jetty has the potential to provide economic benefits through an increase in visitor expenditure. The redevelopment may achieve this through a number of means, including:

- encouraging existing visitors to spend more time in the Glenelg precinct;
- attracting new visitors through the provision of tourism facilities, attractions, events and a more pedestrian friendly environment;
- enhancing transport links with other tourism regions via a jetty terminal that can accommodate catamaran ferries and sea planes from major regional areas; and
- attracting higher spending international and interstate tourists through the establishment of a boutique hotel and luxury yacht facilities.

It has been argued that South Australia currently suffers from a shortage of iconic attractions (Mott MacDonald 2015). Establishing a unique jetty facility has the potential to broaden the South Australian tourism product, increasing the attractiveness of the state as a tourism destination. The coastal metropolitan location of the jetty complements existing visitor preferences and characteristics, with international visitors viewing beaches as the most appealing Australian attraction (Tourism Australia, nd), while capital cities account for the majority of visitor activity.

A regenerated jetty would also attract local residents. However, additional expenditure from such intrastate visitors is unlikely to provide a benefit from a South Australian perspective since additional spending in Holdfast Bay would displace spending from other regions of the state. Thus only additional expenditure derived from international and interstate visitors can be considered a true economic benefit from a South Australian perspective.

In trying to quantify the potential impact of a redeveloped jetty on visitor attendance there is unfortunately little available information to guide selection of appropriate parameter assumptions. Given the somewhat unique nature of the proposed Glenelg jetty development there are few studies that provide insight into potential impacts of comparable infrastructure redevelopments on visitor numbers and average length of stay. SACES did identify two Australasian studies that assessed the economic impacts of proposed waterfront redevelopments and these generally confirmed a lack of guiding evidence. An economic impact study of the proposed Scarborough Beach Precinct redevelopment in Perth, Western Australia assumed that following completion, tourism expenditure per visitor would increase by 5 per cent per annum for two years, 2 per cent per annum for two years, and then further 1 per cent per annum for 2 years (AEC Group 2011). However, the analysis offered no apparent justification for these expenditure assumptions. Meanwhile, an assessment of the economic value of a proposed redeveloped Auckland waterfront in New Zealand, following the practice of a previous analysis, made the "conservative assumption that the redeveloped Waterfront brings no additional visitors to the Auckland region" (PriceWaterhouseCoopers 2010). The rationale for this assumption is that few visitors would decide to visit Auckland due simply to a redeveloped Waterfront. A more likely scenario is that redevelopment would encourage

visitors to increase their length of stay at the waterfront, and the authors subsequently assumed that the average time that visitors spend at the Waterfront would rise by 50 per cent to 5 hours following redevelopment.

SACES also carried out a literature review and examined tourism data to try and identify the potential impact of past tourism infrastructure developments in Australia on subsequent visitor behaviour. One particularly relevant case study was considered to be the emergence of the port city of Fremantle as a tourism destination following its holding of the Americas cup in 1987. Public and private sector investment into local infrastructure in the lead up to the cup together with the staging of the event helped to rejuvenate the city which previously had a decaying image (Macbeth et al. 2012). Unfortunately historical time series data for this period is not readily available, making it difficult to identify longer term impacts on visitation due to improvements in local infrastructure. A complicating factor in this respect is that other broader global forces (i.e. separate from the holding of the cup and infrastructure redevelopment) have been identified as contributing to rise of Fremantle as a tourism destination, including increased gentrification, de-industrialisation, the emergence of service sectors such as tourism, and changes in port technology (Macbeth et al. 2012). Difficulties associated with correcting for such complex factors would in part explain the dearth of existing studies that try and asses visitor impacts resulting from improvements in existing tourism infrastructure.

Tasmania tourism data was also examined to determine whether there was any clear impact on visitor behaviour for the state resulting from the establishment of the popular Museum of Old and New Art (MONA) in 2011. Significantly, the data indicates no improvement in the average number of nights stayed for both international and domestic visitors to the Hobart and the South tourism region since the introduction of MONA.

In the absence of clear guidance toward the potential impact on visitor patterns due to a rejuvenated jetty, we have adopted the simplifying assumption that international and domestic overnight visitors to the Holdfast Bay region would increase their average length of stay by half a day. Based on visitor projections and assuming that average nights stayed remain at their 2015 averages, these assumptions imply the equivalent of a 1.2 per cent increase in total visitor nights stayed by interstate visitors and a 0.1 per cent increase in total visitor nights stayed by international visitors to Adelaide from 2020 onwards.[3] We have assumed that the additional spending would be equivalent to the average spend per visitor night for international ($97 per night) and domestic overnight visitors ($252 per night) to Adelaide in 2015 (Tourism Research Australia 2016). On this basis the new jetty is assumed to generate $16.3 million in spending from visitors in 2021 rising to $19 million in 2042.

Following the conservative approach adopted for the Auckland waterfront, no increase in visitor numbers to South Australia is assumed to occur due to construction of a new jetty. This assumption recognises that visitors to South Australia are likely to be attracted by the package of tourism products offered by South Australia rather than redevelopment of the Glenelg jetty specifically. It also reflects the reality that factors such as household incomes in origin economies, the relative prices of tourism in substitute destinations, travel costs, exchange rates, destination marketing and major events etc., are primary factors in determining the demand for tourism. In this sense establishment of the boutique hotel will help to accommodate the projected increase in international and domestic overnight tourists that is assumed over the life of the analysis period.

5.4.4 Value added from construction activity – hotel (benefit item)

It is highly likely that construction of the hotel will be financed from international or interstate investment while construction will be undertaken by local builders. To the extent that this is the case then it reasonable to include the direct value added (i.e. wages, gross operating surplus and taxes) created locally due to the construction of the hotel as a benefit from a South Australian perspective. The input output tables for Southern Adelaide indicate that value added accounts for 27 per cent of total production for the 'other construction' sector. Applying this proportion to total hotel construction costs gives a value added impact of $12.9 million spread over 3 years ($3.3 million in 2018/19, $8.8 million in 2019/20, and $0.9 million in 2020/21).

[3] The assumption regarding international visitors is conservative to the extent that the boutique hotel is specifically targeted at international visitors in the sense it addresses a market segment not currently served by the Adelaide accommodation market. It is also conservative to the extent that we have assumed that the increase in international visitor stay only applies to international visitors to Holdfast Bay whereas international visitors staying elsewhere in Adelaide would also potentially increase their length of stay.

It is anticipated the federal government funding will contribute to construction of the base jetty infrastructure. To the extent that provision of this funding does not displace any other funding, then one could make the argument that value added associated with federal government funding should be included as a benefit. It worth noting that the current borrowing environment for government is highly favourable with 10-year Australian Government Bond Yields currently around record lows, while one can make a case for greater public sector investment spending in an environment of depressed private sector activity in the current post mining boom period. However, given uncertainty over the exact funding model employed by the Australian Government and therefore the potential for displacement, we have elected to not include a value added benefit in respect of construction activity funded by the Australian Government.

5.4.5 Appreciation in house prices

Establishment of a new jetty with improved amenity and new facilities that provide new or additional recreational and leisure opportunities may prove attractive for local residents. As a consequence, demand for properties located near the jetty may increase, providing local residents with benefits in terms of increased property prices (i.e. greater wealth).

While numerous studies have been conducted that estimate the impact of proximity to water bodies on residential property prices, studies that try to assess the impact of waterfront redevelopments on residential property prices are rare. One study (Oliva 2006) was identified that assessed the impacts of waterfront development on housing prices in eastern Baltimore in the United States of America. The study did find a positive impact on prices in the study area, but that the impacts were most pronounced for properties located within a short distance of the waterfront (i.e. less than 50 metres). The results also suggest that the impact on prices from waterfront development has spread inland over time. However, as the author noted, the extent to which the rise in property prices over time was due to waterfront development versus a more general “back to the city” population movement was unknown (Olivia 2006). Furthermore, as the analysis was “limited to a specific area of Baltimore, the results of the study are not generalizable to neighbourhoods that experienced waterfront development in other cities” (Olivia 2009, p23). Another reason to suggest that the results are not transferrable to an Australian context are substantial differences in the residential property market environment between the USA and Australia. While the median home value in Baltimore is currently US$261,800 (Forbes 2016), which is equivalent to about $357,000 in Australian dollars based on the average exchange rate for the calendar year to date (RBA 2016), the median sales price house sales price for metropolitan Adelaide was $445,000 in the March quarter 2016 (Department of Planning, Transport and Infrastructure 2016). The significantly higher average sales price for Adelaide would suggest that the potential upside for residential property prices due to a new jetty are relatively lower.

On the basis of the above it is not possible to quantify the potential benefits for residents due to the establishment of a new jetty. Given the available evidence indicates that impacts are most pronounced for properties located very close to the waterfront, it is likely the potential benefits in quantitative terms would not be material to the overall results of the analysis.

5.4.6 Travel cost / time savings for those travelling to selected regional areas (benefit / cost item)

The proposed jetty redevelopment includes a terminal that would enable catamaran ferries to transport passengers to Cape Jervis, linking with existing SeaLink ferry services to Kangaroo Island (Mott MacDonald 2015). This travel option would affect travel times and costs to the extent that it substitutes for existing travel options such as road and air travel. How the jetty may ultimately affect overall travel times and costs, including whether these impacts would be positive or negative, are highly uncertain given the highly preliminary stage of the proposal.

5.4.7 Enhanced regional tourism links (benefit item)

Beyond any impacts on travel times and costs, establishment of terminals for catamaran ferries and seaplanes has the potential to enhance transport linkages to regional centres such as Kangaroo Island, Port Lincoln, Penola and Robe given Glenelg's relatively close proximity to the Adelaide airport. Enhancement of these transport linkages may facilitate increased patronage to regional centres, providing benefits to tourism businesses in these regions. The extent to which the terminals and associated transport services may boost regional tourism is highly uncertain given the preliminary nature of the proposal and a lack of comparative evidence regarding the tourism impact of similar existing facilities. In addition, provision of new transport services has the potential to displace other existing forms of travel (e.g. road). In such circumstances the impacts would arise in terms of changes in travel times and costs.

5.4.8 Enhanced facilities for marine biology students (benefit item)

The redevelopment includes a space for a marine research centre and/or aquarium facility. To the extent that the facility incorporates research activities the redevelopment would provide benefits for marine biology students in terms of access to enhanced facilities. Given the qualitative nature of such benefits and the higher degree of uncertainty surrounding the exact nature of the marine research centre / aquarium facility at this stage of the proposal, it is not possible to quantify these benefits.

5.4.9 Increased congestion (cost item)

To the extent that a redeveloped jetty attracts additional visitors to the Glenelg jetty precinct area, there may be negative impacts on visitors and local residents in terms of increased congestion in respect of pedestrian and road traffic, particularly during the busy summer period. Such congestion costs may be realised in terms of decreased amenity and/or increased travel times. Such an impact is highly speculative and it is consequently not realistic to quantify any such impacts. To the extent any such impacts arise they could be ameliorated by improvements in public transport services and refurbishment of pedestrian areas.

5.4.10 Loss of access to existing jetty during construction phase (cost item)

If the new jetty were established in place of the existing jetty, then visitors would lose access to a jetty for a period of up to 5 years as the new jetty is constructed, leading to an associated loss of visitor experience. It is possible that such losses could be avoided if the new jetty were built adjacent the existing jetty with the latter demolished after completion of the former. Given uncertainty regarding build arrangements we have made no allowance for possible lost visitor experience during the construction phase.

5.5 South Australian and Australian Government and Other Funding Stakeholders

5.5.1 Funding contribution from state government (transfer item)

Assumptions regarding the State Government's capital contribution are as described in section 5.3.3. In the benefit cost analysis these amounts are netted out by equivalent opposite amounts accruing to the City of Holdfast Bay.

5.5.2 Funding contribution from Australian government (transfer item)

Assumptions regarding the Australian Government's capital contribution are as described in section 5.3.4. In the benefit cost analysis these amounts are netted out by equivalent opposite amounts accruing to the City of Holdfast Bay.

5.5.3 Funding contribution from other funding stakeholders (transfer item)

Assumptions regarding funding contributions from other stakeholders in respect of the marine research centre and aquarium, pavilion and outdoor event space, are as described in section 5.3.5. In the benefit cost analysis these amounts are netted out by equivalent opposite amounts accruing to the City of Holdfast Bay.

5.6 Hotel operator

5.6.1 Hotel construction costs

The City of Holdfast Bay has advised that hotel construction costs are estimated to be $47.2 million. These costs would be fully covered by private business investment. The assumed timing of these costs, which are spread over three years, is summarised in Table 5.2.

5.6.2 Hotel operating costs

The hotel operator will incur operating and maintenance costs associated with the operation of the boutique hotel. These costs are assumed to be $4.4 million per annum. The rationale for this assumption is explained in the following section (5.6.3 Revenue).

5.6.3 Revenue

The boutique hotel operator will derive revenue and ultimately a profit stream from provision of accommodation, food and related services. As no existing estimates of revenue are available, we have derived custom estimates using plausible parameters that are summarised in Table 5.4.

The business case specifies that the boutique hotel will comprise approximately 50 rooms (Mott MacDonald 2015). In terms of average room occupancy, ABS data indicates that hotels and resorts in Adelaide Tourism Region in 2014/15 had an average occupancy rate of 73 per cent, while "luxury" hotels and resorts had an average occupancy rate of 80 per cent (ABS 2015).[4] The City of Holdfast Bay has advised that it is positioning the hotel in the upper to luxury segment of the accommodation market (i.e. $400 to $500 per night) in order to minimise displacement from existing providers. As the average takings per room night occupied for existing luxury hotels and resorts in the Adelaide Tourism Region is well below the target price range for the boutique hotel advised by City of Holdfast Bay, we have taken a conservative approach and assumed a room occupancy rate of 65 per cent (i.e. relatively lower compared to existing luxury hotels). On this basis there are assumed to be 11,900 occupied room nights per year.

We have erred toward the lower end of the advised room price scale and assumed an average room price of $400. As we have already included additional visitor expenditure for international visitors elsewhere in the analysis at an assumed spend of $97 per night (refer section 5.4.3), we have excluded the latter figure from the room price in order to avoid double counting. Thus an average price of $303 per room has been assumed for the analysis. On the basis of this assumption total accommodation revenue is estimated to be $3.6 million per year.

Table 5.4 Parameter assumptions for boutique hotel benefits and costs

Parameter / item	Value
Number of rooms	50
Occupancy rate (per cent)	65
Price per room ($)	303
Total occupied nights	11,863
Total accommodation revenue ($)	3,594,338
Proportion of income from accommodation (per cent)	66
Total income per year ($)	5,445,966
Gross operating surplus ($)	1,028,174
Expenses ($)	4,417,792

The boutique hotel would not only earn revenue from accommodation services but also food and beverage sales, and provision of other services (e.g. rental of facilities, value added entertainment services). A 2006/07 ABS (2008) survey of accommodation service providers indicates that takings from the provision of accommodation accounted for two-thirds of total income. On this basis scaling up the estimated total accommodation revenue of $3.6 million gives a total hotel revenue estimate of $5.4 million per year.

[4] Data for luxury hotels and resorts excludes data for the March quarter due to data not being published.

As the gross revenue estimate of $5.4 million has been included in the analysis from 2021 onwards, an allowance on the cost side has to be included to allow for hotel operating and maintenance costs. The 2011/12 input output table for Southern Adelaide indicates that expenses related to purchases from intermediate suppliers, labour, taxes and imports accounted for 81 per cent of total production for the accommodation services sector. On this basis annual expenses are estimated to be $4.4 million. This estimate implies an annual gross operating surplus (i.e. profit) for the hotel of approximately $1 million.

5.6.4 Residual Asset Value

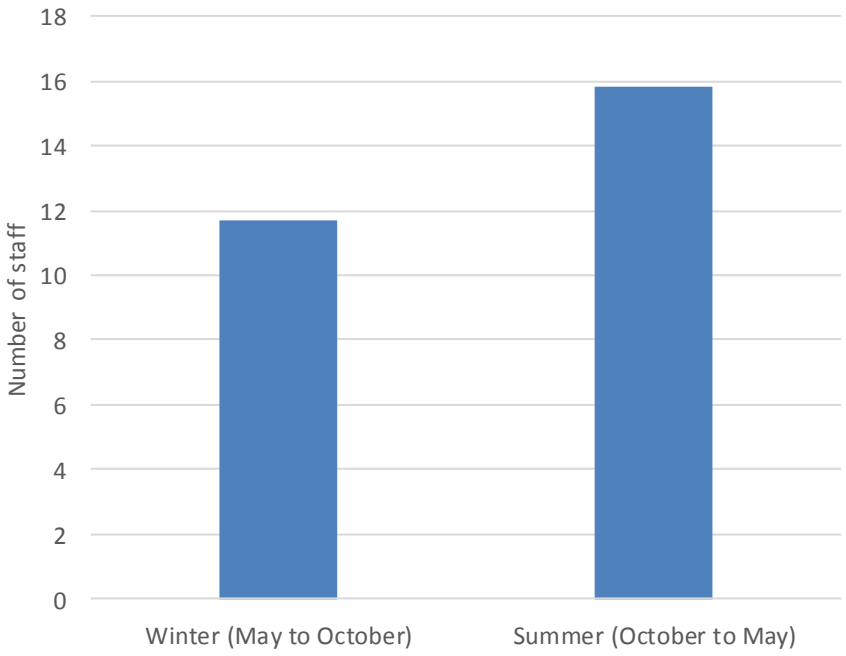
A residual asset value is included in the final year of the analysis to recognise the remaining useful economic life of the hotel facilities at the end of the analysis period. The residual asset value has been estimated using a straight line depreciation method based on the remaining useful life of the new facilities at the end of the analysis period and the initial construction cost. Unfortunately no formal estimate of asset life was available for the hotel. As an alternative, information published by the LGA (Tonkin Consulting 2014) indicates that councils typically adopt useful lives of 60 to 80 years for 'building – structures'. We have adopted a useful life at the lower end of this scale on the basis that building structures located on a jetty may face more wear and tear given relatively greater exposure to weather elements. On the basis of these assumptions the residual value of the hotel facilities is assumed to be $31.4 million. As this value is entered into the final year of analysis it is much smaller in present value terms.

5.7 Businesses

5.7.1 Reduced employee transition costs

Given the important role played by tourism in the Glenelg precinct along jetty road, economic activity in the region is relatively seasonal with business conditions quite buoyant during the warm summer period but somewhat dour during the colder winter months (Mott MacDonald 2015). A survey of 24 retail business in the Glenelg jetty road district indicates that average employment during the summer half of the year was on average 35 per cent higher compared to the winter half (15.8 compared to 11.7 employees) – refer Figure 5.4. Of these businesses, 88 per cent indicated that takings were higher in the summer period with takings on average 21 per cent higher for the summer half.

Figure 5.4: Average Employment for Jetty Road Precinct Retail Business



Source: City of Holdfast Bay, unpublished data.

A new Glenelg jetty has the potential to smooth the current seasonal nature of business activity in the jetty tourism precinct. Apart from providing greater shelter for pedestrians during winter months, the provision of facilities such as the pavilion to host public events and attractions such as the aquarium / marine research centre would help to attract visitors during the winter period. To the extent that business activity can be smoothed through the year then businesses may be able to better maintain employment levels during the winter period, reducing employee turnover. Such an outcome would provide benefits to employers in terms of reducing recruitment and training costs for new employees.

The costs of recruiting and training new employees has been previously estimated by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) in respect a replacing a deceased worker. The estimated cost of this was $6,422 per prematurely deceased employee in 2006 values (BITRE 2009). Converting to 2016 values using the change in the CPI (ABS 2016b) gives a unit cost of $8,074. It is likely that recruitment and training costs for Jetty road retail businesses are probably lower than this estimate given that many retail positions would require relatively low formal training requirements.

While it is possible to quantify the recruitment and training costs associated with the loss of an employee, it is not realistic to estimate the aggregate avoided costs associated with a new jetty given cascading levels of uncertainty in terms of how visitor expenditure through the year would change, how this smoothing would translate into turnover in employment, and the nature of those positions affected (e.g. skill and formal knowledge requirements).

5.8 Results of the Benefit Cost Analysis

The results of the economic analysis are summarised in Table 5.5. It shows, by stakeholder, the incremental costs and benefits of the proposed jetty redevelopment relative to the Base Case scenario, as well as the whole of community incremental costs and benefits. It should be noted that due to the early nature of the proposal and associated data limitations, the allocation of benefits and costs by stakeholder are only approximate and should not be interpreted literally. For instance, benefits to the community in terms of additional visitor expenditure would in large part be captured by businesses.

The economic analysis shows that proposed redevelopment has a significant quantified incremental net benefit relative to the Base Case scenario of $37.2 million. Total incremental quantified costs (i.e. excluding transfers) for the redevelopment scenario are $274 million higher compared to the base case scenario, while total incremental benefits are $312 million higher. This gives the redevelopment scenario an incremental benefit cost ratio of 1.1 relative to the base case.

While the redevelopment scenario has a positive net benefit relative to the base case scenario, there are also a number of potential benefits that were unquantifiable for the redevelopment scenario. These non-quantified benefits include:

- enhanced tourism links;
- appreciation in house prices for local residents;
- reduced employee transition costs for business; and
- enhanced facilities for marine biology students.

There are also non-quantified impacts in respect of changes in travel times, which may be positive or negative, and potential unquantified negative impacts in terms of increased congestion for visitors and local residents and loss of access to the jetty during the construction phase. Readers and decision makers need to bear in mind the range of unquantified benefits and costs when interpreting the results of the analysis.

The most significant incremental benefits for the redevelopment scenario relative to the base case are in terms of additional visitor expenditure from international and interstate tourists ($150 million), the value of visits to the aquarium / marine research centre ($66 million), revenue earned by the hotel operator ($47 million), and residual

asset value of the jetty and hotel assets at the end of the analysis period (total value of $32 million). The large visitor benefits attributed to the aquarium highlights the importance of incorporating a distinct visitor attraction on the jetty that has widespread community appeal.

In general the results of the cost benefit analysis are sensitive to variations in the assumptions within the bands considered. The redevelopment scenario has a significantly larger positive net benefit relative to the base case scenario under several alternative parameter assumptions (i.e. lower discount rate, lower capital costs, and increased visitation) and has a significant negative net benefit under other alternative parameter assumptions. The results of the sensitivity testing are discussed further in section 5.9.

Table 5.5 Results of the Economic Analysis
Net Benefits of Redevelopment Relative to Base Case Over 25-year Horizon ($'000)

	Base Case	Redevelopment	Incremental change relative to Base Case
The City of Holdfast Bay			
CAPITAL COSTS			
Jetty	56	107,332	107,277
Aquarium	0	67,247	67,247
Pavilion	0	15,699	15,699
Outdoor event space	0	4,037	4,037
Total City of Holdfast Bay Capital Costs (excluding sunk)	56	194,315	194,259
OPERATING COSTS			
Jetty	80	3,056	2,976
Total Annual Operating Costs	80	3,056	2,976
Total costs (excluding sunk)	136	197,371	197,235
BENEFITS (REVENUE / COST SAVINGS)			
Funding contribution from State government (transfer)	0	53,666	53,666
Funding contribution from Federal government (transfer)	0	53,666	53,666
Funding contribution from private and agency sources (transfer)	0	86,983	86,983
Rates revenue (hotel)	0	2,248	2,248
Residual asset value	218	26,234	26,015
Total City of Holdfast Bay Benefits	218	222,797	222,579
City of Holdfast Bay Net Benefits (Costs)	82	25,426	25,344
Community			
COSTS			
Increased congestion	0	nq	nq
BENEFITS			
Improved visitor experience – existing visitors	0	4,300	4,300
Value of aquarium visits (intangible benefits)	0	65,675	65,675
Additional interstate and international visitor expenditure	0	149,854	149,854
Value added from construction activity	0	10,706	10,706
Appreciation in house prices	0	nq	nq
Travel cost / time savings	0	nq	nq
Enhanced regional tourism links	0	nq	nq
Enhanced facilities for marine biology students	0	nq	nq
Total Community Benefits	0	230,536	230,536
Community Net Benefits (Costs)	0	230,536	230,536
South Australian, Australian Government and Other Funding Stakeholders			
COSTS			
Funding contribution from State government (transfer)	0	53,666	53,666
Funding contribution from Australian government (transfer)	0	53,666	53,666
Funding contribution from private and agency sources (transfer)	0	86,983	86,983
Total Government Costs	0	194,315	194,315
Government Net Benefits (Costs)	0	(194,315)	(194,315)
Hotel Operator			
COSTS			
Hotel construction costs	0	39,016	39,016
Operating costs	0	38,204	38,204
Total Hotel Operator Costs	0	77,221	77,221
BENEFITS			
Revenue	0	47,096	47,096
Residual asset value	0	5,794	5,794
Total hotel operator benefits	0	52,889	52,889
Hotel Operator Net Benefits (Costs)	0	(24,331)	(24,331)
Businesses			
BENEFITS			
Reduced employee transition costs	0	nq	nq
Total Businesses Benefits	0	nq	nq
Businesses Net Benefits (Costs)	0	nq	nq
TOTAL PROJECT COSTS (Excluding Transfer)	**136**	**274,592**	**274,456**
TOTAL PROJECT BENEFITS (Excluding Transfers)	**218**	**311,907**	**311,689**
NET PROJECT BENEFITS (COSTS)	**82**	**37,315**	**37,223**

Note: nq = not quantified.

5.9 Sensitivity Analysis

The purpose of the sensitivity analysis is to illustrate the sensitivity of the results to the key assumptions that underpin the analysis. The sensitivity tests reported here vary key assumptions one by one. Table 5.6 shows the net benefit of the base case, the redevelopment scenario, and the incremental net benefit for the redevelopment scenario relative to the base case under alternative assumptions.

The results of the benefit cost analysis are sensitive to variations in the assumptions within the bands tested. For instance, the redevelopment scenario has a negative net benefit relative to the base case under the assumptions of a 10 per cent discount rate rather than 7 per cent; the increased length of stay for international and interstate visitors due to the redevelopment is 0.25 days rather than 0.5 days; there is no increase in length of stay for interstate visitors; and effectively breaks even with the base case (i.e. has a small negative net benefit) if capital costs were 20 per cent higher. A negative net benefit under higher discount rate assumption reflects that the costs associated with the project are front-loaded whereas benefits in terms of increased visitor expenditure, improved visitor experience etc., are realised as a relatively constant stream over the analysis period, and a higher discount rate consequently gives less weight to these future benefits. Meanwhile, the results are clearly sensitive to assumptions regarding additional visitor expenditure, which in part reflects that these are the single largest benefit item. In is important to note that assumptions regarding impacts on visitor expenditure are somewhat speculative given the lack of clear evidence regarding the scale of impact on visitor behaviour resulting from these types of redevelopment project.

Table 5.6 Results of the sensitivity testing assessing the impact on net project benefits (costs)
Net present values over a 25 year analysis period ($'000, 2016 values)

Sensitivity testing Economic analysis	Base Case	Redevelopment	Incremental change relative to Base Case
Central scenario	82	37,315	37,233
Alternative discount rates			
4 per cent	279	159,872	159,594
10 per cent	(7)	(31,114)	(31,107)
Capital costs			
20 per cent lower	82	75,769	75,687
20 per cent higher	82	(1,138)	(1,220)
Redeveloped jetty operating costs			
20 per cent lower	82	37,925	37,843
20 per cent higher	82	36,705	36,623
Residual Asset Value			
20 per cent lower	38	30,910	30,871
No residual asset values	(136)	5,288	5,424
Improved existing jetty visitor experience			
$0.5 per visit (i.e. 50 cents lower)	82	35,165	35,083
$1.5 per visit (i.e. 50 cents higher)	82	39,465	39,383
Aquarium visitor numbers			
20 per cent lower	82	24,180	24,098
20 per cent higher	82	50,450	50,368
Visitor to catchment population ratio of 0.09	82	16,693	16,611
Visitor to catchment population ratio of 0.15	82	46,729	46,647
Additional visitor expenditure			
Increase length of stay is 0.25 days	82	(37,612)	(37,694)
Increase length of stay is 0.75 days	82	112,242	112,160
Increased length of stay for international visitors is 1.0 days	82	42,074	41,992
No increase in length of stay for interstate visitors	82	(107,781)	(107,863)
Average price per room for boutique hotel			
Price per room is $500 per night	82	40,250	40,168
Price per room is $600 per night	82	43,184	43,102

The remainder of other parameter variations do not change the conclusion that the redevelopment scenario has a positive net benefit relative to the base case scenario.

In considering the results of the sensitivity analysis it needs to be remembered that a number of potential impacts, predominantly benefits, have not been quantified.

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