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PROJECT

Spring Bay Harbour Expansion & Maria Island Ferry Terminal – Economic & Financial Assessment

CLIENT

Glamorgan Spring Bay Council

DATE

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1. Introduction

1.1 Background

This Report has been prepared to present the findings of a range of economic and financial analyses, which have been completed for Spring Bay Harbour Expansion and Maria Island Ferry Terminal, Triabunna, Tasmania.

The findings specifically relate to the preparation of an overall Business Case with two key investment components. These are to support and justify public sector investment in (i) a new public pier on the southern side of the existing pier relics and (ii) in the preservation of the existing historic pier remnants, for future heritage tourism and for Bridport's historic legacy.

Burbury Consulting has prepared the infrastructure drawings, project management plan and infrastructure costings.

1.2 Economist & Financial Analysis Project Advisor

Dr Robert (Bob) Noakes is an experienced project/infrastructure economist and financial analyst with more than 40 years experience in Australia and in more than 30 countries in project planning and development studies, with major emphasis on ports, ferry terminals, roads and highways/bridge infrastructure.

He has an extensive background in preparing economic impact assessments and feasibility studies for major projects, market research and user forecasting for project preparation, in supply chain least-cost analysis, in demand forecasting for industrial activity, in scenario planning to develop alternative potential 'growth' paths for Local/Regional/State governments, in multi-criteria analysis and ranking of site options, and in the preparation of Business Cases based on international best practice cost-benefit analysis techniques.

He has worked on a number of local/regional economic development studies involving Triple Bottom Line (TBL) assessments and in identifying the socio-economic impacts of proposed infrastructure development projects, particularly regional and remote island areas and including marine project infrastructure.

A Curriculum Vitae of Dr Noakes is attached to this report.

1.3 Submission Objectives

This submission to the Commonwealth Government Building Better Regions Fund (BBRF) focusses on the request for part funding of the Spring Bay Harbour Expansion and Maria Island Ferry Terminal Project, developed by Glamorgan Spring Bay Council (GSBC).

The proposed application for funding support covers four (4) phases of development, from 2018/19 to 2037/38. These may be summarised as:

- (i) Business Case and Approvals
- (ii) Port Entrance Development with Ferry Terminal
- (iii) Commercial Precinct Development
- (iv) Outer Harbour Development



A broad range of economic and financial benefits and impacts are expected to be generated from the investment program. These have been identified, quantified and monetised in the attached tables. They cover:

- **Increased local employment** (direct and indirect) over both the period of construction and for the 20-year life of the Project (to 2037/38).
- **Stimulus to local economic growth** during and after completion, in terms of increased tourism activity and local expenditures, commercial redevelopment of the existing fishing sector, and expansion of associated aquaculture activities, increased marine servicing/slipway investment and revenue generation.
- **Building more economically-robust local and regional communities** through increased employment opportunities, youth job training, retention of youth populations, increased local revenues from tourism activities, and new investment in recreation/tourism/commercial fishing activities.



2. Economic Analysis

2.1 Economic Justification

A detailed economic analysis has been completed to identify the nature of the economic impacts of the proposed program of development and its likely sustainable economic viability.

Based on Council of Australian Government (COAG) and Infrastructure Australia (IA) Investment Guidelines for public sector infrastructure investment proposals, a detailed conventional discounted cash flow (DCF) analysis has been undertaken.

All costs and benefits were estimated in constant 2018/19 prices. No GST or other taxes or subsidies were included. A discount rate of 6% was utilised for the 20-year investment period of 2018/19 to 2037/38. A residual value of the capital assets was included as a benefit in the 20th year, as the technical lives of the new assets will extend well beyond 20 years.

To assist in the development of the economic appraisal, a detailed analysis of likely employment/job creation outcomes was undertaken. Tables 1 and 2 provide a detailed account of the likely range and value of full-time equivalent (FTE) jobs likely to be created, both directly and indirectly, during both the construction phases and the subsequent operation of the port facilities, following their commissioning.

A total of 146 FTE positions is forecast for the Project. A further 37 positions are forecast in terms of indirect local employment generation.

An important aspect of the job creation estimation has been the identification of the likely size of the Commonwealth Government taxation contribution from the employment levels forecast to be generated. Over the 20-year life of the Project, the net present value (at 6%) of the annual PAYE contribution, over the life of the Project, has been estimated at \$1.85 million.

2.2 Economic Costs

The total estimated economic cost for the development program has been set at \$20.029 million. This is summarised in the detailed Project Management Plan and covers eight (8) interconnected stages. All GST components have been deleted.

Additional annual landside operating costs associated with lighting/water utilities have been estimated. Annual costs of maintenance of all assets, for the life of the Project, have been estimated, covering both manpower and materials. All project costs are summarised over the 20-year period in Table 3, which reports the Cost-Benefit Analysis results.

2.3 Economic Benefits (Merit Criterion 1)

The range of likely economic benefits has been found to be extensive. The expected economic benefits cover the following:

- Increased numbers of direct and indirect jobs (estimated as FTEs and in \$s).
- Increased numbers of new businesses and expansions in existing businesses (covering tourism, recreation boating, commercial fishing (home porting), fish processing and aquaculture (new and expansion of existing activities), new storage facilities adjacent to the new wharf facilities, expanded and new marina assets and related on-wharf businesses (cafes, chandlery, fuel, marine engine support, marine telecoms/navaid equipment and servicing).
- Stimulus to local existing suppliers of commercial fishing and recreational boating equipment, rather than direct imports from Hobart and Melbourne.



- Achievement in economies of scale associated with the on-wharf handling, processing, packaging and transport to markets of seafood products. New aquaculture processing is expected with the expansion of the commercial fishing facilities on-shore.
- Opportunities for indigenous persons (particularly the youth) to be involved both in construction and in the longer term sustainable operations of commercial businesses, and to develop on-the-job work skills.

Tables 1 and 2 relate to the size and the value of employment generation benefits and Table 4 summarises specific aspects of economic growth to be expected after Project completion.

2.4 Social Benefits (Merit Criterion 2)

A broad range of social benefits can be foreseen from the program of development. Many of these benefits, whilst they are intangible, are considered highly significant as outcomes over the Project's life. These include:

- Developing Triabunna as a more attractive tourist and resident destination (a vibrant stopping point for tourists moving along Tasmania's east coast and for residents to migrate to, from elsewhere in Tasmania [particularly associated with the expanded commercial fishing sector] and from Victoria [also associated with the home port of commercial fishing boats]).
- The Project replaces the former export facility for wood chips and thus represents a most attractive form of regional and local 'renaissance'. Prior to the commencement of the Project, Triabunna's social amenities were in steep decline – unemployment was a major community problem. The quality of life for Triabunna residents has already begun to improve; the best is yet to come.
- The Project can be expected to have a sound future, long term over the life of the Project. Major social gains are expected to continue to grow in size.
 - Out-migration will have ceased.
 - In-migration is expected to accelerate, with new community centres and increased local housing, schools, open recreation areas, new water-based sports and recreation activities.
 - New forms of employment and related job training.

2.5 Project Delivery (Merit Criterion 3)

The proposed project will be delivered through a range of scenarios involving strategic ownership of the major port and coastal areas as retained public land by GSBC and leased for the major infrastructure including:

- Ferry terminal;
- Marine servicing precinct;
- Marina berths; and
- Commercial building and port precinct.

GSBC has proven experience with similar activities with the implementation of the initial port redevelopment works that was undertaken in stages and under the project and construction management of Burbury Consulting.

Burbury Consulting has managed and implemented all the major marina and ferry terminal works in Tasmania (Australia and overseas) including the following key marine projects:

- Derwent Sailing Squadron marina extension (\$6.5m);
- Margate Marine Precinct marina and hardstand commercial development (\$12m);



- Triabunna port and marina development (\$5m);
- Prince of Wales Bay Marina Precinct (\$6m);
- Waikawa (NZ) Marina Development (\$25m); and
- Devonport Port East Berth Reconfiguration Project Management (\$50m); and
- Augusta Boat Harbour marine infrastructure (\$12m).

GSBC will partner with Burbury Consulting in providing the project and construction management services for the project development encompassing the following phases:

- **Planning:**
 - Project planning, controls,
 - Initial approvals have been initiated for the development including coordination with Crown Land Services and strategic development approvals through GSBC;
 - A project program, budgeting and implementation plan has been prepared and including (Project Management Plan);
 - Initial site investigations for surveys, environmental assessments and design development is already underway;
- **Implementation:**
 - The project will be implemented in stages to suit construction sequencing as well as key market and demand requirements;
 - Design development, tendering, procurement and construction packages of works;
 - Integration of key construction contracts and construction packages to suit stages and like works (including utilising the experiences encountered from Triabunna marina and port development completed 2014-2018)
 - Project review of financials against the planning and budgeting as well as investment returns over the staged development program;
- **Operation:**
 - GSBC will manage and operate the marina berths similar to the current operations of the Triabunna port;
 - Precincts will directly be leased to operators including the ferry terminal, marine servicing precinct, commercial buildings and outer harbour marina;

The approach to the project management is further described in the accompanying Spring Bay Harbour Project Management Plan (PMP).

2.6 Impact of Grant Funding (Merit Criterion 4)

The grant will leverage investment for the following direct components to the proposed project:

- Private investment for the ferry operator and hospitality services;
- Private investment into the port commercial building development;
- Private investment into the marine precinct zone to develop marine servicing and maintenance for expanded recreational and commercial vessels providing a strategic marine servicing and boat maintenance and building centre on the east coast of Tasmania servicing both commercial fishing and aquaculture industry;
- Public investment committed for the commercial wharf (Marine & Safety Tasmania);



- Private investment into the commercial precinct including fish processing and ancillary services; and
- Private investment into the outer harbour marina development.

Indirect investment related to the harbour development will include:

- Increased aquaculture investment in the region with expanded port facilities to support larger vessels;
- Increased ferry and tourism based marine investment with improved terminal, parking and visitor experiences;
- Increased tourist and visitor access with expanded port and marina services including marine service precinct, public wharf expansion, fuelling, waste management and connection to Triabunna;



3. Economic Results

The proposed investment Project is expected to be economically viable over the 20-year period. **An economic internal rate of return (EIRR) of 23.42%** has been estimated (see Table 3).

Other economic criteria supporting the economic viability include:

Net Present Value (NPV)	:	\$8.69 million
Benefit-Cost Ratio (BCR)	:	1.56

Table 3a provides a detailed explanation of all assumptions relied upon for the analysis.

3.1 Sensitivity Testing

A range of sensitivity testing was undertaken to examine the future viability of the investment under a range of adverse conditions. All sensitivity tests were found to be positive. All tests resulted in EIRRs greater than the cut-off/discount rate of 6%. The most adverse test (a combined increase in capital investment costs of 20% and a simultaneous decrease in total benefits of 20%) resulted in an EIRR of 7.77% (see Table 3b).

Table 1: Job Creation for Project Completion and Sustainable Growth

		No. of			
		Employees	Full-Time		
		(Direct and	Equivalent		Youth
		Indirect)	(5%)	Indigenous	(16-24)
Employment Data					
A. Direct Employment During Construction (FTE)					
	> On-site day labour	15	15	2	4
	> On-site installation concrete panels/steel fabrication	6	3		
	> Concrete pouring/screening/finishing	6	3		1
	> Concrete delivery - 2 trucks	4	1		
Indirect	> Quarry (gravel for concrete)	4	1		
	> Dredging/barge	8	4		1
	> Resident engineering supervision	1	1		
	> Council Management/Staff supervision	2	2		
Indirect	> Food Trucks/Preparation	2	1		
	> Government Inspections - Hobart/region	2	1		
Indirect	> Fuel/materials delivery/truck and depot	4	2		1
	Sub-total: Direct	44	30	2	6
	Indirect	10	4		1
B. Long Term Job Creation (FTE)					
(i) Wharves					
	> Council maintenance	4	2		1
	> Maintenance dredging	8	2		
	> Marine services	8	4		
	> Fish processing/mussel smoking	38	28	2	8
	> Restaurants	6	6		3
	> Seafood market	16	16	1	4
Indirect	> Home porting of vessels (fishing): 3 per vessel	15	15		3
	> Boat maintenance (each year: 15)	4	1		1
	> Slipway facilities/marine servicing	6	6		2
(ii) Ferry Terminal					
	> Ferry terminal building staff	4	2		1
	> Chandlery	2	2		
Indirect	> Second ferry/crew/maintenance/sales	10	10		2
	> Charter boat hire (4 boats)	12	12		4
	> Fuel distribution - trucks/depot/bulk	6	3		1
(iii) Aquaculture					
	> Tassal/Heron/Others	20	20		6
(iv) Boatels (25)					
	> Cleaners/Admin	6	6	1	2
	> Food/beverage	2	2		1
(v) Maritime Museum		6	6	1	1
(vi) Aquaculture School					
	> Fish farms	4	4		1
	> Oyster Farming	6	6		1
	> Salmon processing	4	4		1
	> Research	2	4		1
(vii) Commercial Precinct					
	> Storage	2	2		
	> Marine engines/comms/navaids	2	2		
(viii) Outer Harbour/Private Marina					
	> Small cruise ship berth	2	2		
	> International investment	6	4		
	Sub-total: Direct	176	136	5	39
	Indirect	25	25		5

Table 2: Value of Full-Time Employment [FTE] (Direct and Indirect): 2018/19 - 2024/25 - 2037/38

				Total	
	Total		Gross	Commonwealth	Net
	Employment		Salaries ^{3/}	Tax ^{4/}	Local
	(FTE)		(Minimum)	Contribution	Benefit
A.	Construction:				
	Direct ^{1/}	30	\$2.04 million	\$571,200	\$1.469 million
	Indirect ^{2/}	5	\$250,000	\$70,000	\$180,000
B.	Long Term ^{5/} : Full Development Over 7 Years				
	Direct	146 ^{6/}	\$8.03 million	\$2.248 million	\$5.782 million
	Indirect	37 ^{7/}	\$1.85 million	\$518,000	\$1.332 million
C.	Long Term ^{8/} : After Full Development to 2037/38				
	Direct	136	\$7.48 million	\$2.094 million	\$5.31 million
	Indirect	25	\$1.25 million	\$350,000	\$900,000
^{1/}	Assumed at \$68,000 p.a. average employee.				
^{2/}	Assumed at \$50,000 p.a. average employee.				
^{3/}	Covers the four (4) Phases of Development with concurrent activities for individual stages over the planned development period of 7 years (2018/19 - 2024/25).				
^{4/}	Assumed at 28% (average deduction).				
^{5/8/}	Long term is defined as covering construction/building/facilities, development and commissioning of all components, and for sustainable operations to 2037/38.				
^{6/}	Assumed at \$55,000 p.a. average employee.				
^{7/}	Assumed at \$50,000 p.a. average employee.				
Note: The Net Present Value (NPV) of all PAYE taxation payments is estimated for the period 2018/19 to 2037/38 to be \$1.85 million (6% discount rate).					



Table 3: Economic Analysis of Spring Bay Harbour Expansion and Marina Island Ferry Terminal Investment: Constant Prices (2018/19)
(2018/19 to 2037/38): ('000s)

Economic Costs																				Economic Benefits															
		Capital ^{1/}				4/		Phase 1:			Phase 2:			Phase 3:			Phase 4:																		
						Employment		Recreation/Tourism/Commercial			Recreation/Tourism/			Recreation/Tourism/Commercial			Tourism																		
						(All 4 Phases)		5/		6/		Additional					Aquaculture/				12/		Marina Berth		Cruise										
Year	Investment/	Additional	Maintenance		Net Value of	PAYG	Northern	Northern	Day Trip	Ferry Revenues ^{8/}	Net ^{9/}		10/	Fish ^{11/}	Storage	Fees Access	Ship ^{14/}		Net																
Ended	Expansion	Operating	(All/Assets	Total	Employment	Tax	Marina	New Marina	Visitor ^{7/}	Net	GSBC	Slipway	Wharf	Processing	Services	(International	Visits/	Total	Benefit																
June	(Phases 1-4)	(Landside)	Facilities) ^{3/}	Costs	Generation	Contribution	(Wet Berths)	Businesses	Expenditures	Fares	Pax Fees	Rentals	Rental	Rental	Rental	Financing) ^{13/}	Berths	Benefits	Stream																
1	2019	155.00		155.00														0.00	-155.00																
2	2020	2,225.00	12.00	98.00	2,335.00	1,460.50	0.00	371.00	4.00	105.85		18.00		36.00				1,995.35	-339.65																
3	2021	3,833.00	18.00	98.00	3,949.00	1,460.50	0.00	477.00	6.00	144.05	0.00	44.20	18.00	80.00	60.00	12.00		2,301.75	-1,647.25																
4	2022	2,438.00	18.90	98.00	2,554.90	1,460.50	0.00	583.00	8.00	294.00	0.00	55.20	18.00	90.00	63.00	18.00		2,589.70	34.80																
5	2023	3,842.00	19.85	98.00	3,959.85	1,460.50	0.00	612.15	8.40	302.82	0.00	66.25	18.90	95.00	66.00	18.00	20.00	24.80	2,692.82	-1,267.03															
6	2024	2,751.00	20.84	98.00	2,869.84	1,460.50	0.00	642.75	8.82	311.90	0.00	66.25	18.90	95.00	70.00	18.00	23.00	24.80	2,739.92	-129.92															
7	2025	2,751.00	21.88	98.00	2,870.88	1,460.50	0.00	674.90	9.26	321.26	0.00	66.25	18.90	95.00	70.00	18.00	25.00	24.80	2,783.87	-87.01															
8	2026		22.97	132.00	154.97	477.70	0.00	708.64	9.72	330.90	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	1,850.91	1,695.94															
9	2027		24.12	132.00	156.12	477.70	0.00	744.07	10.21	340.83	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	1,896.76	1,740.64															
10	2028		25.33	132.00	157.33	477.70	0.00	781.28	10.72	351.05	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	1,944.70	1,787.37															
11	2029		26.59	132.00	158.59	477.70	0.00	820.34	11.26	361.58	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	1,994.83	1,836.23															
12	2030		27.92	132.00	159.92	477.70	0.00	861.36	11.82	372.43	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	2,047.26	1,887.34															
13	2031		29.32	132.00	161.32	477.70	0.00	904.42	12.41	383.60	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	2,102.08	1,940.76															
14	2032		30.79	132.00	162.79	477.70	0.00	949.65	13.03	395.11	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	2,159.44	1,996.66															
15	2033		32.33	132.00	164.33	477.70	0.00	997.13	13.68	406.96	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	2,219.42	2,055.10															
16	2034		33.94	132.00	165.94	477.70	0.00	1,046.98	14.37	419.17	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	2,282.17	2,116.23															
17	2035		35.64	132.00	167.64	477.70	0.00	1,099.33	15.09	431.75	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	2,347.82	2,180.18															
18	2036		37.42	132.00	169.42	477.70	0.00	1,154.30	15.84	444.70	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	2,416.49	2,247.07															
19	2037		39.29	132.00	171.29	477.70	0.00	1,212.02	16.63	458.04	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	2,488.34	2,317.05															
20	2038		41.26	132.00	173.26	477.70	0.00	1,272.62	17.46	471.78	0.00	66.25	19.90	95.00	70.00	18.00	30.00	24.80	2,569.16	2,395.91															
Residual Value: 30%		\$5.650 million ^{16/}															Economic Internal Rate of Return =		23.42% ^{15/}																
																	Net Present Value [NPV] (Benefits) @ 6% =		\$24,100.21 ^{15/}																
																	NPV (Costs) @ 6% =		\$15,409.48 ^{15/}																
																	NPV @ 6% =		\$8,690.74 ^{15/}																
																	Benefit-Cost Ratio (BCR) =		1.56 ^{15/}																



Table 3a: Footnotes for Table 3									
1/	Based on a total cost of construction of \$20.09 million (no GST). Excludes existing construction cost of \$5.8 million. Four interconnected phases of development are planned for the period 2018/19 to 2037/38.								
2/	Assumes annual additional lighting, water utility costs for all public facilities, and sweeping/cleaning of all landside areas (annual growth of 5%).								
3/	Based on staffing levels by GSBC. Average annual maintenance salary of \$60,000.								
4/	Based on employment levels estimated and reported in Tables 1 and 2. Assumes all PAYE taxes and costs of housing are deducted from salary levels to yield net revenues available for spending in the local economy. The NPV of taxation revenues for the 20-year period is estimated at \$1.85 million.								
5/	Assumes annual minimum marina rental fees of \$4,000 to \$5,900 (small recreational berths to larger commercial berths). Total new berths of approximately 76. Assumes a full take-up of berths after commissioning and an escalation of fees of 5% p.a.								
6/	Based on net rental incomes generated by new marina-related businesses (café, fuel sales, chandlery).								
7/	Based on additional induced day visitor spending at the new facilities. Assumes 50 vehicles per day during weekends and 20 vehicles per day during weekdays, growing from 3,528 vehicles in Year 1 to 9,800 vehicles in Year 3. Assumes an average vehicle/family expenditure per visit of \$30.00. Visitor expenditures are assumed to grow at 3% per annum.								
8/	Assumes the operation of regular Maria Island ferry services from the dedicated wharf. Summer services (5 days/week) over 5 months. Winter services (3 days/week) over 7 months. GSBC to receive berthage/wharfage fees of \$4 per passenger. Ferry load factors assume to range from 40% to 60%.								
9/	Annual rental fees to GSBC from utilisation of two slipways (an additional slipway from the current situation).								



Table 3a: Footnotes for Table 3 (continuation)

10/	Rental of landside storage capacity at the new commercial precinct.								
11/	Rental of land for new wild fish processing/aquaculture processing and salmon production. Includes rental of site for an aquaculture school/research facility(s), oyster production/processing.								
12/	Assumes the availability of landside storage capacity (for dry stacking of yachts, marine craft, commercial fishing assets).								
13/	Based on long-term planning of additional wet berths within an outer/southern marina. Assumes that international tourists/short-term residents will utilise the waterfront for yacht berths, fish restaurants/water-based club/recreation facilities. Planning allows for 100 to 120 yacht/marine craft berth slots.								
14/	Provision of berth capacity of small cruise ship tender arrivals (ferrying of 50 to 60 pax ashore for 4 to 5 small cruise ship moorings per year).								
15/	Conventional project investment criteria, as required, at the Commonwealth Government/State/local level. Assumed discount rate/economic cost of capital of 6%.								
16/	Residual or salvage value based on a straight line depreciation of 30% over 20 years for the marine infrastructure investment (excludes project design/engineering costs, demolition and dredging costs).								

Table 3b: Sensitivity Testing of Results of Economic Analysis:		
Proposed Development of Spring Bay Harbour		
		%
Base Case:		23.42
What if:		
(i)	Increase in capital investment/expansion costs of 20%	14.55
(ii)	Reduction of Day Visitor Expenditures of 20% (Phase 1)	21.92
(iii)	Reduction of GSBC Ferry Fees of 20%	23.13
(iv)	Reduction of Wharf Rental Revenues by 50%	22.35
(v)	Reduction of Aquaculture Benefits by 50%	2.54
(vi)	Combined Impact of 20% Increase in Capital Investment/ Expansion Costs and 20% reduction in Total Benefits	7.77

Table 4: Summary of Specific Economic Growth Determinants to be Derived from the Investment:

After Project Completion							
• Creation of direct and indirect locally-based jobs relating to:							
	-	Increased day tourism expenditures					
	-	Services provision (recreation, tourism, commercial)					
	-	Assets/facilities maintenance					
	-	Provision of supplies/deliveries					
	-	Seafood and aquaculture production and processing					
	-	Commercial fishing vessel home-porting					
• Attraction of new investment to the port facilities							
	-	Additional/new commercial fishing vessels					
	-	Additional fish processing/freezing facilities					
	-	Storage facilities/storage capacity					
	-	Additional aquaculture research/training					
	-	Additional slipway/marine servicing facilities					
	-	Development of additional private sector marina facilities					
	-	Attraction of foreign investment in marina facilities					
	-	Small Cruise ship visitation and local area expenditures					
• Development of a sustainable ferry operation for Maria Island							
	-	Increased stimulus to Maria Island tourism					
	-	Scheduled daily/tri-weekly ferry services					
	-	Additional ferry employment and training					
	-	Utilisation of commercial boat servicing (engine maintenance, comms/nav aids)					



Appendix A - Dr R.R. Noakes CV

Dr. Bob Noakes - Maritime Economist/Financial Analyst



Bob Noakes is a specialist maritime infrastructure economist/financial analyst with project and policy experience across all maritime sectors (small general cargo/fishing ports, container ports, marinas, inter-island shipping studies, channel dredging, small passenger ferries, small Ro-Ro vessels, cruise shipping, port planning, supply chain analyses, EIS assessments for new ports and institutional issues facing port organisations). Specialist skills relate to the estimation of the economic/financial value of port investments, scenario formulation for maritime strategic planning, market research sampling/surveys, regulatory impact statements, consumer/demand forecasting, investment appraisals

(economic and financial viability), pricing and revenue determination, LOGFRAME analysis, risk analysis and triple bottom line assessments (economic, social, environmental) of future public sector investments in ferry passenger berths and in port facilities handling passengers and cargo.

Specific experience in justifying IT investment to improve small port, customs and revenue services (increased revenue collection, faster declaration processing, real time data retrieval and improved customer and staff relationships).

Specific Tasmanian small ports experience in Flinders Island, King Island, the East Coast of Tasmania (Coles Bay, Triabunna, Swansea, St. Helens, Prosser River) and in Hobart (yacht marinas and passenger ferry terminals).

International project/field experience, involving small island shipping/port studies in a range of South Pacific countries/island states: PNG, Solomon Islands, Vanuatu, Fiji, Western Samoa, Niue, Cook Islands and in the Caribbean.

Qualifications and Memberships

Bachelor BA (Hons), University of New England, 1969

Diploma in Education, University of New England, 1970

Ph. D. (Transport and Resource Economics), University of New England, 1976

Economic Society of Australia (Queensland Branch)

Specialisation

Maritime port economics and financial analyses of port projects (including market/demand forecasting, economic/ financial investment appraisals).

Expertise

Bob has an extensive background in in-port master planning (with engineers), preparing economic feasibility studies and economic/financial assessments for small ports and for major maritime projects, in supply chain least-cost analysis in improving trade facilitation processes, analysing the demand for inter-island shipping routes and their viability, market research and demand forecasting for project preparation in scenario planning to develop alternative potential 'growth' paths for port development plans, in multi-criteria analysis and ranking of site options, LOGFRAME analysis and Theory of Change frameworks, regulatory impact statements, and in the preparation of Business Cases based on international best practice cost-benefit analysis techniques.

Years in Industry: 40

International Agency Experience: Asian Development Bank, World Bank, Kuwait Fund, Commonwealth Secretariat, AusAid, UK DFID, USAID

Adjunct Professor: Griffith University, Gold Coast Campus (courses on supply chain and logistics operations), 2010-2012.

Key Project Experience: Transport Infrastructure

Forty (40) years of Australian and international project economics and financial analysis experience with government agencies and public utilities in Australia, Asian, Pacific, African and European countries (specific work experience in more than thirty countries). His primary role has been as an engineering economist/financial analyst.

Specialist experience in identifying transport infrastructure capacity constraints, supply chain cost penalties and trade facilitation deficiencies for 'with' and 'without' investment scenarios involving existing and potential new port, rail and road infrastructure.

Specific maritime transport infrastructure sector experience in:

- Economic justification for maritime infrastructure (ports facilities, marinas and recreational boating infrastructure, container storage facilities, container handling equipment, navigation aids);
- Demand forecasting for passenger and freight services under alternative scenarios;
- Studies of inter-island shipping with multiple port linkage benefit evaluations
- Economic/financial valuations of port terminal/shipping investments
- Economic/financial justification for improved customs and revenue services
- Estimation of least-cost supply chain structures (intermodal links)
- Inter-modal road and rail access to container terminals;
- Passenger/freight ferry feasibility studies and changes to shipping services;
- Estimating levels of ferry subsidies appropriate to economic development criteria;
- Cruise ship terminals and support infrastructure;
- Channel dredging for port entrances and waterways;
- Preparation of Marine Regulatory Impact Statements (RIS); and
- Investment in new dredging equipment/acquisition of existing dredges.

He has worked on numerous local and regional maritime transport plans where scenario development has been required under alternative economic, social and environmental conditions. He has been involved in forecasting the conditions under which alternative air transport and shipping scenarios can arise, and has applied economic appraisal criteria to the identification of the most appropriate investment options, relevant to the preferred scenario.

He has been involved in studies to identify the economic/financial net worth and future value of port infrastructure and ferry/ shipping operations as part of privatisation and capital re-investment strategies and tenders for ownership.

He has specific experience in the development of environmental impact assessments (EIS) and strategic infrastructure masterplans for port development projects, including strategies (at state, regional, local and location/specific levels) involving integrated transport planning and project component evaluations (use of latest cost-benefit analysis methodologies involving quantification of externalities), preparation of detailed market/demand analysis and forecasting studies, preparation and estimation of performance measures and productivity indicators/benchmarks (often using international best practice) and in the preparation of investment feasibility reports (involving both economic and financial evaluations, sensitivity analysis and risk assessments).

Specific experience has been gained in the preparation of Regulatory Impact Statements (RIS), based on COAG guidelines for changes to national and state marine and transport legislation.

His marine transport sector experience covers the conduct of institutional assessments of specific transport agencies and firms, including the identification of management and staff training needs; computerisation of financial management; reviews of tariffs and debt servicing; preparation of strategic

business and marketing plans to provide necessary institutional strengthening of port authorities and maritime agencies. Upgrading of port agency customs and revenue processes to improve trade efficiency has been justified with the preparation of specific Business Cases.

Collectively, work experience covers more than 30 countries including Australia (all states), Asia, the South Pacific, Africa, Latin America, the Caribbean, the Middle East, Europe and North America. He has been a Team Leader for more than twelve detailed government project evaluation/research programs, involving the management of up to 15 persons in a team.

Most Recent Strategic Marine Experience: 2001 - 2015

Solomon Islands Interisland Shipping Review, 2016

Transport Economist responsible for a detailed interisland survey of the current range of vessel types, conditions, services, passenger needs and satisfaction levels and opportunities for new forms of shipping service alliances and hubs. Identified the key constraints to the future development of new ferry services for tourism development and for the development of new port facilities for agricultural development, particularly palm oil. Recommended that for each of the nine provinces, one modern cargo/passenger berth/wharf facility be developed. (Client: DFAT, Canberra and Honiara).

St. Helens, Tasmania: Economic and Financial Analysis of Proposed Investment in Ex-HMAS Tobruk as a Dive Wreck, September 2014-February 2015

Economist/Financial Analyst involved in a market study and economic and financial analyses relating to the proposal to utilise HMAS Tobruk as a dive wreck, after sinking off St. Helens. Examined the international and domestic demand for naval wrecks as dive sites (6 others in Australia; 10 in the South Pacific/New Zealand). Prepared a detailed Business Case for the proposed Commonwealth/State/Local Government investment required, including the development and ongoing operations of a dedicated Dive Centre in St. Helens. Developed EIRR/FIRR, NPV and BCR investment criteria to support the transfer of the ship. Undertook a specific financial analysis to justify investment in a new electronic tax collection system to improve the collection of port-related revenues and the tracking of coastal recreational and fishing vessels. (Client: Break O'Day Council, Tasmania).

East Caribbean Inter-Island Passenger and Freight Shipping Study, 2012

Economist involved in an economic appraisal of the viability of linking Montserrat (with limited sea passenger ferry access) to neighbouring islands of Guadeloupe, Dominica and St. Kitts/Nevis. Developed a series of demand forecasts for each of the individual routes, and estimated the economic costs and benefits of operating a 34-metre fast ferry (with passengers and freight) to link each of the four islands. Generated a range of economic investment criteria and prepared a detailed Business Case for investment in a new ferry, based in Montserrat.

Montserrat (East Caribbean): Economic Review of the Proposed Master Plan for a Major New Port in Carrs Bay, February 2014-June 2014

Port Economist involved in an independent economic review/re-evaluation of the likely market demand and economic/financial viability of developing a major new port based on an international cruise ship terminal for Montserrat. Reviewed the tourism, general cargo and container cargo forecasts prepared for the Master Plan; re-examined the range of likely financial revenues from ship berth/passenger fees, visitor expenditures, sales of water/utility services in port; re-estimated the likely economic/financial viability of the proposed investment; and conducted a range of sensitivity tests to confirm the nature of the viability results (non-viable). Undertook a least-cost analysis to estimate the likely maximum port investment, which could be justified, based on the revised forecast benefits. (Client: Government of Montserrat).

East Coast of Tasmania: Feasibility Study of Major Marine Infrastructure: Business Case Development of a Package of Projects (6 Port Options), June 2012-November 2013

Marine Economist/Financial Analyst responsible for the preparation of a series of individual economic appraisals and financial analyses of specific new port infrastructure developments along Tasmania's east coast. Each of the projects was identified for engineering and economic analysis as opportunities for the redevelopment of Tasmania's maritime tourism and recreation sector (additional visitor attractions, expenditures, employment, government revenues). The projects are part of a Tasmania-wide strategy to invest in new infrastructure to restructure and revitalise Tasmania's economy. Prepared demand forecasts for new marine facilities for 6 projects (Prosser River, Triabunna [alternative options], Swansea [alternative options] and Coles Bay. Completed a range of 20-year cost-benefit analyses and sensitivity tests for each project option. Considered the role of alternative least-cost options for breakwaters and for the role of both the private sector and the public sector. Examined the opportunities to improve port revenue collection processes. (Client: Glamorgan Spring Bay Council, Tasmania).

St. Helens, Tasmania: Marine Infrastructure Development Project for St. Helens (Pelican Point and Barway): Business Case/Economic Analysis, July-September 2013

Marine Economist/Financial Analyst responsible for the preparation of a detailed investment analysis for the provision of additional infrastructure at the entrance to St. Helens. Completed a detailed commercial/recreational fishing/fish processing/tourism retailing survey to determine the economic loss to the St. Helens/regional/Tasmanian economy from the cessation of commercial fishing/boating, with the closure of the sea entrance due to sand deposits. Estimated the size of the 'without' project economic loss and the economic viability of investing in additional breakwater/retaining walls. (Client: Break O'Day Council and DEDTA, Tasmania).

Bridport, Tasmania: New Bridport Pier Economic Analysis/Business Case Development, May-June 2013

Marine Economist responsible for the preparation of a detailed economic appraisal/investment analysis of the development of a new 400-metre wooden pier at Bridport. Involved in the detailed socio-economic survey of potential outdoor recreation and tourism benefits (expenditures employment, sawmill production, food product sales, additional real estate development). Demonstrated the economic viability of the proposed development with estimation of NPV, EIRR, BCR criteria. (Client: Bridport Community Association and Marine and Safety Tasmania [MAST]).

Hobart, Tasmania: Bellerive Public Wharf and Marina Redevelopment Study, December 2012-February 2013

Economist/Financial Analyst involved in preparing a detailed investment analysis/business case for the redevelopment of the Bellerive waterfront for additional water transport/ferry operations and for the expansion and rehabilitation of the Bellerive Yacht Club, to cover more than 1,200 berths. Completed a strategic assessment of Hobart and Tasmania's marina demand/ supply balance, and the potential for expanding water ferry transport from the eastern suburbs of Hobart to Hobart City/ Salamanca Cove, for recreation and tourism. Prepared a range of demand forecast in relation to future urban planning scenarios for the Bellerive waterfront. Detailed economic and financial investment criteria were developed. (Client: Bellerive Yacht Club)

Montserrat (Caribbean Region): Economic Appraisal of Access Investment and Subsidies in Montserrat, November-December 2011

Financial and economic appraisal of the costs and benefits associated with investing in a new multi-purpose passenger and cargo ferry and a larger aircraft (DHC-6 [Twin Otter]) to provide for sustainable sea and air access to/from Montserrat. Completed a series of on-island and regional interviews on ferry and commuter air service access issues. Prepared detailed investment analyses/Business Cases for new ferry and aircraft investment; examined the impacts of continued current subsidy arrangements and reviewed the option for future public-private partnerships. (Client: Government of Montserrat and UK DFID)

Darwin, Northern Territory: Economic/Financial Assessment of a Proposed Mining Inputs Import and Distribution Centre, September-October 2011

Engaged by a Private Sector Consortium to identify the demand for, and economic/financial viability of, importing quicklime, soda ash, industrial chemicals from Asia (China, Malaysia, Vietnam) for utilisation in Northern Territory and Western Australian gold mining operations. Responsible for identifying the likely demand estimates, and the supply chain costs of purchase, import, storage and redistribution to mines. Compared bulk versus containerised versus isotanker deliveries by sea. (Client: International Shipping Consortium, Indonesia)

Port of Brisbane, Queensland: Independent Assessment of the Market Potential and Revenue Forecasts of Port of Brisbane, 2011

Economist/Financial Analyst involved in a detailed review of analyses completed by an international shipping Consultant to evaluate the investment potential of the Port of Brisbane (as part of financial bidding for the privatisation). Prepared a set of alternative traffic forecasts by shipping sector examined the historic operating cost structures and re-evaluated the future earnings potential of the Port of Brisbane, by principal business unit. (Client: A major European Bank)

Sydney, NSW: Economic Assessment of Extension to Sydney's Overseas Passenger Cruise Ship Terminal, January - February 2011

Economist involved in identifying the key benefits to be generated from providing additional international cruise ship terminal facilities (visitor expenditures; port charges; refuelling revenues; provision of food/liquor; crew shopping; taxis and tour expenditures). Prepared a range of 20-year business investment results (NPVs, EIRRs, BCRs) for alternative capital investment programs. [This Project is ongoing].

Launceston, Tasmania: Upper Tamar River Dredging Study: Business Case Development, December 2008 - August 2009

Project Economist involved in an engineering and planning Master Plan for the management of river depths and silt levels in the Upper Tamar river adjacent to Launceston City. Responsible for providing a range of 20-year investment analyses for each of the major dredging options and a detailed Business Case for the preferred option. COAG and Tasmanian Department of Treasury Investment Guidelines were followed.

Gold Coast, Queensland: Economic Financial Assessment of a Proposed Cruise Ship Terminal, December 2007 - February 2008

Responsible for the preparation of a detailed business appraisal for Queensland Government/Public Sector investment in a cruise ship terminal to be located at the seaway on the Gold Coast. Provided an independent report based on engineering costs as to the non-viability of the proposed investment. Separately conducted a review of the potential viability of investment in a stand-alone marina facility.

Gold Coast, Queensland: Waterways Access Needs Study: Economic and Financial Analysis, June - September 2008

Maritime Economist/Financial Analyst responsible for the preparation of a Business case for the justification of public sector funding of capital and maintenance dredging on the Gold Coast (the Broadwater and northern channels leading to Moreton Bay). Identified the range of economic cost penalties in the 'do-nothing' dredging option and estimated the extent to which private sector funding could be committed to maintenance dredging. (Client: Queensland Department of Transport and Queensland Department of Regional Development)

King Island, Tasmania: Port Master Plan, June - December 2007

Economist involved in a feasibility study to examine the viability of expansion of King Island's port and foreshore support facilities. The planned expansion of the port was based on the re-opening of King Island's scheelite mine adjacent to the port. Responsible for trade projections, shipping service option analyses, port facility capacity needs, Business Case development using CBA techniques and financing options for staged development and improvements to customs and revenue processing and collection with upgraded port software.

Tasmania: Bruny Island Airline and Inter-Island Ferry Service Study, 2007

Economist responsible for examining the economic/financial benefits and costs of Tasmanian State Government investment in additional ferry capacity and/or ferry and charter air service capacity to one of eastern Tasmania's World Heritage natural tourism attractions. Estimated existing subsidy levels; forecasted alternative tourist and resident travel flows between Bruny Island, Maria Island and Groote Island; and estimated the freight volumes with existing limited capacity. Estimated a range of costs and benefits (capital and operating) associated with alternative investment and leasing options to provide additional capacity between one and three islands. Identified the optimal level of annual subsidy required for each island connection. (Client: Tasmanian Department of Infrastructure). [Findings were implemented with a new ferry purchased in 2009, involving a public-private partnership].

Melbourne, Victoria: Port Philip Channel Deepening Economic and Financial Analysis: Business Case Development, May - August 2005; Revised June 2008

Economist/Financial Analyst responsible for the preparation of a strategic cost benefit analysis of the proposal to deepen Port Philip's shipping channels and entrance to Swanston Dock. Identified a broad range of economic costs to the state of Victoria in the 'without' project case, relating to reductions in economic activity, impacting on industry, councils, port-related employment and government contributions to revenue. Prepared a detailed set of economic criteria identifying NPV, EIRR and BCR estimates relating to the justification for the investment in deeper water access for larger TEU and tanker vessels. [Report prepared in confidence to the Victorian Freight and Logistics Council and discussed in the recent Victorian Government Upper House Hearings on the Economics of Channel Deepening].

Sydney, NSW: National Maritime Safety Council (NMSC) Regulatory Impact Statement (RIS): Preparation of the National Standards for Ship Surveying

Economist involved in a detailed Australia-wide jurisdictional RIS preparation of proposed new standards for ship surveying. Interviewed a broad range of ship surveyors, ship owners and State maritime agency personnel responsible for commercial ship surveys (new and existing vessels). Identified both the costs to industry, the State and the communities from the implementation of the new regulations, and the likely economic and financial benefits of the new legislation.

Newcastle, NSW Multi-Purpose Container Terminal Feasibility Analysis (Private Sector Consortium), January - March 2005

Economist responsible for the completion of a feasibility assessment of potential investment in a new multi-purpose terminal. Completed a detailed analysis of supply chain gaps/capacity limitations of existing rail services to the port from regional coal mines, agricultural exporters and importers of steel, machinery, bulk commodities. Estimated the potential for a new facility to support new capital investment in new berths and storage areas and cargo handling equipment.

Indonesia, Coastal Bulk Products and General Cargo Terminal Feasibility Study (Private Sector Consortium), July - November 2003

Economist/Financial Analyst involved in a study to examine the economic viability of a new coastal shipping terminal 30 kms west of Jakarta. Completed a series of trade surveys and identified key cement, sand and coal flows. Prepared a range of forecasts for inter-island trade. Prepared a Business case identifying the financial viability of the terminal design/layout.

Victorian Department of Transport 2003 Investment Analysis for the Lady Hamer Dredge, September 2003

Economist/Financial Analyst involved in a detailed examination of the historic financial costs and subsidies with operating the Lady Hamer dredge, located at Lakes Entrance. Prepared a series of analyses to identify alternative options with replacement, compared operating costs and returns with state/port-owned dredges elsewhere in Australia. Recommended the continuation of the existing dredge ownership.

Department of Infrastructure (DoI): Preparation and/or Review of Specific Infrastructure Investment Proposals and Business Cases, November 2001 - November 2004 (intermittent)

Economic Advisor/Project Economist responsible for the completion and review of a number of cost-benefit analyses (CBA) using TBL techniques and pricing documentation associated with upgrading of Melbourne's cruise ship terminal facilities; Regulatory Impact Statements for procedures to change port/rail operations; proposals for passenger ferry operations; ownership/operation of privatized rail freight operations; public transport/transit redevelopment projects; Melbourne Port Rail investment (identification of supply chain constraints and supply gaps); CCTV application for Melbourne's trams and train; Melbourne's 2030 initiatives relating to road/public transport mode switching; reappraisal of key VicRoads road projects; reappraisal of specific rail corridor upgrading proposals and Business Cases; the preparation of a Metropolitan Congestion Management Strategy Paper (including a range of demand management and pricing options); and the preparation of Investment Guidelines for Local Government, including TBL concepts (together with the completion of several Business Cases as illustration of the Investment Guidelines).

Specific Maritime Project Experience: Prior to 2003

Ports and Shipping

Broad experience in a wide range of ports and shipping projects in Southeast Asia, the South Pacific and in Australia. This has involved demand estimation, economic impact assessments, identifying shipping service subsidies as aid components, regional trade flow analyses between competing ports, market surveys of shipping lines, freight forwarders and exports/imports of specific commodities to develop port traffic forecasts; feasibility studies of small fisheries port facilities; preparation of economic feasibility studies involving estimates of the benefits of port upgrading to limit operating costs; preparation of financial analyses of port authorities involving forecasts of income and expenditures and balance sheets; estimation of financial performance ratios and indicators; and preparation of marketing and development plans to assist port authorities. Projects completed in Australia, in Vietnam, PNG, Seychelles, Vanuatu, Fiji, Malaysia, Indonesia, Philippines, South Pacific inter-island shipping (Cook Islands, Samoa, Tonga, Fiji, Vanuatu).

During this period, he worked with P&O Australia to identify potential new container terminal/stevedoring business opportunities in Saigon, Manila, Bombay, and Buenos Aires. The economic inputs were incorporated in P&O's investment planning for these various ports, all of which subsequently took place. Developed an early understanding of the financial and technical benefits of investment in EOI technology to improve trade performance throughout all ports (increased revenue, improved customs relationships, less loss and theft, improved staff performance).

Australian:

- Melbourne Cruise Ship Investment Planning and Analysis, 2002
- Lakes Entrance Dredging Options Evaluation, Victoria, 2002
- Esperance Port Development Study, Esperance, Western Australia, 1998
- Hobart Port Strategy Plan, 1989
- Cairns Port Strategic Plan, 1987/88
- Ship Lift Investment Study, Western Australia, 1986
- Victorian Port Investment Guidelines, 1984

International:

- Indonesia, Cilacap Port Expansion Study, 1997
- Malaysia, Kuantan Port Privatisation Study, 1996
- First Indian Ports Project, 1995
- Port Moresby Ship Repair and Slipway Feasibility Study, Papua New Guinea, 1990
- Saigon Port Rehabilitation Study, 1990
- PNG Second Ports Development Study, 1989
- Seychelles Maritime Operations and Regulations Study, 1986
- Papua New Guinea Port, Foreshore and Road Pre-Feasibility Study, 1985

- Papua New Guinea Port Development Study, 1983
- Vanuatu Port Development Study, 1983
- South Pacific Regional Transport and Shipping Study, 1982
- Domestic Container Terminal, Manila, Philippines, 1981

Small Fishing Ports and Maritime Projects

Involving the economic/financial appraisal of investments in the rehabilitation and expansion of small fishing and maritime port infrastructure (shiplift assets, boat/ship repair yards, channel dredging, navigation aids, marine communications, fish processing/fish landing/fish freezer facilities, beach re-nourishment).

- Ballina Fishing Port, NSW, 1985
- Ulladulla Fishing Port, NSW, 1986
- Bermagui Port, NSW, 1986
- Cairns Port, Queensland, 1986
- Mackay, Queensland, 1987
- Albany, Western Australia, 1996
- Port of Geelong, Victoria (prior to privatization), 1984, 1989
- Port of Devonport, Tasmania, 1991
- Melbourne Beaches Re-Nourishment, 1984