

Efficient Costs of
Providing Private and
Newcastle-Stockton
Ferry Services

Prepared for:

Independent Pricing and
Regulatory Tribunal NSW
(IPART)

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MANAGEMENT/EXECUTIVE SUMMARY

CONTEXT

Most private ferry operators are small commercial businesses and in most cases compete with other modes of transport.

The approach in this report is therefore based on an assessment of the reasonableness of each operator's reported costs. The assessments have also been made having regard to comparisons of costs for different operators and benchmarks.

This report is a summary of the confidential advice provided by Indec to IPART.

Operating expenditure (OPEX)

The cost inputs of ferry operators relative to efficient cost are summarised below.

- Central Coast – current costs *do not* exceed reasonably efficient cost
- Church Point – current costs *do not* exceed reasonably efficient cost
- Clarence – current costs *do not* exceed reasonably efficient cost
- Cronulla – current costs *do exceed* reasonably efficient cost
- Brooklyn – current costs *do not exceed* reasonably efficient cost
- Palm Beach (Basin) - current costs *do not* exceed reasonably efficient cost
- Palm Beach (Ettalong) - current costs *do not* exceed reasonably efficient cost
- Stockton – current costs *do exceed* reasonably efficient cost

Capital Expenditure (CAPEX)

Capital expenditure incurred by private ferry operators relating to vessels may include, without limitation:

- Ferry acquisition costs and related depreciation
- Spare parts (ferries)
- Safety equipment
- Engine rebuilds and mid-life overhaul expense
- Structural repairs and refurbishment of the vessel's hull and coach house, and on-board services (electrical systems, etc.)

The assumed useful economic life is 25 years for slow ferries and 15 years fast ferries. The average economic life in years of some ferries exceeded the useful life by a considerable margin reflecting the operational method of the operator catering for both patronage and use of asset type preference. The age of some ferries in the current fleet demonstrates that theoretically the life of most slow ferries can be significantly extended beyond the generally accepted economic life of 25 years, particularly in the case of 'heritage' ferries which are popular amongst patrons. Replacement in such ferries is therefore driven by any structural integrity issues or availability of spare parts. It should also be noted that these vessels are subject to periodic surveys by NSW Roads and Maritime Services.

The useful economic life for other asset classes has been assessed as 10,000 hours for engine rebuilds, mid-life engine replacements every 20,000 hours, and 5 years for all other asset classes.

Capital expenditure incurred by private ferry operators that does not relate to vessels may include, without limitation:

- Wharf infrastructure (i.e., Stockton Ferries)
- Office accommodation (building, equipment and furniture)
- Vehicles

Indec has surveyed the operators' current capital expenditure intentions for ferries and other assets. It is of concern that some operators have advised that current levels of profitability do not support any capital expenditure other than the current levels of depreciation and interest. It is beyond the scope of this review to investigate the validity of that advice. Anecdotal evidence suggests that investment decisions may be influenced by the proximity of any periodic expiry of contract terms. Persistent under-investment or inadequate levels of CAPEX are likely to eventually prove unsustainable.

Therefore, notwithstanding the operators' current capital expenditure intentions for ferries and other assets, Indec has independently assessed the efficient CAPEX for ferry replacement. Efficient capital cost calculations have been based on Modern Equivalent Assets (MEA) and the whole of life cost of selected asset classes. Generally, we have made an allowance for replacing all ferries that are of an age exceeding the economic life of the asset (25 years for slow ferries and 15 years for fast ferries).

Indec has assessed the replacement costs of ferries under normal market conditions (Table M-1). Specifically, the replacement cost estimates have not been based on depressed market conditions that have prevailed in the boat/ship building industry in recent years. Indec acknowledges that in some circumstances operators may be able to procure replacement ferries at lower prices than indicated in Table M-1. It should also be noted that whilst the average economic life of a number of ferries exceeds the useful life limit of 25 years for slow ferries and 15 years for fast ferries by a considerable margin, there is no contractual obligation on operators to maintain their fleets within those parameters.

Table M-1 Efficient Capex 2015 to 2017

Operator	Early 2015 (\$)	2015 (\$)	2016 (\$)	2017 (\$)
Central Coast	-	-	100,000	1,000,000
Church Point	-	20,000	960,000	100,000
Clarence	-	-	-	2,000,000
Cronulla	1,210,000	-	1,000,000	20,000
Brooklyn	875,000	875,000	-	20,000
Palm Beach-Basin	-	20,000	-	1,170,000
Palm Beach-Ettalong	-	-	3,000,000	100,000
Stockton	1,000,000	1,000,000	-	20,000

Patronage Growth

Reported quarterly patronage data for all ferry operators except Stockton is shown in Figure M-1. Stockton data was excluded because the data set provided only contained Stockton data for the 2012/13 year. Inclusion of the 2012/13 Stockton data would therefore have skewed the trend. The analysis in Figure M-1 shows that patronage has not grown since 2008/09 and is quite seasonal.

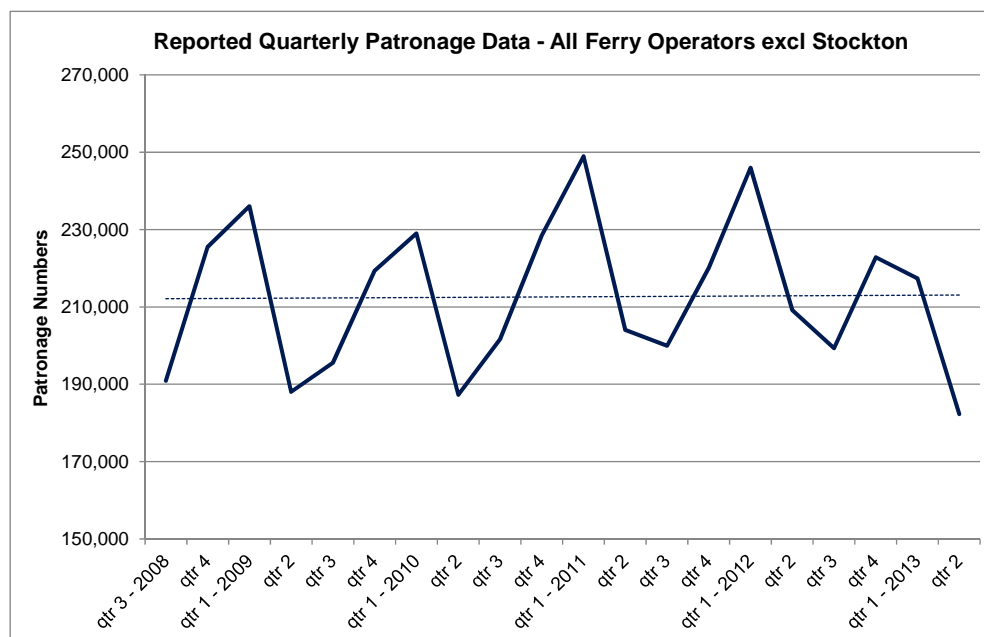


Figure M-1 Reported Quarterly Patronage – All Operators Excl. Stockton

We have considered this trend and conclude that the private ferries primarily service mature residential areas which are not subject to significant population growth. Some of the areas serviced by private ferries also have access to other competing public transport modes. We have also considered opportunities for patronage growth and have reached the following conclusions.

- Passenger service patronage is fairly constant and represents about 95% of revenue with the balance primarily consisting of charter activity revenue.
- Non-passenger service revenue is difficult to expand for economic or logistical reasons.
- Non-service revenue is also provided by other government service subsidy and such operation is generally segregated from the contract.
- Fare discounting is achieving limited results.
- Catchment areas for concession fares are an issue in relation to other government subsidised transport modes.
- The concessional catchment area patronage planning (especially with regard to intermodal operations) is limited to a short time scale as the Director General can call for an EOI for a regional commercial service nearby and the contract term is a limiting factor.
- Some operators exceed contractually mandated service levels but the results in terms of additional patronage levels appear mixed.

Timetabling and Services

A number of timetabled and contractually specified services have been identified that appear to suffer from poor levels of patronage. Subject to more detailed analysis, especially in relation to verifying the impact of any selective withdrawal of services on patronage, an opportunity exists to rationalise services to more closely match demand.

Excluding public accessibility and other social equity considerations, the conclusion of this review is that some rationalisation of timetabled services would improve cost efficiency. In terms of potential cost efficiency improvement opportunities, very early morning and late evening services are primary candidates for rationalisation. Rationalisation of poorly patronised services, particularly very early morning and late evening services will increase cost efficiency.

Route Design

We have considered the existing route design and during this brief review no obvious re-design options with potential to materially improve cost efficiency or grow ferry patronage have been identified.

Fleet

The carrying capacity of some ferries may significantly exceed demand. Therefore, subject to more detailed analysis, especially in relation to verifying the full extent of seasonality in demand for capacity, an opportunity exists to procure smaller, more economical vessels with a carrying capacity commensurate with the level of demand. Material levels of seasonality could be overcome by seasonal timetables covering quarters 1 and 4 (high season) and quarters 2 and 3 (low season). The procurement of smaller, more economical vessels will increase cost efficiency. Some operators use a smaller ferry during periods of low demand (the smallest ferry in an operator's fleet is generally the spare ferry).

There may be an opportunity for a general re-think of the services provided by Stockton Ferries. We have previously commented on Stockton's relatively poor passenger load factors compared to the 200 passenger carrying capacity of each one of its ferries and on the very significant layover hours which continue to incur maintenance and crew costs. Smaller ferries could operate this service on a continuous loop basis similar to some Brisbane river ferry services. Such a re-design of Stockton's service frequency and the ferry fleet could yield cost savings and attract additional patronage. Any service re-design would require a more detailed review including a cost benefit analysis which is beyond the scope of this review.

1 INTRODUCTION

1.1 OBJECTIVE

To estimate the total efficient costs of providing contracted ferry services to inform the 2014 fare review.

1.2 REPORT STRUCTURE

This document has been divided into the following sections:

- Executive Summary
- Section 1: Introduction (this section) defines:
 - Overview and purpose
 - Background and Objective
 - Assumptions
- Section 2: Current position which:
 - Provides an overview of the cost categories assessed for each operator
- Section 3: Efficient Cost which:
 - Contains Projections of efficient costs (2014 dollars)
- Section 4: Efficiency Gaps which:
 - Makes observations with respect to key efficient cost performance indicators
- Section 5: Possible Causes of Inefficiencies:
 - Identifies causes of any cost inefficiency
- Section 6: Opportunities
 - Opportunities for patronage growth and changes to timetabling/ services to drive cost efficiencies
- Section 7: Constraints
 - Technical, managerial constraints or Government policy that may prevent ferry operators achieving efficient costs
- Section 8: Response to Submissions
 - Response to Church Point and Brooklyn Submissions to the Public Report and comments from the public hearing
- Appendices: Base Data which provides a high level summary of current and projected efficient OPEX and CAPEX and data analysis.

1.3 ASSUMPTIONS

In preparation of this report Indec has relied on the CIE 2012-13 survey data ¹ and a CIE report² dated October 2013, augmented by clarifications and further information provided by the private ferry operators listed in Table M-1. The 2013 CIE survey data did not cover the level of detail required to separate slow and fast ferry costs and income from other sources such as charter. A new survey with respect to either the 2012-13 or 2013-14 year was out of scope.

¹ The Centre of International Economics (CIE) – Excel Workbook: CIE Data and Modelling final 9 October 2013.xlsm

² The Centre of International Economics (CIE) – Final Report: “Private Ferry Cost Consultancy, October 2013”

Therefore, for the purpose of comparing and augmenting the 2013 CIE survey data, Indec has also referred to its 2008 survey data and CVACI report to IPART³ and its 2009 survey data and report on potential private ferry contract arrangements to the Ministry of Transport NSW⁴.

The analysis and observations in this report should therefore be considered in light of the assumptions listed below and throughout the report.

- Some conclusions in this report are based on interpolation of data from different time periods (for example, allocation of costs and other metrics between slow and fast ferries where operators run both vessel types).
- Combining data from different time periods does not have a material impact on the validity of the ratios and the subsequent analysis.
- Survey data, clarifications and further information provided by ferry operators have not been independently audited or verified.
- Contractual obligations on the ferry operators such as service levels and drivers of government sourced revenues have been based on Commercial and Non-Commercial Ferry Service Contracts generally dated 2011 to 2013 between the Director General of the Department of Transport⁵ and private ferry operators.
- No asset conditions surveys have been carried out on either vessels or infrastructure such as wharves, etc. to verify the economic life of assets (vessels) stated in the 2013 CIE survey.
- All projected OPEX and CAPEX estimates are expressed in 2014 dollars. Interest costs and depreciation have not been included in CAPEX estimates.
- Indec has assumed that in accordance with standard accounting conventions the 2013 CIE survey cost data excludes GST.

³ Indec – Final Report: “Relative Weightings in the Commercial Vessel Association Cost Index (CVACI)” October 2008

⁴ Indec – Report: “Development of Contract Arrangements for Private Ferry Operators” June 2009

⁵ For and on behalf of Transport for NSW

2 CURRENT POSITION

Indec has reviewed the current data sets used by CIE and augmented that with additional data from ferry operators to gain a more robust understanding of the current financial and operational position of the seven slow ferry services and one fast ferry service operator.

For clarity, the current position is shown in 2014 dollars and by individual operators. A comparative chart of operational and financial data sets is available in appendix D. Cost categories reported below include:

- Labour - should include the wages, workers compensation, payroll tax (if applicable) and superannuation of all permanent full-time and part-time staff and any casual employees employed directly by the operator.
- Fuel - should include the cost of fuel in relation to the provision of regulated ferry passenger services net of any fuel tax credits (excise rebates).
- Insurance - should include all insurance premium expenses other than ferry insurance. Examples include public liability, terminal and equipment, and director's and officer's liability insurance. It should also include the cost of ferry registration fees and expenses associated with mandatory public surveys in respect to ferry services provided.
- Repairs and Maintenance - should only include parts and consumable costs relating to the repair and maintenance of ferries. For example, internal and contracted ferry maintenance, administration buildings, ticket booths, plumbing, electrical etc.
- Berthing / mooring fees - means the annual rent paid for moorings/berths in relation to the provision of ferry passenger services. In discussions with ferry operators for this review, it was established that these costs are predominantly for overnight berthing and mooring of ferries, not for the use of wharves for regulated services.
- All other costs – should include all other operational costs that are not accounted for in the above categories. For example, cash collections costs, office rent, communication costs, financial services, external consultants, advertising, pre-printed tickets and timetables etc.

3 EFFICIENT COST

Similar to our conclusions in a previous report⁶ we have formed the view that the cost efficiency of a number of private ferry operators is below transport industry labour cost and other inputs and regulated optimised capital cost recovery. The 2012/13 cost structures of some operators are below a viable and sustainable efficient cost level.

For instance, several slow ferry operators have previously indicated that not all labour has been costed and accounted for in previous surveys. Anecdotal evidence suggests that there are a number of owner operators that do not charge the business for all the time they spend in the business, either as salary/wages or owner's drawings. As a consequence, labour expense could be understated, particularly in the slow ferry operator sector.

Within this context, Indec has based its assessment on the reasonableness of the reported costs. For the purpose of this review, reported costs assessed as 'reasonable' have been deemed efficient.

3.1 OPEX

The baseline for the efficient cost projections consisted of 2012/13 costs reported by the operators. For the purpose of expressing the efficient cost projections in 2014 dollars, all 2013 OPEX data has been escalated by 3.9 per cent (3.9%).

Labour

The Full Time Equivalent (FTE) staff numbers for all slow ferry services for the 2012/13 financial year is 42.3 FTE's. We have assessed a reasonable annual labour cost per FTE is up to approximately \$64,000. Reported labour costs for slow ferries ranged from approximately \$40,000 to \$73,300.

Not all ferry services run the same number of crew per service. Indec has estimated that the 2014 efficient labour cost per service hour is approximately \$52.00 for ferries that require only one crew, approximately \$69.00 for ferries that require two crew and approximately \$128.00 for ferries that require three crew.

Fuel

The 7 slow ferry service operators operate varying ferry sizes, ranging from 45 passengers to approximately 200 passengers. The size of the ferry and the speed of the ferry impact on the fuel cost. Based on the 2013 CIE survey data, the 2013 cost per service hour ranges from \$6.80 to \$18.00 and averages approximately \$11.60 per engine hour. Fast ferry services average fuel cost per ferry hour is approximately \$59.00. Indec has assumed that in accordance with standard accounting conventions the reported costs in the 2013 CIE survey including fuel costs *exclude* GST.

Indec considers the reported fuel costs as reasonably efficient. In determining projected efficient fuel cost, 2013 fuel costs have been inflated by 3.9% to determine 2014 estimates. Fuel efficiency of modern equivalent ferries has not been assessed or taken into account.

⁶ Indec – Report: "Development of Contract Arrangements for Private Ferry Operators" June 2009

Insurance

Insurance costs are mostly dependant on claims history, size of the ferry and the age of the ferry. As Indec are not privy to the claims history of each operator, we have recommended an efficient insurance cost based on the data provided. In addition, the allocation of registration and survey costs may vary from operator to operator and this may also impact on the costs attributed to insurance for each operator.

For the 2012/13 financial year, the reported insurance costs per slow ferry range from \$9,900 to \$22,000 averaging approximately \$16,400.

Fast ferry insurance costs per ferry were approximately \$18,800. Indec considers the reported insurance costs as reasonably efficient. In determining projected efficient insurance cost, 2013 insurance costs have been inflated by 3.9% to determine 2014 estimates.

The reported insurance costs include all insurances and Indec has assumed that in accordance with standard accounting conventions the reported costs in the 2013 CIE survey including Insurance costs *exclude* GST. Indec has not assessed the efficient costs of insurance for ferries or the impact of replacing the current fleet with modern assets.

Repairs and Maintenance

Indec established as part of a previous report⁷, that all of the smaller slow ferry operators maintain their own ferries and the fast ferry operator outsources maintenance. Repairs and maintenance costs per service hour range from approximately \$7.00 to \$50.00 and average approximately \$25.00 per service hour. The smaller ferries under a capacity of 100 passengers average \$9.50 per service hour and the ferries over the 100 passenger capacity average approximately \$23.00 per service hour. Fast ferry current repairs and maintenance costs per service hour are approximately \$51.00.

An efficient cost for repairs and maintenance for small capacity ferries is approximately \$9.00 per service hour and the efficient cost for the remaining private slow ferry operators is \$28.00 per service hour.

Indec has assessed that reasonably efficient repair and maintenance costs are in the order of \$14.70 per service hour.

Fast ferry services typically incur higher than average repairs and maintenance costs per service hour and Indec believes that current repairs and maintenance costs are efficient.

Berthing and Mooring Fees

Current berthing and mooring fees vary significantly from 71¢ to \$5.61 per service hour and average \$2.24. Stockton does not attract berthing and mooring fees. Some services only have one stop whereas others stop up to seven times at separate wharves.

Indec considers the reported berthing and mooring fees as reasonable. In determining projected efficient berthing and mooring fees, 2013 berthing and mooring fees have been inflated by 3.9% to determine 2014 estimates.

⁷ Indec – Report: "Development of Contract Arrangements for Private Ferry Operators" June 2009

All Other Costs

All other costs include all other operational costs that are not accounted for in the above categories. Examples of other costs include cash collection costs, office rent, communication costs, financial services, external consultants, advertising, pre-printed tickets and timetables etc. The reported 2012/13 costs in the 'All Other Costs' category varied from \$4.50 to \$34.00 per ferry service hour and averaged \$10.33 excluding Stockton. Indec has formed the view that an efficient cost for all other costs per service hour is approximately \$10.70. In determining projected efficient costs on the 'other costs' category, the average 2013 cost has been inflated by 3.9% to determine 2014 estimates.

The 2007/08 survey⁸ collected other costs with more definition than the CIE survey⁹. The results of applying the weights of the 2007/08 to the above efficient unit cost of \$10.70 per service hour are shown in Table 1.

Table 1 Weights of Other Costs - 2007/08 Survey

Other Costs	Weight	Efficient Unit Costs
Cash Collection	0.27%	\$0.03
Terminal & Office Rent or Rent Equivalent Costs	11.98%	\$1.28
Information Technology & Communications	13.01%	\$1.39
Professional, Marketing & Financial Services	16.60%	\$1.78
Motor vehicle expenses	10.23%	\$1.10
Owners drawings	14.14%	\$1.51
Other People Costs	5.88%	\$0.63
Other Ferry Running Costs	27.89%	\$2.98
Total Other Costs	100.00%	\$10.70

3.2 CAPEX

3.2.1 ASSUMPTIONS

The majority of capital expenditure incurred by private ferry operators relates to vessels. Generally, ferry operators utilise slow ferries which are older or historic style vessels preferred by patrons both for the heritage attractiveness of the trip and also to provide attractive charter or tourism trips in order to optimise revenue opportunities. The use of fast ferries is more intended to optimise public transport capabilities in relation to the route as well as to cater for larger charters.

⁸ Ibid.

⁹ The Centre of International Economics (CIE) – Excel Workbook: CIE Data and Modelling final final 9 October 2013.xlsm

The assumed useful economic life is 25 years for slow ferries and 15 years fast ferries. By comparison the June 2009 Indec Report¹⁰ at paragraph 4.4 page 21 estimated the useful life for slow ferries at 25 years and that for fast ferries at 15 years. The average economic life in years of some ferries exceeded the useful life by a considerable margin reflecting the operational method of the operator catering for both patronage and use of asset type preference. The age of some ferries in the current fleet demonstrates that theoretically the life of most slow ferries can be significantly extended beyond the generally accepted economic life of 25 years, particularly in the case of 'heritage' ferries which are popular amongst patrons. Replacement in such ferries is therefore driven by any structural integrity issues or availability of spare parts. It should also be noted that these vessels are subject to periodic surveys by NSW Roads and Maritime Services.

The useful economic life for other asset classes has been assessed as:

- 10,000 engine hours for engine rebuilds
- 20,000 engine hours for ferry engines replacements
- 5 years for all other asset classes

Capital expenditure incurred by private ferry operators that does not relate to vessels may include, without limitation:

- Wharf infrastructure (i.e., Stockton Ferries)
- Office accommodation (building, equipment and furniture)
- Vehicles

A further capital allowance has been incorporated for engine re-builds at intervals of 10,000 engine hours. The average capital cost of an engine rebuild is \$25,000 to \$120,000. The average mid-life engine replacement cost is \$235,000. We have been advised that most ferries have two engines. Capital expenditure incurred by private ferry operators relating to vessels may include, without limitation:

- Ferry acquisition costs and related depreciation
- Spare parts (ferries)
- Safety equipment
- Engine rebuilds and mid-life overhaul expense
- Structural repairs and refurbishment of the vessel's hull and coach house, and on-board services (electrical systems, etc.)

3.2.2 EFFICIENT CAPEX

It is of concern that some operators have advised that current levels of profitability do not support any capital expenditure other than the current levels of depreciation and interest. It is beyond the scope of this review to investigate the validity of that advice. Anecdotal evidence suggests that investment decisions may be influenced by the proximity of any periodic expiry of contract terms. Persistent under-investments or inadequate levels of CAPEX are likely to eventually prove unsustainable. Therefore, notwithstanding the operators' current capital expenditure intentions for ferries and other assets, Indec has independently assessed the efficient CAPEX for ferry replacement. In developing replacement cost estimates, Indec has accounted for the differences in passenger carrying capacity (Table 2).

¹⁰ Ibid.

**Table 2 Modern Equivalent Asset (MEA)
Replacement Costs for Ferries (2014 dollars)**

Passenger Carrying Capacity	Replacement Value (\$2014)
40	830,000
50	875,000
60	920,000
70	960,000
80	1,000,000
90	1,040,000
100	1,080,000
110	1,125,000
120	1,170,000
130	1,210,000
140	1,250,000
150	1,290,000
160	1,330,000
170	1,375,000
180	1,410,000

Efficient capital cost calculations have been based on Modern Equivalent Assets (MEA) and the whole of life cost of selected asset classes. Generally, we have made an allowance for replacing all ferries that are of an age exceeding the economic life of the asset (i.e., 25 years for slow ferries and 15 years for fast ferries).

Indec has assessed the replacement costs of ferries under normal market conditions. Specifically, the replacement cost estimates have not been based on depressed market conditions that have prevailed in the boat/ship building industry in recent years. Indec acknowledges that in some circumstances operators may be able to procure replacement ferries at lower prices than indicated in Table 2. It should also be noted that whilst the average economic life of a number of ferries exceeds the useful life limit of 25 years for slow ferries and 15 years for fast ferries by a considerable margin, there is no contractual obligation on operators to maintain their fleets within those parameters. The efficient

CAPEX for ferry replacement and refurbishment by operator for the period 2015 to 2017 has been summarised below.

CENTRAL

Prudent capex would include \$1,000,000 to replace the ferry 'Codock II' in 2017 with a new ferry of similar capacity to the ferry 'Saratoga'. It is also prudent to replace both engines of the ferry 'Saratoga' in 2016 at a cost of \$50,000 each.

CHURCH POINT

Prudent capex would include \$960,000 to replace the ferry 'Elvina' in 2016 with a new ferry of similar capacity to the ferry 'Amelia K'. Prudent capex would also provide \$20,000 for general refurbishment of the ferries 'Amelia K' in 2015 and \$100,000 for engine replacements and associated refurbishment for the 'L Duck' in 2017.

CLARENCE

It is prudent to replace both ferries 'Clarence Head' and the ferry 'Mirigini' in 2017 with new ferries of similar capacity to the ferry 'Clarence Head' at \$1,000,000 per ferry.

CRONULLA

It would be prudent to immediately replace the ferry 'Curanulla' with a new ferry of similar capacity at a cost of \$1,210,000. Prudent capex would also include replacing in 2016 the ferry 'Tom Thumb III' with a new ferry of similar capacity at a cost of \$1,000,000 and a provision of \$20,000 for general refurbishment of the 'Curranulla' replacement ferry in 2017.

BROOKLYN

It would be prudent to replace the ferry 'Sun' with a new ferry of similar capacity and the ferry 'Banksia' in 2015 with a new ferry of similar capacity to the ferry 'Sun' at \$875,000 per ferry.

PALM BEACH-BASIN

It would be prudent to replace the ferry 'Myra' in 2017 with a new ferry of similar capacity at a cost of \$1,170,000. Prudent capex also includes a provision for general refurbishment of the ferry 'Golden Spirit' in 2015 at a cost of \$20,000.

PALM BEACH-ETTALONG

It would be prudent to replace the ferry 'Sensation' in 2016 with a new ferry of similar capacity at a cost of \$3,000,000. Refurbishing the ferry 'Fantasea Joy' in 2017 at a cost of \$100,000 is prudent.

STOCKTON

In the case of Stockton Ferries, Indec has assumed that both existing ferries should be replaced with new ferries of reduced capacity at a cost of \$1,000,000 per ferry. We suggest that one ferry be replaced immediately and the other ferry in 2015 with new ferries of a reduced carrying capacity of 80 passengers each, to more closely match demand. The new ferries should be able to be operated with two crew. \$20,000 has also been included for refurbishment in 2017 of the first replacement ferry.

SUMMARY

The efficient CAPEX estimates for the reviewed ferry operators for ferries and other assets are summarised in Table 3.

Table 3 Efficient Capex 2015 to 2017 (\$2014)

Operator	Early 2015 (\$2014)	2015 (\$2014)	2016 (\$2014)	2017 (\$2014)
Central Coast	-	-	100,000	1,000,000
Church Point	-	20,000	960,000	100,000
Clarence	-	-	-	2,000,000
Cronulla	1,210,000	-	1,000,000	20,000
Brooklyn	875,000	875,000	-	20,000
Palm Beach- Basin	-	20,000	-	1,170,000
Palm Beach- Ettalong	-	-	3,000,000	100,000
Stockton	1,000,000	1,000,000	-	20,000

The capital expenditure intentions summarised in are in addition to the reported 2013/14 depreciation and interest expense. Indec understands that IPART's building block model makes an allowance for a return on capital, and a return of capital (regulatory depreciation).

4 EFFICIENCY GAPS

Indec has shared its observations with respect to individual ferry operators' performance for key efficient cost indicators in its confidential version of this report to IPART.

Indec's overall assessment of the cost inputs of ferry operators relative to efficient cost is summarised below.

- Central Coast – current costs *do not exceed* reasonably efficient cost
- Church Point – current costs *do not exceed* reasonably efficient cost
- Clarence – current costs *do not exceed* reasonably efficient cost
- Cronulla – current costs *do exceed* reasonably efficient cost
- Brooklyn – current costs *do not exceed* reasonably efficient cost
- Palm Beach (Basin) - current costs *do not exceed* reasonably efficient cost
- Palm Beach (Ettalong) - current costs *do not exceed* reasonably efficient cost
- Stockton – current costs *do exceed* reasonably efficient cost

The unaudited costs reported for 2012/13 have indicated that both Cronulla and Stockton exceed reasonable efficient OPEX costs. This is mainly due to higher staffing numbers and higher labour related costs.

It is of concern that some operators have advised that current levels of profitability do not support any capital expenditure other than the current levels of depreciation and interest. It is beyond the scope of this review to investigate the veracity of that advice. Anecdotal evidence suggests that investment decisions may be influenced by the proximity of any periodic expiry of contract terms. However, persistent under-investments or inadequate levels of CAPEX are likely to eventually prove unsustainable.

The efficient CAPEX gap has been addressed by providing efficient CAPEX estimates for the replacement and refurbishment of ferries and related equipment (Section 3.2, Table 3).

5 POSSIBLE CAUSES OF INEFFICIENCIES

There are a number of possible causes of cost inefficiency in the operations of private and Stockton that can be controlled by the ferry operator:

- asset utilisation, particularly fleet utilisation;
- service levels that exceed the minimum service levels stipulated in the Commercial Ferry Service Contracts;
- enterprise or operational scale; and
- other factors such as the age of the fleet.

Constraints and risks that cannot be directly controlled by the operator are covered in Section 7.

5.1 ASSET UTILISATION

The overall metrics of *weekday* passenger loading versus capacity by time of day are illustrated in Figure 1. Yearly load factors average 16.0% of capacity and range from 0.4% at 11:00 PM to a high of 26.6% at 3:00 PM. The metrics are significantly influenced by the inclusion of Stockton Ferries which commences services at 5:00 AM and operates last service at 11:00 PM. The analysis in Figure 1 excludes passenger loadings data from Central Coast ferries which was not available at the time of preparing this report.

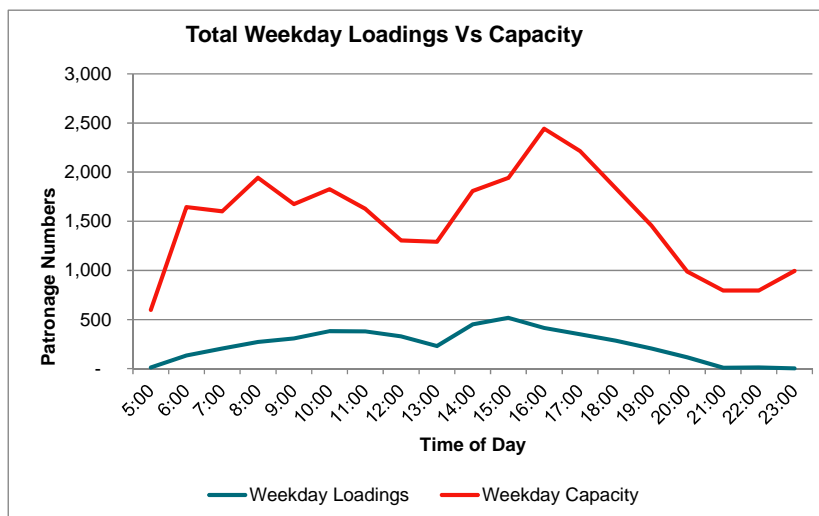


Figure 1 Passenger loadings versus Vessel Passenger Carrying Capacity by Time of Day (Weekdays)

The overall metrics of *weekday* passenger loading versus capacity by time of day *excluding Stockton* Ferries are illustrated in Figure 2. Yearly load factors average 29.4% of capacity and range from 11.8% at 6:00 AM to a high of 50.3% at 8:00 PM. The analysis in Figure 2 excludes passenger loadings data from Central Coast ferries which was not available at the time of preparing this report.

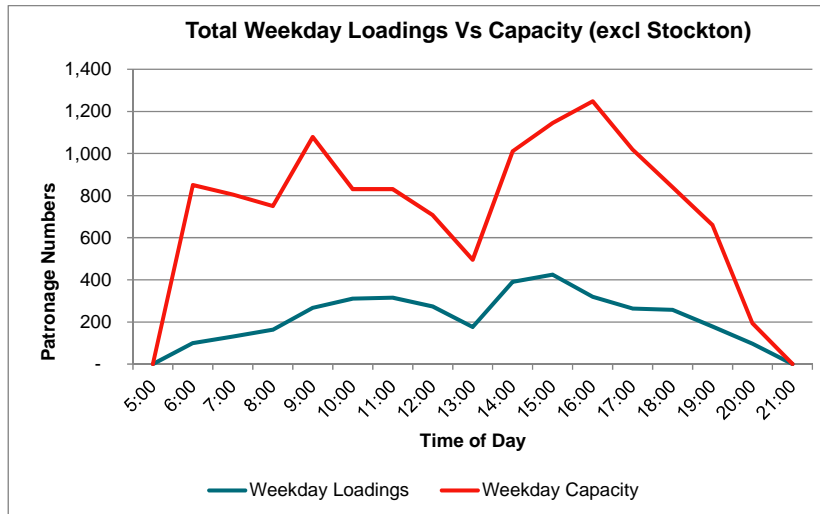


Figure 2 Passenger loadings versus Vessel Passenger Carrying Capacity by Time of Day excluding Stockton Ferries (Weekdays)

The overall metrics of *weekend* passenger loading versus capacity by time of day are illustrated in Figure 3. Yearly load factors average 20.8% and range from 1.5% at 05:00 AM to a high of 41.3% at 12:00 Noon. The metrics are significantly influenced by the inclusion of Stockton Ferries which commences services at 5:00 AM and operates last service at 11:00 PM. The analysis in Figure 3 excludes passenger loadings data from Central Coast ferries which was not available at the time of preparing this report.

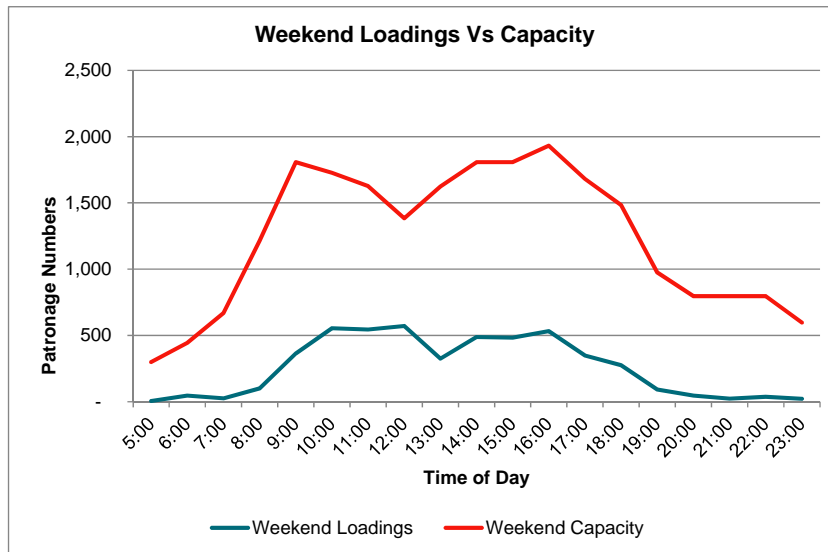


Figure 3 Passenger loadings versus Vessel Passenger Carrying Capacity by Time of Day (Weekends)

The overall metrics of *weekend* passenger loading versus capacity by time of day *excluding Stockton* Ferries are illustrated in Figure 4. Yearly load factors average 33.3% of capacity and range from 3.7% at 6:00 AM to a high of 49.5% at 11:00 AM. The analysis in Figure 4 excludes passenger loadings data from Central Coast ferries which was not available at the time of preparing this report.

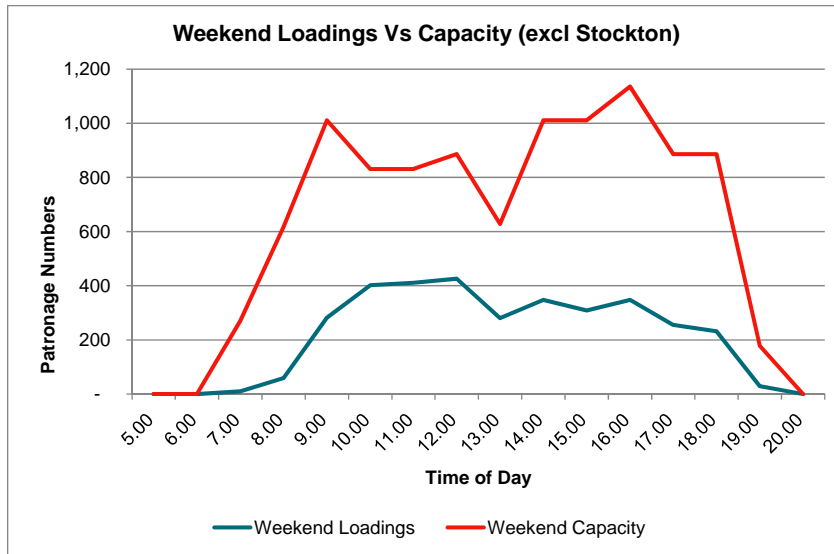


Figure 4 Passenger loadings versus Vessel Passenger Carrying Capacity by Time of Day excluding Stockton Ferries (Weekends)

Stockton Ferries

Stockton Ferries operates two ferries with a capacity of 199 passengers and commences services at 5:00 AM and operates last service at 11:00 PM (Figure 5). Yearly load factors average 5.8% of capacity and range from 0.4% at 11:00 PM to a high of 11.5% at 3:00 PM. In contrast to the commercial and non-commercial contracts with the private ferry operators which stipulate minimum service levels, the Stockton Ferries contract does not incorporate a Service Level Agreement (SLA) for weekends.

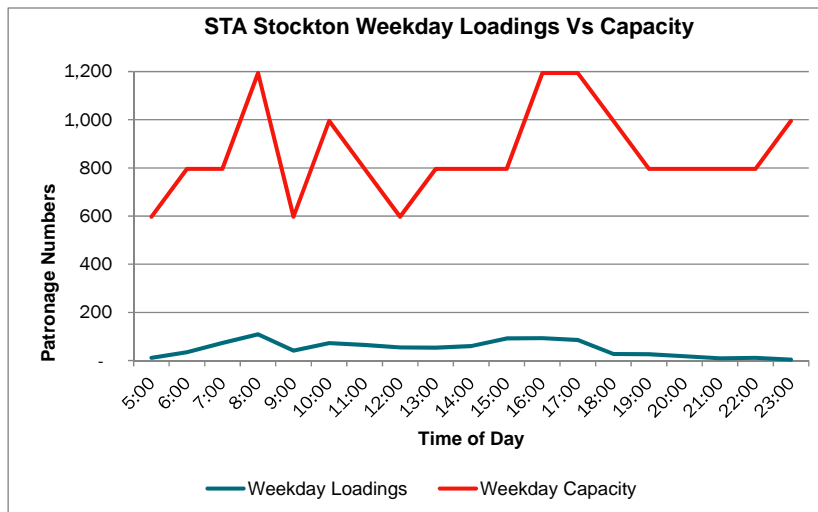


Figure 5 Stockton Ferries – Passenger loadings versus Vessel Passenger Carrying Capacity by Time of Day (Weekdays)

On weekends, yearly Stockton Ferries load factors decrease slightly to an average of 11.2% of capacity and range from 1.5 at 5:00 AM to 29.3% at noon.

The capacity utilisation analysis in this section 5.1 relies on average daily patronage data for weekdays, weekends and public holidays provided by the operators. However, patronage data provided by Transport for NSW demonstrates that fleet capacity utilisation is higher during the summer months than in winter. The apparent seasonality is clearly illustrated in Table 4 which summarises the average deviation from reported quarterly patronage for the period 2008/09 to 2012/13. Seasonal fluctuations of this magnitude clearly lower the average utilisation in the September and June quarters, but are likely to lead to full utilisation of all available capacity in the December and March quarters.

Table 4 Average Deviation from Reported Quarterly Patronage for the period 2008/09 to 2012/13

Operator	September Quarter	December Quarter	March Quarter	June Quarter
Averages	-3.3%	6.5%	6.2%	-9.4%

The quarterly seasonality for some operators is much less pronounced and is therefore not likely to materially influence the poor capacity utilisation for some operators and services.

However, as patronage data is only reported quarterly, Indec has not investigated how weekday passenger load factors may fluctuate month by month. It is possible that fleet capacity utilisation in some summer months is higher than is indicated in Table 4.

Low utilisation of assets is a cause of inefficiency.

5.2 SERVICE LEVELS

A comparison between contracted weekday service levels and time tabled services is summarised in Figure 6. The analysis excludes Stockton Ferries (STA) because the Commercial Ferry Service Contract between the Director General of the Department of Transport for and on behalf of Transport for NSW and Stockton Ferries does not incorporate a Service Level Agreement (SLA). The analysis in Figure 6 shows in aggregate, the time tabled services for weekdays exceeded the SLAs by 16.2%.

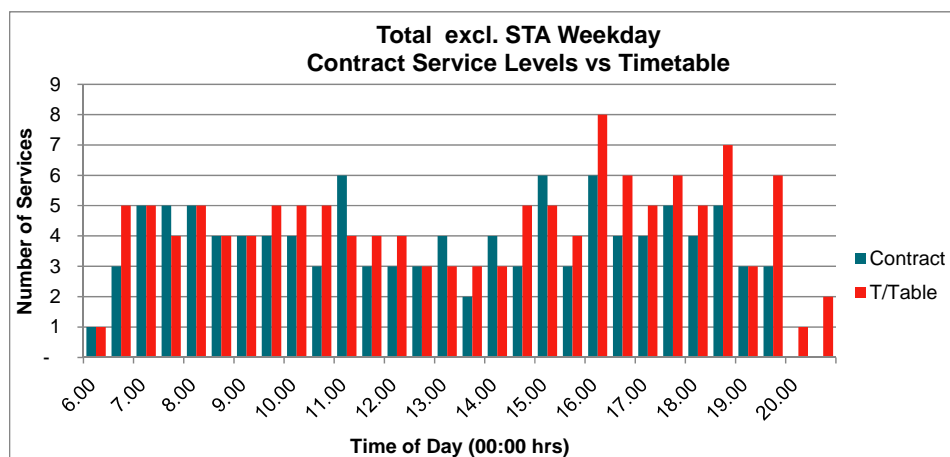


Figure 6 Contract versus Actual Time Table Service Levels by Time of Day (Weekdays)

A comparison between contracted weekend and public holiday service levels and time tabled services is summarised in Figure 7.

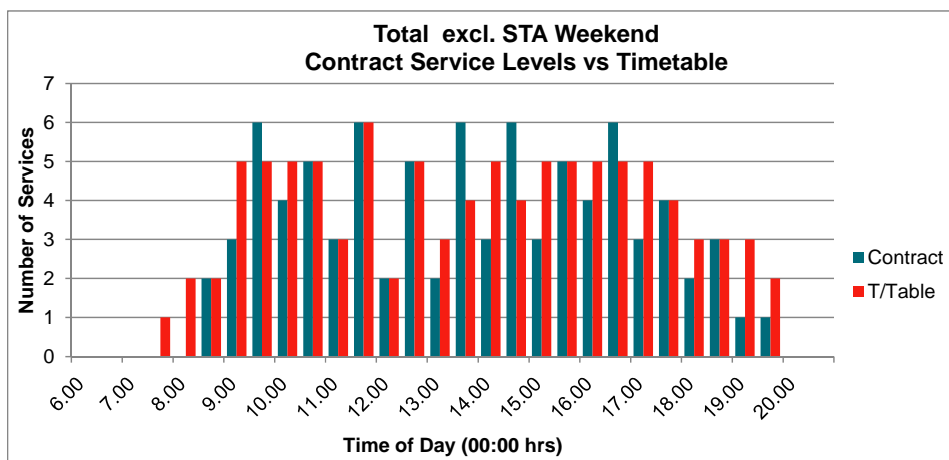


Figure 7 Contract versus Actual Time Table Service Levels by Time of Day (Weekends)

The analysis also excludes Stockton Ferries (STA). The analysis in Figure 7 shows in aggregate, the time tabled services for weekends and public holidays exceeded the SLAs by 12.4%.

A summary by operator of services in excess of contract requirements is presented in Table 5. Read in conjunction with the passenger load factors in section 5.1, not all of the additional services appear to be well patronised.

Table 5 Timetabled Services offered by Operators in addition to contracted Minimum Service Level Agreements (SLAs)

Operator	Weekdays	Weekends and Public Holidays
Totals	21	12

If poorly patronised, services operated in excess of contractual minimum service level requirements may be a cause of inefficiencies. Even though this analysis has not been extended to Stockton Ferries for reasons outlined above, Indec has noted that the service levels of that operator appear to materially exceed the service levels offered by other ferry operators both on weekdays and on weekends and public holidays, particularly early in the morning and late in the evenings.

5.3 SCALE

A number of ferry operators are Small to Medium size Enterprises (SMEs) with revenues below one million dollars per annum. Some of these businesses are conducted by owner-operators at a cost below which could be provided on a commercial basis by an unrelated party.

Viability and sustainability is at risk when businesses are unable to access capital for asset renewal and replacement.

6 OPPORTUNITIES

6.1 PATRONAGE GROWTH

Reported quarterly patronage data for all ferry operators except Stockton is shown in Figure 8. Stockton data was excluded because the data set provided only contained Stockton data for the 2012/13 year. Inclusion of the 2012/13 Stockton data would therefore have skewed the trend.

The analysis in Figure 8 shows that patronage has not grown since 2008/09 and is quite seasonal as previously canvassed in Section 5.1. We have considered this trend and conclude that the private ferries primarily service mature residential areas which are not subject to significant population growth. Some of the areas serviced by private ferries also have access to other competing public transport modes.

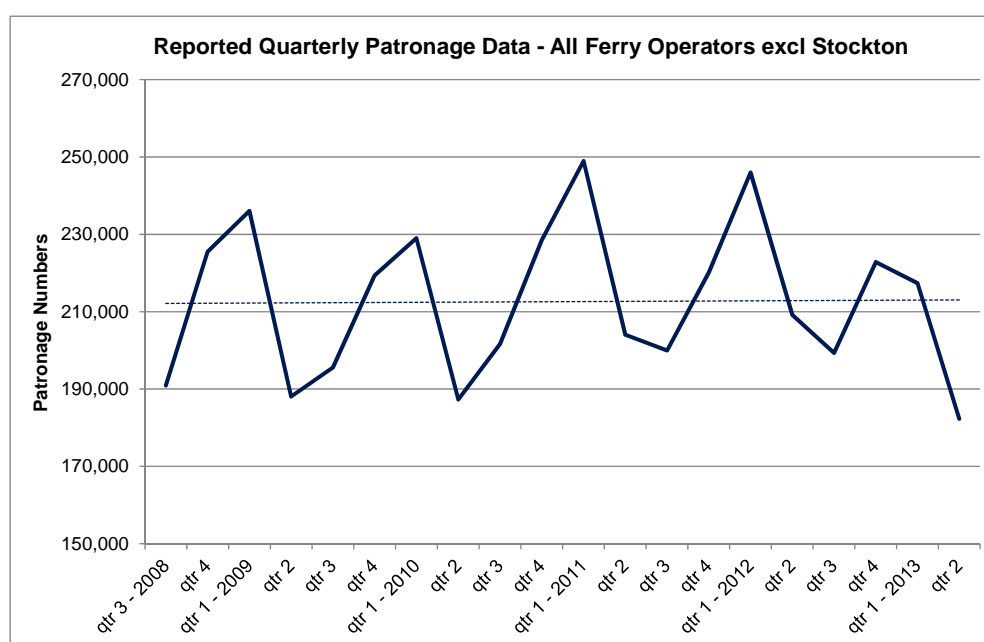


Figure 8 Reported Quarterly Patronage – All Operators Excl. Stockton

We have considered the opportunities for patronage growth and have reached the following conclusions.

- Passenger service patronage is fairly constant and represents about 95% of revenue with the balance primarily consisting of charter activity revenue.
- Non-passenger service revenue is difficult to expand for economic or logistical reasons.
- Non-service revenue is also provided by other government service subsidy and such operation is generally segregated from the contract.
- Fare discounting is achieving limited results.
- Catchment areas for concession fares are an issue in relation to other government subsidised transport modes.
- The concessional catchment area patronage planning (especially with regard to intermodal operations) is limited to a short time scale as the Director General can call for an EOI for a regional commercial service nearby and the contract term is a limiting factor.

- Some operators exceed contractually mandated service levels but the results in terms of additional patronage levels appear mixed (sections 5.1 and 5.2).

6.2 TIMETABLING AND SERVICES

Referring to the analysis of asset utilisation and service levels in sections 5.1 and 5.2 respectively, a number of timetabled and contractually specified services have been identified that appear to suffer from poor levels of patronage.

Subject to more detailed analysis, especially in relation to verifying the impact of any selective withdrawal of services on patronage, an opportunity exists to rationalise services to more closely match demand.

Excluding public accessibility and other social equity considerations, the conclusion of this review is that some rationalisation of timetabled services would improve cost efficiency. In terms of potential cost efficiency improvement opportunities, very early morning and late evening services are primary candidates for rationalisation.

Rationalisation of poorly patronised services, particularly very early morning and late evening services will increase cost efficiency.

However, any analysis of possible service rationalisation would require detailed analysis of daily load factors by time of day. Data to this level of detail is currently not readily available and such an analysis is beyond the scope of this review.

6.3 ROUTE DESIGN

We have considered the existing route design and during this brief review no obvious re-design options with potential to materially improve cost efficiency or grow ferry patronage have been identified.

6.4 FLEET

The analysis in sections 5.1 and 5.2 also highlights that the carrying capacity of some ferries may significantly exceeds demand. Therefore, subject to more detailed analysis, especially in relation to verifying the full extent of seasonality in demand for capacity, an opportunity may exist to procure smaller, more economical vessels with a carrying capacity commensurate with the level of demand. This level of analysis is beyond the scope of this review.

Material levels of seasonality could be overcome by seasonal timetables covering quarters 1 and 4 (high season) and quarters 2 and 3 (low season). Some operators use a smaller ferry during periods of low demand (the smallest ferry in an operator's fleet is generally the spare ferry).

There may be an opportunity for a general re-think of the services provided by Stockton Ferries. We have previously commented on Stockton's relatively poor passenger load factors compared to the 200 passenger carrying capacity of each one of its ferries and on the very significant layover hours which continue to incur maintenance and crew costs. Smaller ferries could operate this service on a continuous loop basis similar to some Brisbane river ferry services. Such a re-design of Stockton's service frequency and the ferry fleet could yield cost savings and attract additional patronage. Any service re-design would require a more detailed review including a cost benefit analysis which is beyond the scope of this review.

7 CONSTRAINTS

A number of constraints have been identified that may prevent ferry operators from achieving efficient costs.

7.1 TECHNICAL

- Types and age of vessels

7.2 MANAGERIAL

- Access to capital
- Constrained or marginal profitability
- Business is only saleable with a contract (refer duration and termination)
- Maximum fares and variable costs for fuel and wages (no hedging mechanism)
- Timing of fare increases against costs in arrears (cash flow)
- Patronage risk, most businesses would not be viable without the concession revenue
- Limited charter opportunities, non-service revenue and capital investment in wharves or ferries to service charters is not economic
- Council wharf issues including cost, configuration, maintenance (cost and timing) and safety
- Insurance in relation to public liability with wharf landing and quantum (reducing risk and quantum reduces premiums)

7.3 GOVERNMENT POLICY

Government policies and actions that may impact on private ferry operators achieving efficient costs are summarised below.

- For some operators, ferry life cycles and replacement capital may not have been factored into fares. Historically, fares for some services may or may not have been adequate to cover ferry replacement capital.
- Major periodic maintenance life cycles and related costs may or may not have been factored into fares (e.g., ferry refurbishment and engine replacement).
- Regulatory determination of fares
- Contract period is typically fixed at 5 years which is too short a time frame to optimise goodwill and amortise capital and major periodic maintenance (i.e., capital expenditure decisions may be influenced by the proximity of contract expiry dates).
- Competition from other public transport modes (i.e., bus)
- Limited catchment areas for concession and student fares (limited to the Regional Service Area)
- Non-exclusive schedules and routes and third party access threats (the Director General can call for tenders for regional bus services in any nearby area)
- Some services specified in the contracts are not well patronised.

8 RESPONSE TO SUBMISSIONS

Two private ferry operator provided submissions to IPART in response to the public report and to the public hearing that are relevant to this report. The issues raised in these two submissions, along with comments made at the public hearing, have been addressed in this section.

8.1 CHURCH POINT

8.1.1 Operating and Maintenance Costs

Submission

"The use of existing actual costs as a basis for determining efficient costs effectively penalises operators for efficiency. It has been previously recognised that private ferry operators in NSW operate in a constrained environment with many tasks undertaken in a "family business" manner with the true costs of those tasks never appearing in company accounts."

"Enshrining this cost base as the efficient cost base and then fixing the maximum fare accordingly fails to recognise the very lean nature of the operation. This is of particular significance if the cost of an alternative, government run, operation to provide this necessary service is considered."

Response

Indec has based its assessment on the reasonableness of the operators' reported costs in the CIE survey. For the purpose of this review, reported costs assessed as 'reasonable' have been deemed efficient. Indec assumed that information provided by each operator was correct and complete.

In section 3 of this report, Indec has acknowledged that the 2012/13 cost structures reported by some operators are below a viable and sustainable efficient cost level.

Indec has assessed 2012/13 costs for each operator based on the information provided by that operator in the CIE survey and previous surveys, and has benchmarked those costs with other comparable organisations including other ferry operators. As a result of this benchmarking, for some operators including Church Point, Indec recommended benchmark costs that are higher than the operators' reported costs.

Submission

"The owner of Church Point Ferry Service works within the business, but does not draw a salary, significant reinvestment has been made with a view to increasing efficiency, building the asset base and eventual improved returns. Omission of this salary artificially reduces the cost base."

Response

In section 3 of this report, Indec acknowledged that: "several slow ferry operators have previously indicated that not all labour has been costed and accounted for in previous surveys". Anecdotal evidence suggests that there are a number of owner operators that do not charge the business for all the time they spend in the business, either as salary/wages or owner's drawings. As a consequence, labour expense could be understated, particularly in the slow ferry operator sector.

However, in its efficient OPEX analysis, Indec has assumed that the operators followed the instructions of the CIE survey and reported all FTEs including owner's labour.

Indec has assessed 2012/13 labour costs for each operator based on the information provided by that operator in the CIE survey and previous surveys, and has benchmarked labour costs with other comparable organisations including other ferry operators and the ferry operator awards. As a result of this benchmarking, for some operators including Church Point, Indec recommended benchmark labour costs that are higher than the operators' reported labour costs.

Submission

"There are many other costs that are not included such as

- *Office space (work from home)*
- *Spare parts storage space (Kept at mechanics garage)*
- *Bathroom facilities for staff (non-existent)*
- *Personal cars being used for company business (no reimbursement)*
- *Uniforms (do not include Wet weather clothes, pants shoes etc. Kept at a minimum due to cost constraints)*
- *Advertising and Marketing kept to free or minimum cost.*

Many other costs that a professionally run business would have."

Response

In section 3.1 of this report, Indec has provided a list of 'Other Costs' by category (table 1). Many of the expense categories raised in the submission are covered in one or more of these 'Other Costs' categories. Indec also notes that its assessment of 'Church Point's' efficient 'Other Costs' significantly exceeds the actual costs that operator incurred in 2012/13 (an increase of just under 50%).

Upon further review, Indec confirms that it considers its previous assessment of efficient costs in this category allocated to Church Point to be adequate.

8.1.2 Allowance of a Return of Capital

Submission

"The return on capital is purely based on assets held, there is a substantial sum invested in the goodwill of the ferry service operating with a secure government contract. No allowance is made for a return on this."

Response

In considering efficient CAPEX, Indec excludes goodwill and other intangible assets. Establishing a return on capital was not included in Indec's scope.

8.1.3 Economic Useful Life

Submission

"This has been assumed at 25 years for slow ferries and 15 years for fast ferries, but often differs dramatically. I would question whether or not the building material, and or nature of the vessel has a stronger correlation to its useful economic life than its speed.

I believe that aluminium ferries may need replacing before the 25 years is reached."

Response

Indec has further reviewed this matter with marine engineers and other sources who advised that the economic useful life of ferries is far greater than that indicated in this report. If the assets are purchased new and properly maintained, useful life could be in the vicinity of 50% to 100% longer than Indec has indicated in this report. Based on that advice, Indec considers that its useful life estimates are realistic if not somewhat conservative.

Indec also notes that if some hull construction materials for slow ferries do not have the durability required, other options are available and should be explored.

8.1.4 Engine Replacement

Submission

"Indec has assessed mid-life engine replacements every 7.5 years for fast ferries and 12.5 years for slow ferries. However, most engine manufactures recommend a rebuild after 10,000 hours and replacement after 20,000 hours, which in our case is a rebuild after 3 years, and a replacement every 6 years."

Response

Indec has considered and evaluated this information and restructured the efficient CAPEX estimates based on the above criteria for all ferry operators. Appropriate amendments have been made in this final report.

8.2 BROOKLYN FERRY SERVICES

8.2.1 Contractual Period Constraint

Submission

"With respect to the concept of fleet renewal or refit and repowering of existing vessels where the operators of these services wish to undertake these projects (fleet renewal or major refit of aged (often heritage) vessels, or replacement and repower current assets), the costs factors encountered mean that profit margins and cash flow projections are severely affected or depleted for a considerable number of years after the fact. This does not equate to an immediate or reasonable return on capital investments and improvements or repayment of capital costs expended in the purchase of any new vessel, unless over a long term contract period. In our case, the limited nature of our particular contract, essentially means that these options are either taken as a conscious decision to run the business at an economic loss for the contract period with the view towards increasing the asset value of the business, or would only be undertaken at the expense of FTE paid staff positions or by accepting the impacts on the long term profitability of the business venture, which would in turn reflect on the external benefits of the service in the community."

Response

In section 7.3, Indec referred to a number of Government policies and actions that may impact on private ferry operators achieving efficient costs.

One of these constraints addresses this issue raised by Brooklyn:

“Contract period is typically fixed at 5 years which is too short a time frame to optimise goodwill and amortise capital and major periodic maintenance (i.e., capital expenditure decisions may be influenced by the proximity of contract expiry dates)”.

8.2.2 Other Issues

Submission

A range of other issues including but not limited to references to patronage, fare modelling and market restrictions.

Response

Outside of Indec's scope.

8.3 PALM BEACH FERRY SERVICE

8.3.1 Repairs and maintenance costs

Comment at public hearing

“From our indications, as our ferries grow older, the repairs and maintenance costs escalate. Also, our insurance companies and surveyors expect us to spend 10 per cent at least as repairs and maintenance on our vessels against the asset base. Just looking at our figures for our business, it appears that those costs are almost half of what we provided as our costs for the last financial year.”

Response

As Indec noted during the public hearing, there was a peak cost for repairs and maintenance reported by Palm Beach in the CIE data in 2012/13. This was far in excess of the average for the prior 4 years. Indec considers its assessment of efficient costs in this category allocated to Palm Beach to be adequate.

APPENDIX A

BASE DATA

Inputs provided to Indec by IPART for the purpose of this review are:

- patronage data for each ferry operator from 2008/09 to 2012/13 excluding STA Newcastle where only the most recent financial year patronage data was available (this data has been provided to TfNSW and is unaudited); and
- cost data collected as part of a 2013 survey of private ferry operators.

In 2013 The Centre for International Economics (CIE) undertook a survey of seven private and Stockton ferry operators for the five years from 2008/09 to 2012/13. The survey data contained generic financial and high level operational information.

Additional operational data was requested directly by Indec from each ferry operator relating to the 2012/13 financial year only. The CIE data was supplemented as shown in Table 6 below.

Table 6 Operational Data Requested 2012/13

Operational Data Requested	Central	Church	Clarence	Cronulla	Brooklyn	Palm Beach	STA
Confirm annual kilometres	✓	✓	✓	✓	✓	✓	✓
Average time per trip	✓	✓	✓	✓	✓	✓	✓
Number of trips per annum	✓	✓	✓	✓	✓	✓	✓
Engine running time	✓	✓	✓	✓	✓	✓	✓
Average ferry capacity	✓	✓	✓	✓	✓	✓	✓
Fuel volumes per annum	✓	✓	✓	✓	✓	✓	✓
Patronage volumes per annum	✓	✓	✓	✓	✓	✓	✓
Patronage volumes per day by trip		✓	✓	✓	✓	✓	✓
Current Contracts	✓	✓	✓	✓	✓	✓	✓

In addition to the information provided by IPART, Indec has referred to:

- Consultant's Report – CIE – Private Ferries Cost;
- Draft Report – Review of maximum fares for private ferry services and the Stockton ferry service for 2014;
- Final Report and Recommendations - Review of maximum fares for private ferry services and the Stockton ferry service for 2014; and
- Determination – Stockton Ferry Service – December 2013

CURRENT OPEX

Operational Expenditure (OPEX) was obtained from the CIE surveys provided by IPART. This information in most cases was confirmed with each operator to ensure it was accurate and portrayed the true financial performance of the ferry operations regarding regulated services only. The cost per ferry hour for the slow ferry services varies substantially between operators and the weighted average is approximately \$129.80 per ferry hour. Indec has assumed that in accordance with standard accounting conventions the 2013 CIE survey cost data excludes GST.

Labour

Labour costs vary substantially for slow ferry service operators and average approximately \$79.51 per ferry hour.

The number of Full Time Equivalent staff (FTE's) ranges from 2.5 to 15.0 averaging 5.9 FTE per ferry operator. The number of FTE's per ferry highlights some substantial differences; the range is from 1.3 to 7.5 averaging at 2.5 FTE's per ferry.

The labour cost per FTE average at approximately \$61,763 per annum. As the makeup of the FTE numbers has not been established, separating between drivers (ferry masters), maintenance staff and administration staff could not be verified.

Fuel

Fuel costs vary substantially for slow ferry services and average approximately \$10.74 per ferry hour. The fuel cost per litre will have an impact on the cost per hour. The average fuel cost per litre is \$1.47 with one operator incurring a higher cost of \$2.12 per litre than the average which may be due to the distance from a metropolitan region.

The fuel used per kilometre also varies substantially from 0.47 to 3.49 litres per kilometre, the weighted average is 1.76.

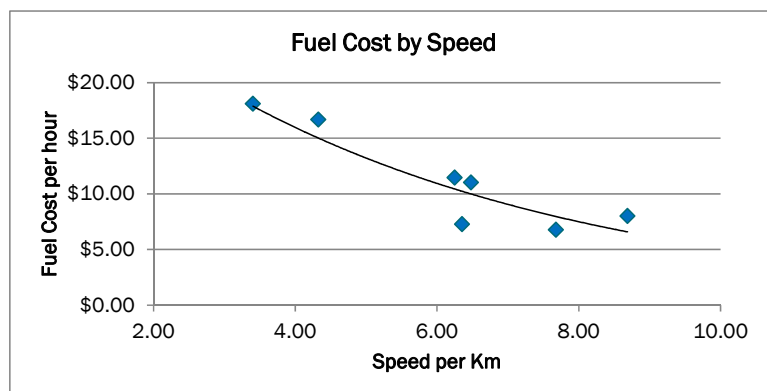


Figure 9 Fuel Costs by Speed 2012/13

There is a correlation between the average speed of the ferry and the fuel cost per kilometre, as shown in Figure 9 above.

Insurances

Insurance costs per kilometre range from \$4.51 to \$9.16 per ferry hour, averaging approximately \$6.79 per hour.

Repairs and Maintenance

Repairs and maintenance costs per service hour average approximately \$16.50 per hour. There is a correlation between repairs and maintenance costs and ferry age which is surprisingly opposite to what would be expected. The older the ferry the less the repairs and maintenance costs are per kilometre. This is illustrated in Figure 10 below.

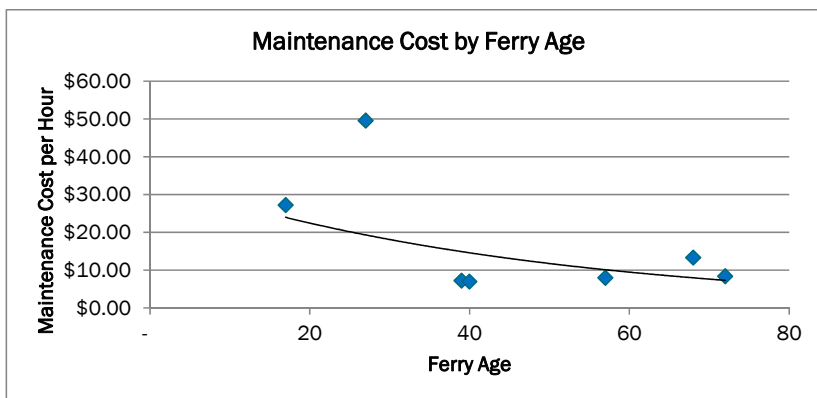


Figure 10 Repairs and Maintenance costs by Ferry Age 2012/13

As would be expected, there is a correlation between the ferry engine hours and the maintenance costs as shown in Figure 11 below; the higher the engine hours, the higher the repairs and maintenance costs.

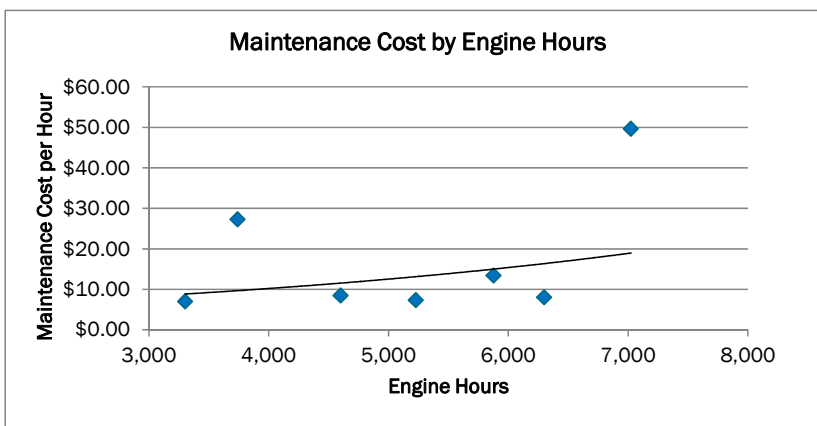


Figure 11 Repairs and Maintenance costs by Engine Hours 2012/13

The impact on repairs and maintenance costs if the function is outsourced or if ferries are maintained internally could not be established at this time.

Berthing and Mooring

Berthing and mooring costs per kilometre average approximately \$2.28 per hour. At the time of writing this report, it has not been established who owns the berthing facilities however, STA Newcastle does not incur any berthing and maintenance costs.

All Other Costs

All other ferry costs per kilometre average approximately \$13.98 per hour.

FLEET

The average age of the fleet is approximately 45 years for slow ferries. The age of ferries ranges individually from three to 90 years. The build of the ferry fleet is mixed. Some ferries are single hulled and several are catamarans. Each operator maintains two ferries. Typically only one of those ferries is operational at any one time. The other ferry is typically an operational or maintenance spare.

Generally, ferries are operated by two or more crew. However, in case of small ferries regulations permit a one person operation provided that the ferry egress point is close to the vessels controls including steerage. Vessel passenger carrying capacity ranges from 45 to 199 passengers.

CURRENT OPERATING METRICS

The total annual kilometres travelled by slow ferries in 2013 is 217,109. The total annual slow ferry regulated service hours was 29,036.

Ferry speeds range from 3.91 to 10.76 kilometres per hour, averaging approximately 7.48 kilometres per hour. Expressed in nautical terms, the average speed is 4.04 knots. **Figure 12** below shows trip time and average speed for each ferry operator. The trip times range from 5 minutes to 45 minutes averaging approximately 26 minutes per trip.

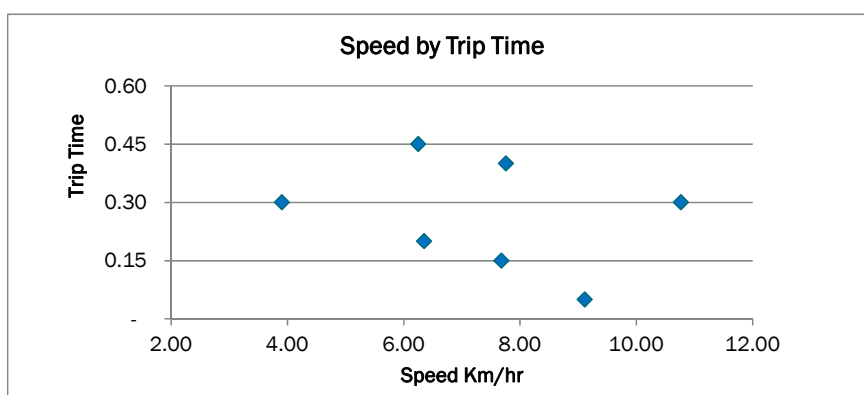


Figure 12 Speed versus Trip time (2012/13)

Slow ferry operators carried approximately one million patrons per annum compared to their total carrying capacity of 8.7 million passengers. This means that annually ferries are running at approximately only 12% capacity and spare capacity totals approximately 7.7 million passengers per annum. However, within this sample, ferries of some operators are more heavily utilised than others.

The fast ferry operator has an annual carrying capacity of 1.1 million passengers and the average annual patronage is approximately 206,504 passengers. This means that annually ferries are running at only 19% capacity and spare capacity totals approximately 870,000 passengers per annum.

Service levels

Indec was able to ascertain the contracted service levels from the current contracts provided by TfNSW. Service levels have been audited against current advertised timetables for each operator excluding STA. STA Newcastle's current contract does not stipulate service levels. Indec has established that for weekday services, there are approximately 16% more services provided per day (excluding STA) than the contract service levels. No ferry operator provides fewer timetabled services than mandated in the contracts.