DRAFT PUBLIC REPORT

Private ferry services

Review of maximum fares from 1 January 2018

Prepared for
IPART

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Executive summary

IPART is determining maximum fares for the private ferry industry for the four years between 2018 and 2021. To assist IPART's fare review we have assessed the efficiency of operators reported operating and capital costs for the review period.

The efficiency of operators' reported costs was assessed by reference to cost benchmarks from previous reviews of the industry and by examining annual changes in costs. It is important to note the private ferry industry is a small scale industry, often operated by family owned businesses and is extremely heterogeneous in nature with different service routes, business structures and patronage characteristics. Due to these industry characteristics, it is not possible to definitively determine whether an operator is efficient. Rather we consider whether operators are reasonably efficient.

Indec previously determined cost benchmarks for total operating cost, labour cost, repairs and maintenance and other operating costs per service hour for the private ferry industry.[1] These cost benchmarks were indexed to current dollars with the following adjustments made for this review:

- labour cost benchmark — adjusted for recent growth of 3.3 per cent per annum in real terms across the industry and adjusted for ferry services with 2 or 3 operators.
- 'other operating' cost benchmark — adjusted to reflect that an average 40 per cent of 'other operating' costs relate to the number of staff employed, for example, training, uniform and motor vehicle expenses.
- total operating cost benchmark — adjusted to account for amendments to labour cost and 'other operating' cost benchmarks and also to reflect operators' reported fuel, insurance and mooring costs for the review period.

Key findings from our assessment with regards to total operating costs are:

- Brooklyn's total operating costs are below the cost benchmark
- Church Point's total operating costs are below the cost benchmark
- Total operating cost for Cronulla and both Palm Beach ferry services exceed the cost benchmark (table 1).

1 Indec, 2014, *Efficient Costs of Providing Private and Newcastle-Stockton Ferry Services,* Prepared for IPART,

1 Reported operating costs relative to cost benchmark

Operating cost item	Brooklyn	Church Point	Cronulla	Palm Beach (Mackerel)	Palm Beach (Ettalong)
Labour	Below	Below	Above	Above	Above
Fuel	All operators' reported fuel costs deemed reasonably efficient				
R&M	Above	Above	Above	Above	Below
Insurance	All operators' reported insurance costs deemed reasonably efficient				
Mooring	All operators' reported mooring costs deemed reasonably efficient				
Other operating costs	Above	Below	Above	Above	Above
Total operating cost	**Below**	**Below**	**Above**	**Above**	**Above**

Source: CIE.

Key findings from our assessment with regards to capital expenditure are:

- Capital expenditure in the 2018-21 fare determination period should be allocated for engine works or general refurbishment as all service providers were allocated capital amounts for the acquisition of new ferries at some point between 2015 and 2017 (excluding for vessels Banksia and Amelia K as part of the Brooklyn and Church Point services respectively).
- Service providers continue to maintain their older vessels, rather than acquiring new vessels, even though the capital allowance has been provided.

Key findings specific to each ferry service are outlined below.

Brooklyn

- Total operating costs — do not exceed the cost benchmark.
- Labour —total labour cost and labour cost per FTE do not exceed the cost benchmarks.
- Repairs and maintenance costs —exceed the cost benchmark.
- Other operating costs — exceed the cost benchmark.
- Total capital intentions — exceed the efficient recommended allowance.
- One engine rebuild and one engine replacement is recommended over the determination period, as well as refurbishments of both vessels.

Church Point

- Total operating costs — do not exceed the cost benchmark.
- Labour cost —labour cost per FTE is approximately equal to the benchmark, total labour cost per service hour does not exceed the cost benchmark.
- Repairs and maintenance costs — exceed the cost benchmark.
- Other operating costs — do not exceed the cost benchmark.
- Total capital intentions — exceed the efficient recommended allowance.
- An allowance is recommended for one engine rebuild and one replacement based on the number of service hours, as well as refurbishment for all vessels.

Cronulla

- Total operating costs — exceed the cost benchmark.
- Labour cost — labour cost per FTE is below the cost benchmark. Labour cost per service hour exceeds the cost benchmark.
- Repairs and maintenance cost — exceeds the cost benchmark.
- Other operating costs — exceed the cost benchmark -
- Total capital intentions – do not exceed the efficient recommended allowance.
- An allowance is recommended for one engine replacement and one engine rebuild based on the number of service hours as well as refurbishment for both vessels.

Palm Beach (Mackerel)

- Total operating costs — exceed the cost benchmark.
- Labour cost — labour cost per FTE exceeds the cost benchmark. Labour cost per service hour also exceeds the cost benchmark.
- Repairs and maintenance costs — exceeds the cost benchmark.
- Other operating costs — exceed the cost benchmark
- Total capital intentions — exceed the efficient recommended allowance.
- An allowance is recommended to refurbish both vessels.

Palm Beach (Ettalong)

- Total operating costs — exceed the cost benchmark.
- Labour cost — labour cost per FTE exceeds the cost benchmark. Total labour cost per service hour exceeds the cost benchmark.
- Repairs and maintenance costs — does not exceed the cost benchmark.
- Other operating costs — exceed the cost benchmark.
- Total capital intentions — exceed the efficient recommended allowance.
- An allowance is recommended for one engine rebuild and one engine replacement based on the number of service hours as well as refurbishment for both vessels.

1 Introduction

Private ferry regulation

Private ferry services are provided by seven operators, most of which are small operators. Each serves distinct routes in the Sydney, Central Coast and North Coast areas of NSW and therefore do not compete with each other. The ferry services covered by this review are listed in table 1.1.

1.1 Ferry services included in IPART's review

Operator	Routes
Brooklyn Ferry Service	Brooklyn to Dangar Island
Central Coast Ferries	Woy Woy to Empire Bay
Church Point Ferry Service	Scotland Island and western foreshore of Pittwater
Clarence River Ferries	Iluka to Yamba
Cronulla and National Park Ferry Service	Cronulla to Bundeena
Matilda Cruises	Circular Quay to Darling Harbour Circular Quay to Lane Cove
Palm Beach Ferry Service	Palm Beach to Mackerel Beach and the Basin Palm Beach to Ettalong and Wagstaff

Source: IPART.

IPART's regulation of private ferry services

IPART has been regulating maximum fares for private ferry services for several years. IPART has previously recommended maximum fares for each year for private ferry operators. For IPART's current review, IPART will determine maximum fares for four years from 1 January 2018 to 31 December 2021 based on its building block approach.

The building block approach estimates the total revenue a business needs to recover the efficient costs of providing the regulated services. The building block approach typically includes the following components:

- An efficient level of operating expenditure (operating, maintenance and administration expenses)
- An allowance for a return on assets that ferry operators used to provide the contracted services
- An allowance for a return of those assets (depreciation), and
- An allowance for tax and working capital.

Central Coast Ferries and Matilda Cruises face a high level of competition for customers and currently charge below the maximum regulated fare. IPART invited Central Coast and Matilda Cruises to propose maximum fares but did not consider it necessary to review their costs to estimate efficient fares.

For the remaining operators, IPART decided to take a more rigorous approach as they face little or no competition and invited operators to submit proposed maximum fares supported by pricing proposals.

Table 1.2 outlines ferry operators' proposed maximum fares for the review period.

1.2 Ferry operators' proposed maximum fares from 2018 to 2021 ($nominal, including GST)

Private ferry service	Current maximum fare	2018	2019	2020	2021
Brooklyn Ferry Service	7.30	7.60	8.00	8.40	na
Central Coast Ferries	7.80	ΔCPI	ΔCPI	ΔCPI	ΔCPI
Church Point Ferry Service	8.30	8.65	9.00	9.40	9.70
Clarence River Ferries	8.30	Did not propose fares			
Cronulla and National Park Service[a]	6.40	6.56	6.71	6.89	7.06
Matilda Cruises - Circular Quay to Darling Harbour	7.40	ΔCPI	ΔCPI	ΔCPI	ΔCPI
Matilda Cruises - Circular Quay to Lane Cove	7.40	ΔCPI	ΔCPI	ΔCPI	ΔCPI
Palm Beach Ferries - Palm Beach to the Basin	8.10	8.60	8.90	9.20	9.50
Palm Beach Ferries - Palm Beach to Ettalong & Wagstaffe	11.60	12.10	12.40	12.70	12.90

[a] Cronulla's proposed fares have been updated to reflect revised fare proposal sent to IPART on 3 July 2017.

Note: Brooklyn did not provide a fare proposal for 2021.

Source: IPART, 2017, *Review of maximum fares for private ferry services: Fares to apply from 1 January 2018 to 31 December 2021,* Issues Paper June 2017.

Indec's 2014 and 2015 review

Indec was previously commissioned by IPART to estimate the efficient costs of providing private ferry services in the 2014 and 2015 fare reviews.

Operating expenditure

In terms of operating expenditure, Indec reported:

- for the 2014 review that current operating costs did not exceed reasonably efficient costs for five out of six private ferry services reviewed
- for the 2015 review that current operating costs did exceed reasonably efficient costs for three of the four private ferry services reviewed (table 1.3)

1.3 Indec's review of ferry operators cost efficiency

Ferry service	Indec's 2014 review finding	Indec's 2015 review finding
Brooklyn	▪ Operating costs do not exceed reasonably efficient cost	▪ Operator costs do not exceed reasonably efficient costs
Church Point	▪ Operating costs do not exceed reasonably efficient cost	▪ Operator cost exceed reasonably efficient cost
Clarence	▪ Operating costs do not exceed reasonably efficient cost	▪ Did not submit capital and operating cost information
Cronulla	▪ Operating costs exceed reasonably efficient costs	▪ Did not submit capital and operating cost information
Palm Beach (Mackerel)	▪ Operating costs do not exceed reasonably efficient cost	▪ Operator costs exceed reasonably efficient cost
Palm Beach (Ettalong)	▪ Operating costs do not exceed reasonably efficient cost	▪ Operator costs exceed reasonably efficient cost

Source: Indec, 2014, *Efficient costs of providing private and Newcastle-Stockton ferry services,* Public Report prepared for IPART, October 2014 and Indec 2015, *Efficient costs of providing Brooklyn, Church Point and Palm Beach ferry services,* Public Report prepared for IPART 2015.

Capital expenditure

Indec independently assessed the efficient capital expenditure for ferry replacement for the years between 2015 and 2017 (table 1.4). They assumed a useful economic life of vessels as 25 years for slow ferries and 15 years for fast ferries however most ferries have an average economic life that well exceeds these timeframes as a result of operational practices.

1.4 Indec's efficient capital expenditure between 2015 and 2017

Operator	2014/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

Source: Indec, 2014, *Efficient Costs of Providing Private and Newcastle-Stockton Ferry Services,* Prepared for IPART

Reasonable and efficient operating cost benchmarks

Indec assessed ferry operators' pricing proposals and determined efficient cost benchmarks for labour, repairs and maintenance, and other operating costs (table 1.5). Indec took operators' fuel, berthing and mooring, interest and insurance costs as reasonable and estimated an efficient benchmark for other cost categories.

1.5 Summary of Indec's approach to estimating efficient costs by category

Cost component	Indec's approach
Operating costs	
Labour	Efficient labour costs estimated as (2014 dollars): ▪ $52 per service hour (1 operator) ▪ $69 per service hour (2 operators) ▪ $128 per service hour (3 operators)
Fuel	Reported costs taken as reasonably efficient
Berthing and mooring	Reported costs taken as reasonably efficient
Interest	Reported costs taken as reasonably efficient
Insurance	Reported costs taken as reasonably efficient
Repairs and maintenance	Efficient cost estimated as (2015 dollars): ▪ $9.32 per service hour for 'slow' ferries ▪ $23.35 per service hour for 'fast' ferries
All other	Efficient cost estimated as $10.70 per service hour
Capital costs	
Return on capital	Based on efficient capex profile + existing capital
Return of capital	Based on efficient capex profile + existing capital

Source: Indec 2015, *Efficient costs of providing Brooklyn, Church Point and Palm Beach ferry services,* Public Report prepared for IPART

IPART has commissioned CIE to assess whether private ferry operators' costs for the review period are efficient.

Benchmarking across small scale ferry operators has its limitations, namely due to differences in routes, history (such as fleet choices), service level obligations and business structures. Nonetheless benchmarking across operators provides a sensible range for efficient costs, to identify outliers.

We compare cost metrics across operators and against industry cost benchmarks to determine whether cost forecasts are reasonably efficient, and whether cost changes expected by operators are reasonable.

2 Operating costs

Total operating costs for Brooklyn, Church Point, Cronulla, and Palm Beach ferry services are assessed. All operators submitted pricing proposals to IPART for this fare review, except for Clarence River.

Pricing proposals include current costs for 2017 and forecasted costs for the four years of the review period between 2018 and 2021. Each pricing proposal estimated the following operating cost components:

- Labour — wages, workers compensation, payroll tax and superannuation for all permanent full-time and part-time staff and any casual employees employed directly by the operator
- Fuel — include the cos of fuel in relation to the provision of regulated ferry passenger services net of any fuel tax credits (excise rebates)
- Repairs and maintenance— should only include parts and consumable costs relating to the repair and maintenance of ferries, e.g. internal and contracted ferry maintenance.
- Insurance — should include all insurance premium expenses other than ferry insurance, e.g. public liability.
- Mooring — the annual rent paid for mooring/berths in relation to the provision of ferry passenger services.
- Electricity
- Other — includes all other operational costs that aren't accounted for in the above categories, e.g. cash collection costs, office rent, communication costs, financial services, external consultants, advertising, consumables and uniforms.

Some operators also included cost estimates for interest and lease payments relating to vessel ownership. Under the building block approach, these costs are addressed in IPART's estimate of return on and of capital. Hence these costs have not been included in the estimate of operating costs.

In some cases forecasted costs were provided in nominal terms. In these cases, costs were deflated to real teams (2017 dollars) based on an average CPI of 2.5 per cent.

Clarence River did not submit capital and operating cost information to IPART for this review, nor responded to our emails requesting time to discuss their position for this review. In the absence of further information from Clarence River benchmark costs have been estimated based on industry cost benchmarks for labour, repairs and maintenance, and other operating costs, and an industry average cost per service hour for fuel, mooring and insurance.

Reported total operating costs

Reported operating costs increase for all operators from 2017 to 2021 (in real terms) between 0.4 per cent and 2.8 per cent per annum.

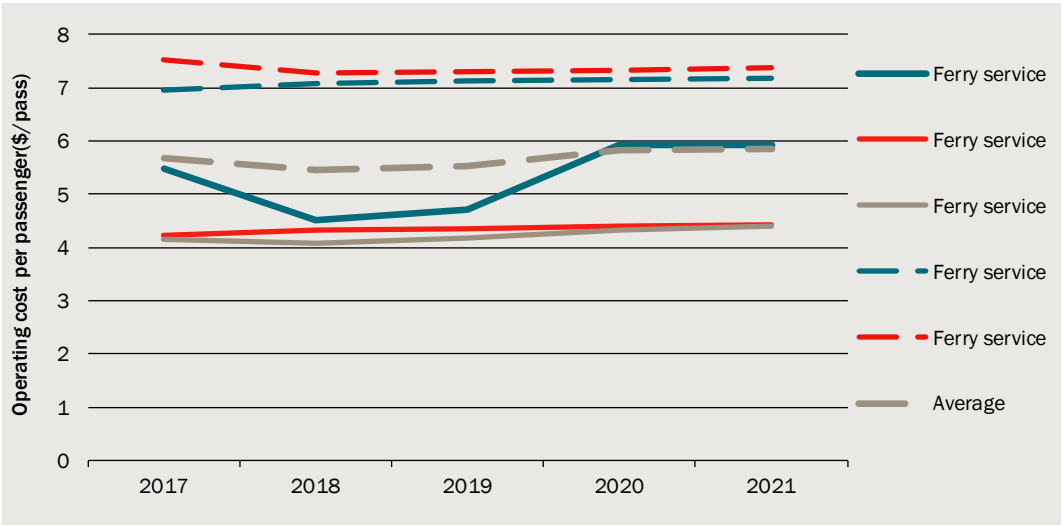
Private ferry operators provided operating cost data to IPART in 2013.[2] Since 2013, reported operating costs have increased by an annual average of between 2.9 per cent to 5.6 per cent each year in real terms across all services. Operating costs are forecast to continue to increase by between 0.4 per cent and 2.8 per cent per year over the review period for all operators. Forecasted annual growth is lower than recent annual growth for all operators.

In 2017, labour cost contributed the largest proportion of total operating costs for the majority of operators.[3] Fuel contributed between 4 per cent and 14 per cent of total operating cost across the five ferry services. For the majority of operators, between 10 per cent and 12 per cent of total operating cost was spent on repairs and maintenance.

Total operating cost per passenger

Operating cost per passenger increases over the review period (between 2018 and 2021) for all ferry services, driven by increases in total operating costs (chart 2.1). Operating cost per passenger increases by between 0.5 per cent and 14.5 per cent per annum, with an average increase across ferry services of 3.8 per cent per annum.

2.1 Reported current and forecasted operating costs per passenger (2017$)



Note: Freight trips have been excluded.

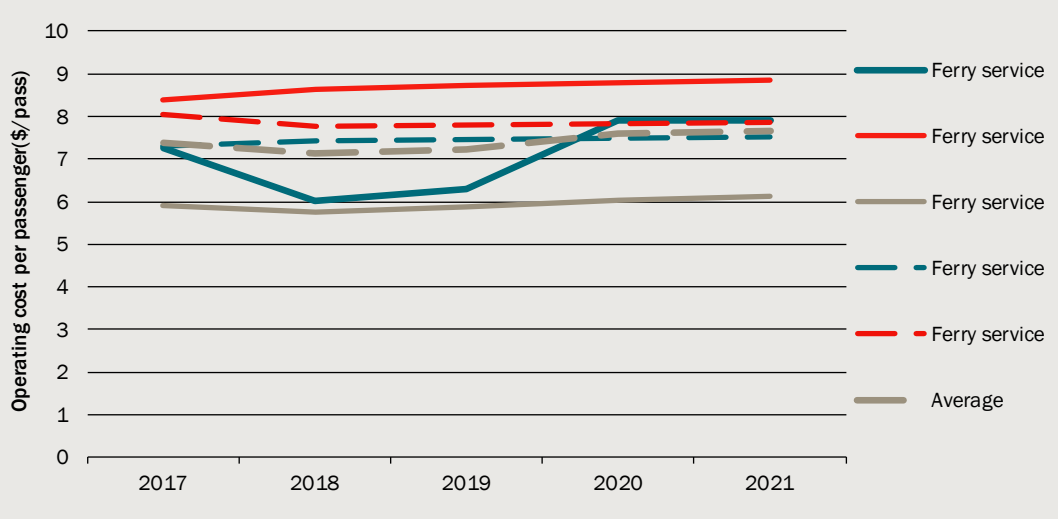
Data source: CIE based on cost data provided in ferry operators' pricing proposals.

2 Brooklyn, Church Point and Palm Beach also reported costs to IPART in 2015.

3 Operators who reported cost information to IPART for this fare review. Clarence River did not submit capital and operating cost information.

Operating cost per passenger increases by between 33 per cent and 100 per cent for three ferry services when student travel is excluded from patronage (chart 2.2). This reflects the high proportion of patronage contributed by student travel on these services.

2.2 Reported current and forecasted operating costs per passenger (2017$) – excluding SSTS



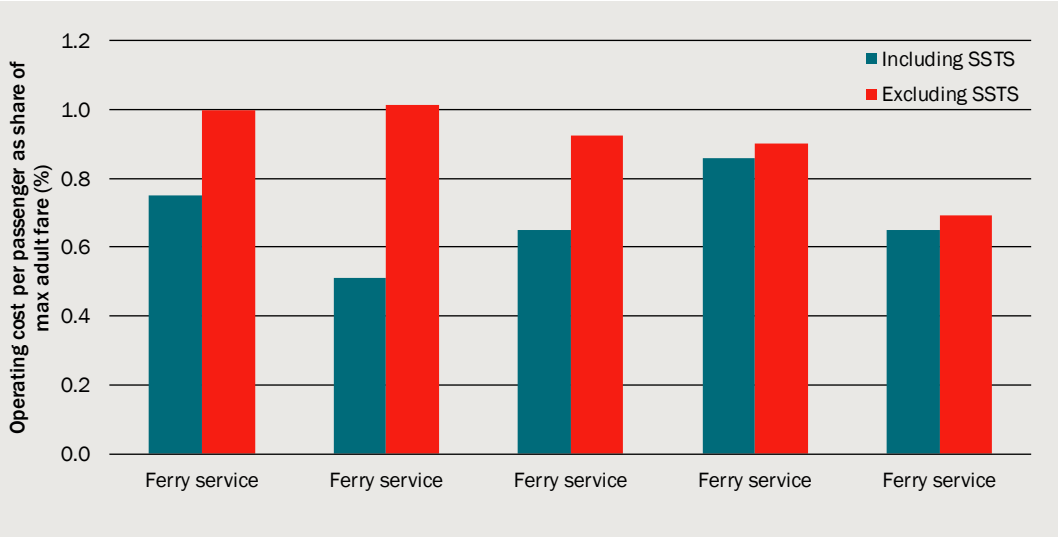
Note: Freight trips and SSTS trips excluded.

Data source: CIE based on cost data provided in ferry operators' pricing proposals.

Total operating cost per passenger (based on 2017 costs) as a proportion of the current maximum adult fare (including student travel) ranges between 51 per cent and 86 per cent (chart 2.3).

When student travel is excluded, total operating cost per passenger as a proportion of the current maximum adult fare ranges between 69 per cent and 92 per cent.

2.3 Total operating cost per passenger as a share of maximum adult fare



Data source: CIE based on cost data provided in ferry operators' pricing proposals.

Efficient total operating costs

Operating cost per service hour

Average total operating cost per service hour ranges between $81 and $346 (in real terms) across ferry services over the review period (2018 to 2021).

Indec estimated the total operating cost benchmark per service hour for private ferry services for IPART in 2014 based on cost benchmarks for labour, repairs and maintenance and 'other operating' costs and on operators' reported costs for fuel, mooring and insurance. The following adjustments were made to the total cost benchmarks for this review:

- original cost benchmarks indexed by CPI (based on annual changes from IPART) to 2017 dollars
- labour cost benchmark adjusted for recent growth of 3.3 per cent per annum in real terms across the industry and adjusted for ferry services with 2 or 3 operators.
- 'other operating' cost benchmark adjusted to reflect that an average 40 per cent of 'other operating' costs are relate to the number of staff employed, for example, training and uniform expenses.
- fuel, mooring and insurance benchmark operators' reported costs taken as given.

Reported total operating costs for all operators, excluding Brooklyn and Church Point, exceed the cost benchmark.

Labour costs

Reported labour costs

All ferry operators reported an increase in labour costs over the review period between 0.8 per cent and 3.5 per cent per annum, with an average of 2.4 per cent per annum.

Ferry operators previously reported labour cost to IPART in 2013. Between 2013 and 2017, labour cost (in real terms) has increased for the majority of operators by an average 3.3 per cent per annum.

Efficient labour costs

Reported labour costs for regulated ferry services over the review period ranges between $68 000 and $129 500 per full time equivalent (FTE), with an average of $89 500 per FTE.

Indec previously determined a reasonable annual labour per FTE of up to $63 500,[4] equivalent to approximately $67 600 in 2017 dollars.[5] In light of the recent growth in

4 Indec, 2014, *Efficient costs of providing Brooklyn, Church Point and Palm Beach ferry services,* Prepared for IPART.

labour costs in real terms for the industry, the Indec 2014 labour cost per FTE benchmark is adjusted by 3.3 per cent per annum to $77 100 per FTE.[6]

Labour cost per FTE for Brooklyn, Church Point and Cronulla is below or approximately equal to the cost benchmark. The reported labour cost per FTE for both Palm Beach ferry services exceed the cost benchmark.

Ferry services operate with either 1, 2 or 3 crew depending on vessel capacity. Indec estimated reasonable and efficient labour cost per service hour in 2017 dollars as follows:

- $55 for one operator
- $73 for two operators
- $136 for three operators

Indec's benchmark for two crew is 33 per cent higher than the benchmark for 1 crew, and the benchmark for 3 crew is 86 per cent higher than the benchmark for 2 operators. The labour cost per service hour benchmark was revised for services with 2 or 3 crew whereby additional crew are each paid a salary equivalent to 75 per cent of the main operator's salary.[7] Furthermore the benchmark has been adjusted to account for recent growth in real labour costs in the industry between 2013 and 2017 in the adjusted benchmark (table 2.5).

2.4 Labour cost per service hour for different vessel sizes

Number of operators per vessel	Labour cost per service hour	
	Indec's 2014 benchmark	Cost benchmark for this review[a]
	$2017	$2017
1 operator	55	63
2 operators	73	110
3 operators	136	156

[a] Cost benchmark for this review adjusts Indec's2014 benchmark to incorporate 75 per cent of the first operator's salary for the second and third operator (where required) and adjust for average historic growth across the industry between 2013- and 2017

Note: Labour cost per service hour indexed to 2017 dollars using ABS Wage Price Index.

Source: Indec, 2014, *Efficient costs of providing Brooklyn, Church Point and Palm Beach ferry services,* prepared for IPART.

Brooklyn and Church Point's reported labour cost per service hour do not exceed the cost benchmark. Reported labour cost per service hour for all other operators exceed the benchmark for labour cost per service hour.

5 2017 dollars based on ABS Wage Price Index for New South Wales. ABS, 2017, *Quarterly Index: Total hourly rates of pay excluding bonuses: New South Wales, Private and Public, All industries. Cat. 6345.0.*

6 Average growth across industry was 3.3 per cent per year between 2013 and 2017.

7 Allocation based on salary information for Master and General Purpose Hand sourced from cost data provided by Sydney ferry operator regulated by IPART.

Fuel

Fuel costs are influenced by the size of the ferry and its speed. Private ferries have been characterised as either slow or fast ferries in previous IPART reviews. This distinction is primarily due to fuel costs representing a larger proportion of total operating costs for fast ferries relative to slow ferries.

Reported fuel costs

Reported fuel costs increase over the review period for the majority of the ferry services, by between 0.4 per cent and 4.9 per cent per annum. Reported fuel costs decline by 0.5 per cent per annum for one operator.

Efficient fuel costs

Fuel cost per service kilometre

The fuel cost per service kilometre ranges between $1.10 and $3.10 across ferry services over the review period with an average of $1.70 per service kilometre.

Fuel cost per service hour

The fuel cost per service hour ranges between $7.80 and $48.80 per service hour across ferry services over the review period[8], with an average of $16.90 per service hour.

- **Operators' reported fuel costs over the review period are assessed as reasonably efficient.**

Repairs and maintenance

Reported repairs and maintenance costs

Repairs and maintenance costs are between 10 per cent and 12 per cent of total operating costs for the majority of ferry services. Over the review period and across operators, repairs and maintenance costs range between $55 000 and $167 000 per annum, with an average of $81 600 per annum.

Between 2013 and 2017, repairs and maintenance costs increased for three of five ferry services by between 7 per cent and 28 per cent, and declined from the remaining two ferry services.

8 Both 'slow' and 'fast' ferry services are included in this range.

Efficient repairs and maintenance costs

Repairs and maintenance cost per service hour

Repairs and maintenance cost per service hour ranges between $12 and $33 across the ferry services.

Indec (2015) reported a reasonable and efficient repairs and maintenance cost of $9.32 per service hour for slow ferry services and $23.32 per service hour for fast ferry services, equivalent to approximately $9.70 and $24.20 per service hour in 2017 dollars, respectively.[9]

Over the review period between 2018 and 2021, reported repairs and maintenance cost per service hour exceed the benchmark for Brooklyn, Church Point, Cronulla and Palm Beach (Mackerel). Reported repairs and maintenance costs for the Palm Beach (Ettalong) service do not exceed the benchmark.

Insurance and mooring costs

Insurance costs

Reported insurance costs range between $27 300 and $42 500 per annum over the review period. Forecasted insurance costs increase (in real terms) over the review period for the majority of ferry services by between 1.6 per cent and 4.2 per cent per annum.

Insurance cost per service hour ranges between $5.60 and $8.00 over the review period.

As noted by Indec (2014), insurance costs are dependent on claims history, and the size and age of the ferry. We consider reported insurance costs to be reasonably efficient.[10]

- **Reported insurance costs are considered reasonably efficient.**

Mooring costs

In IPART's 2014 private ferries fare review, ferry operators informed Indec that mooring fees were predominantly for overnight berthing and mooring of ferries, not for the use of wharves for regulated services.[11]

Mooring costs vary substantially across operators from an average of $3 400 per year to $19 400 per year. Mooring costs per service hour range substantially across operators from an average of $0.60 per service hour to $3.90 per service hour.

Mooring costs have been increasing (in real terms) since 2013 for two operators whilst decreasing over the same period (in real terms) from the remaining operators.

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9 Applying CPI provided by IPART.

10 This approach for insurance costs was also adopted by Indec in IPART's 2014 and 2015 review of maximum fares for private ferries.

11 Indec 2014, *Efficient costs of providing private and Newcastle-Stockton ferry services,* Prepared for IPART 2014, page 3.

Mooring fees are influenced by vessel length and availability of nearby mooring facilities which differ across ferry operators. We consider reported mooring costs to be reasonably efficient.[12]

- **Reported mooring costs are considered reasonably efficient**

Other operating costs

'Other operating' costs not detailed above include items such as office costs, advertising, consumables and uniforms. Operating costs vary substantially across the operators from around $50 000 per year to $291 500 per year.

Some operators included payroll tax and superannuation costs in other operating costs. Where this has been identified, these costs have been shifted to the wages and salaries cost.

The majority of operators forecasted 'other operating' costs to increase (in real terms) by between 0.6 per cent and 4.4 per cent per year between 2017 and 2021.

Reported 'other operating' costs per service hour range substantially across the operators, between $8.50 per service hour to $65.40 per service hour.

Indec (2014) estimated a reasonable and efficient 'other operating' cost per service hour of $10.90 per service hour[13], equivalent to $11.50 per service hour in 2017 dollars.[14] Many operators noted that 'other operating' cost included staff related cost items such as training, uniforms and subscriptions. Hence a proportion of the cost benchmark for 'other operating costs' should vary depending on the number of FTEs employed. In 2014, Indec applied weights to various cost items that encompass 'other operating' costs (table 2.6). Based on these weights it is estimated that approximately 40 per cent of 'other operating' costs relate to cost items that vary depending on the number of FTE's employed.[15]

Indec's original cost benchmark for 'other operating' costs was revised for this review to account for 40 per cent of 'other operating' costs relating to staff costs.[16]

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12 This approach for mooring costs was also adopted by Indec in IPART's 2014 and 2015 review of maximum fares for private ferries.

13 Indec 2014, *Efficient costs of providing private and Newcastle-Stockton ferry services,* Prepared for IPART 2014.

14 Applying CPI provided by IPART.

15 Based on approximately 75 per cent of 'Information, Technology and Communications', 'Professional, Marketing and Financial Services' comprising staff related costs including training, licences and subscriptions. In addition motor vehicle expenses and other people costs are attributed to staff related costs.

16 It is assumed that Indec's original benchmark applies to an average 5 FTEs. Hence the revised 'other operating' cost benchmark is greater than Indec's benchmark for ferry services with FTE greater than 5, and conversely the revised benchmark is lower for ferry services with FTE less than 5.

2.5 Weights applied to cost categories in 'other operating' costs

Other Costs	Weight	Efficient Unit Costs
	Per cent	$
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**

Source: Indec 2015, *Efficient costs of providing Brooklyn, Church Point and Palm Beach ferry services,* Public Report prepared for IPART 2015.

Over the review period, Church Point's average 'other operating' costs per service hour do not exceed the cost benchmark. All other operators exceeded the 'other operating' cost benchmark.

- **'Other operating' costs for Church Point do not exceed the cost benchmark.**
- **'Other operating' costs for all other operators reviewed do exceed the cost benchmark, in some cases by a substantial margin.**

3 Capital expenditure

The majority of capital expenditure is related to the maintenance and replacement of vessels including:

- 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.)

Non-vessel related capital expenditure includes:

- Office expenses (buildings, equipment, and furniture)
- Vehicles

Brooklyn, Church Point, Cronulla and Palm Beach submitted pricing proposals to IPART on proposed capital expenditure. Pricing proposals include current costs for 2017 and forecasted costs for four years of the review period between 2018 and 2021. These operators also participated in our consultation.

Efficient capital costs

For the 2015 and 2016 fare review periods, Indec provided a review of efficient costs in their 2014 Report and 2015 Report respectively. The methodology proposed in the 2014 report for capital expenditure allowances was based on:

- the assessed economic life for slow ferries is 25 years and for fast ferries, 15 years
- engine rebuilds occurring every 3 years
- mid-life engine replacements occurring at 12.5 years for slow ferries and 7.5 years for fast ferries
- allowances for other asset classes occurring every 5 years.

In their 2014 Final Report[17], Indec adjusted the timeframe for engine works in response to the following 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

[17] IPART, 2015, *Final Report – Review of Fares for Private Ferries and the Stockton Ferry for 2015,* https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/consultant_report_-_indec_final_report_-_review_of_fares_for_private_ferries_and_the_stockton_ferry_for_2015.pdf, page 22.

> and replacement after 20,000 hours, which in our case is a rebuild after 3 years, and a replacement every 6 years.

Indec's response was[18]:

> 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.

Indec adopted this approach in their final 2014 and 2015 reports.[19]

The majority of ferries on the regulated routes for this fare review are heritage ferries and are aged well over the assumed 25 year economic life as assumed by Indec. Indec observed:

> 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."[20]

As a result, most operators' expected capital expenditure does not align to the timing and type of capital expenditure recommended in this (or Indec's previous) reviews.

In this analysis, we have applied the following assumptions:

- engine rebuilds occur at 10 000 hours and replacements at 20 000 hours.
- capital allowances for engine works (rebuilds and replacements) are applied based on total service hours. This means that the allowance has not been allocated to a particular vessel as the operator manages the best timing for their fleet to be serviced, depending on their use.[21] Under this approach, we have considered the operator's forecast engine rebuild/replacement costs (where provided) to be reasonable, and hence accepted the operator's average cost as the efficient cost.
- in years where capital allowances are made for ferry replacements, we assume that the replacement is made half way through the year. This assumption affects the timing for engine rebuilds and replacements.

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18 Ibid.

19 Indec Consulting, 2015, *Final - Public Version Report. Efficient Costs of Providing Brooklyn, Church Point and Palm Beach Ferry Services,* https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/consultant_report_-_indec_-_final_report_-_december_2015.pdf, page 8.

20 Indec Consulting, 2015, *Final - Public Version Report. Efficient Costs of Providing Brooklyn, Church Point and Palm Beach Ferry Services,* https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/consultant_report_-_indec_-_final_report_-_december_2015.pdf

21 Applying a capital allowance in this way recognises that operators manage their fleet based on commercial decisions, which may include swapping vessels between routes, allocating particular vessels to school services while the other vessel is providing other regulated services, or using the primary and back up vessels simultaneously in peak periods.

- where operators have not provided the costs for an engine replacement (on a per vessel basis), the cost has been estimated based on other vessels and the capacity of the vessel.
- where operators have not provided the costs for engine rebuilds, it has been estimated based on other operators' costs.
- the recommended refurbishment cost for a slow ferry is $21 250 and for a fast ferry, is $106 150. This is based on Indec's previous capital allowances for refurbishment.
- Indec did not provide a benchmark for costs in the 'other' cost category therefore we have accepted the operator's proposed 'other' cost as the efficient cost.
- Timing for engine works for Palm Beach slow ferry service is based on that provided by the operator with an engine rebuild at 20 000 hours and an engine replacement at 60 000 hours. It would also be efficient to allow for another engine rebuild at 40 000 hours.

Table 3.1 provides the efficient capital allowance provided in the previous determination period.

3.1 Allowed capital expenditure 2014-2017

Operator	Early 2015	2015	2016	2017
	$2014	$2014	$2014	$2014
Brooklyn	875 000	875 000	-	20 000
Church Point	-	20 000	960 000	100 000
Cronulla	1 210 000	-	1 000 000	20 000
Palm Beach-Mackerel	-	20 000	-	1 170 000
Palm Beach-Ettalong	-	-	3 000 000	100 000

Note: 2014 capital allowance is from the 2014 report, and capex for 2015 to 2017 is from the 2015 report.

Source: Indec Consulting, 2015, *Final - Public Version Report. Efficient Costs of Providing Brooklyn, Church Point and Palm Beach Ferry Services,* https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/consultant_report_-_indec_-_final_report_-_december_2015.pdf; Indec Consulting, 2014, *Final - Public Version Report. Efficient Costs of Providing Brooklyn, Church Point and Palm Beach Ferry Services,* https://www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/consultant_report_-_indec_final_report_-_review_of_fares_for_private_ferries_and_the_stockton_ferry_for_2015.pdf, page ii.

IPART accepted Indec's recommendations in their previous determination. Our recommended efficient capital expenditure over 2018-2021 is determined using the benchmarks set by Indec and the timing of which previous capital amounts were granted.

Table 3.2 summarises the efficient capital expenditure for the 2018-2021 period.

3.2 Recommended capital expenditure allowance 2018-2021

Operator	2018	2019	2020	2021
	$2017	$2017	$2017	$2017
Brooklyn	51 950	37 500	68 750	21 250
Church Point	21 250	66 500	21 250	1 070 000
Cronulla	40 000	21 250	47 110	-
Palm Beach-Mackerel	26 540	-	21 250	26 540
Palm Beach-Ettalong	-	149 280	79 620	-
Clarence	-	-	42 500	42 920

Source: CIE.

The timeframe for engine works and refurbishment have been aligned to the timing of the capital allowances that were granted for vessel acquisition under previous price reviews. Recommendations for capital allowances for engine rebuilds are based on route service hours, and are not allocated to any particular vessel. Allowances for refurbishment are recommended per vessel.

Brooklyn

Based on the timing of the capital allowances provided for vessel acquisition (2014 and 2015) and the number of service hours on the route, it is recommended that an allowance is made for one engine rebuild and one engine replacement over the determination period. Furthermore, both vessels should be provided capital allowances for refurbishment, at three year intervals.

Table 3.3 shows the previous capital allowance and our recommended capital allowance for the 2018-2021 determination period.

3.3 Brooklyn Ferry Service, allowed and proposed capital expenditure

	2014	2015	2016	2017	2018	2019	2020	2021
	Allowed ($2014)				Recommended ($2017)			
Ferry acquisition	Sun [a]	Banksia	-	-	-	-	-	-
Acquisition value	875 000	875 000	-	-	-	-	-	-
Service hours (cumulative)	-	2 548	7 643	12 738	17 833	22 928	28 023	33 118
Description of works required								
Engine works	-	-	-	-	Rebuild	-	Replace	-
Refurbishment	-	-	-	Sun	Banksia	-	Sun	Banksia
Other	-	-	-	-	-	Both vessels	-	-
Cost of recommended works								
Engine works	-	-	-	-	30 700	-	47 500	-
Refurbishment	-	-	-	20 000	21 250	-	21 250	21 250
Other	-	-	-	-	-	37 500	-	-
Total	**$875 000**	**$875 000**	**-**	**$20 000**	**$51 950**	**$37 500**	**$68 750**	**$21 250**

[a] Has been applied at 2015 as the allowance was granted late 2014/early 2015.

Source: Brooklyn Ferry Services Pricing Proposal 2017, CIE.

Brooklyn Ferry Services capital intentions exceed the recommended allowance in 2019 and 2020.

Church Point

Based on service hours, it is recommended a capital allowance is made for both an engine rebuild and replacement, in 2019 and 2021 respectively. Refurbishment expenditure is recommended for all three vessels at intervals of three years.

A capital allowance to replace the Amelia K is recommended in 2021, as the vessel will be 25 years of age. Using Indec's Modern Equivalent Asset replacement costs, a vessel of similar capacity to the Amelia would be approximately $1 million ($2017).

The previous capital allowance and our recommended capital allowance for the 2018-2021 determination period are at table 3.4.

3.4 Church Point Ferry Service, allowed and proposed capital expenditure

	2014	2015	2016	2017	2018	2019	2020	2021
		Allowed ($2015)				Recommended ($2017)		
Ferry acquisition	-	-	Elvina	-	-	-	-	Amelia
Acquisition value	-	-	960 000	-	-	-	-	1 000 000
Service hours (cumulative)	-	-	2 997	8 992	14 986	20 980	26 975	32 969
Description of works required								
Engine works	-	-	-	Replace		Rebuild		Replace
Refurbishment	-	Amelia	-	Duck	Amelia	Elvina	Duck	-
Cost of recommended works								
Engine works	-	-	-	-	-	45 242	-	70 000
Refurbishment	-	-	-	-	21 250	21 250	21 250	-
Total	**-**	**$20 000**	**$960 000**	**$100 000**	**$21 250**	**$66 500**	**$21 250**	**$1 070 000**

Source: Church Point Ferry Pricing Proposal 2017, CIE.

The recommended capital allowance for Church Point Ferry Service is broadly consistent with the capital intentions of Church Point (the operator expects to spend slightly above the recommended allowance).

Cronulla Ferries

Based on the capital allowances granted in the previous period for vessel acquisition, it is recommended that a capital allowance is made for an engine replacement in 2018 and rebuild in 2020. Capital expenditure has also been recommended for refurbishment of both vessels over the pricing period.

The previous capital allowance and our recommended capital allowance for Cronulla Ferries for the 2018-2021 determination period are at table 3.5.

3.5 Cronulla Ferries, current and recommended capital expenditure

	2014	2015	2016	2017	2018	2019	2020	2021
	Allowed ($2015)				Recommended ($2017)			
Ferry acquisition	Curranulla	-	Tom Thumb III	-	-	-	-	-
Acquisition value	1 210 000	-	1 000 000	-	-	-	-	-
Service hours (cumulative)	2 644	7 932	13 220	18 508	23 796	29 084	34 372	39 660
Description of works required								
Engine works	-	-	-		Replace	-	Rebuild	-
Refurbishment	-	-	-	Curranulla	-	Tom Thumb	Curranulla	-
Cost of recommended works								
Engine works	-	-	-	-	40 000	-	25 853	-
Refurbishment	-	-	-	20 000	-	21 250	21 250	-
Total	**1 210 000**	**-**	**1 000 000**	**20 000**	**$40 000**	**$21 250**	**$47 110**	**-**

Source: Cronulla Ferries Pricing Proposal 2017, CIE.

Cronulla ferries capital intentions are less than the recommended capital allowance.

Palm Beach

Prior to the fleet restructure, capital allowances had been granted to replace the Myra and the Sensation (the primary vessels on each route). The other vessels that were part of the regulated service route would not have been allocated a replacement value until 2026 (Golden Spirit) and 2020 (Joy).

Capital expenditure for these routes is recommended in accordance with the allowances that were provided in the previous period and based on the remaining life of the vessels that they were using in the previous price determination.

Consistent with all other operators, capital recommendations for engine rebuilds and replacements are based on the timing of the vessel acquisition, regardless of when/if the acquisition took place, and total service hours.

The recommended capital allowances for the Mackerel route and Ettalong routes are at tables 3.6 and 3.7. These recommended allowances are lower than those proposed by the operator.

3.6 Palm Beach (Mackerel route) current and forecast capital expenditure

	2014	2015	2016	2017	2018	2019	2020	2021
		Allowed ($2015)			Recommended ($2017)			
Ferry acquisition	-	-	-	Myra	-	-	-	-
Acquisition value	-	-	-	1 170 000	-	-	-	-
Service hours (cumulative)	-	-	-	1 875	5 625	9 375	13 125	16 875
Description of works required								
Engine works	-		-	-	-	-	-	-
Refurbishment	-	Golden spirit	-	-	Escapade	-	Myra	Escapade
Cost of recommended works								
Engine works	-	-	-	-	-	-		-
Refurbishment	-	20 000	-	-	26 538	-	21 250	26 538
Total	**-**	**-**	**-**	**$1 170 000**	**$26 540**	**-**	**$21 250**	**$26 540**

Note: Costs for Escapade are split 25 per cent to the Mackerel route and 75 per cent to the Ettalong Route; cost for engine works is the average between costs for Escapade and Myra.

Source: Palm Beach Pricing Proposal 2017, The CIE.

3.7 Palm Beach (Ettalong route) current and forecast capital expenditure

	2014	2015	2016	2017	2018	2019	2020	2021
		Allowed ($2015)			Recommended ($2017)			
Ferry acquisition	-	-	Sensation	-	-	-	-	-
Acquisition value	-	-	3 000 000	-	-	-	-	-
Service hours (cumulative)	-	-	2 188	6 563	10 938	15 313	19 688	24 063
Description of works required								
Engine works	-	-	-	-	-	Rebuild	-	-
Refurbishment	-	-	-	Joy	-	Escapade	Crystal	-
Cost of recommended works								
Engine works	-	-	-	-	-	43 125	-	-
Refurbishment	-	-	-	100 000	-	105 600	79 613	-
Total	**-**	**-**	**$3 000 000**	**$100 000**	**-**	**$149 280**	**$79 620**	**-**

Note: Vessel Joy is replaced by Crystal; Costs for Escapade are split 25 per cent to the Mackerel route and 75 per cent to the Ettalong Route; cost for engine works is the average between costs for Escapade and Crystal.
Source: Palm Beach Pricing Proposal 2017, CIE.

Over the determination period, Palm Beach plan to spend more than the recommended capital allowance for the Ettalong service.

Clarence

Clarence Ferries did not submit operating or capital expenditure estimates over the determination period. In the previous pricing review, Indec recommended $1 million per vessel to replace both in 2017.

Based on estimated service hours for Clarence, it is recommended that they receive an expenditure allowance in 2021 for an engine rebuild. The capacity and age of the Clarence vessels are comparable to the vessels operated by Cronulla Ferries (Clarence Head has a similar capacity to the Tom Thumb III, and the Mirigini is comparable to the Curranulla). Therefore the recommended expenditure allowance for engine works is $42 920.

Furthermore, an additional allowance is recommended for both vessels in 2020 for refurbishment ($42 500).

4 Patronage

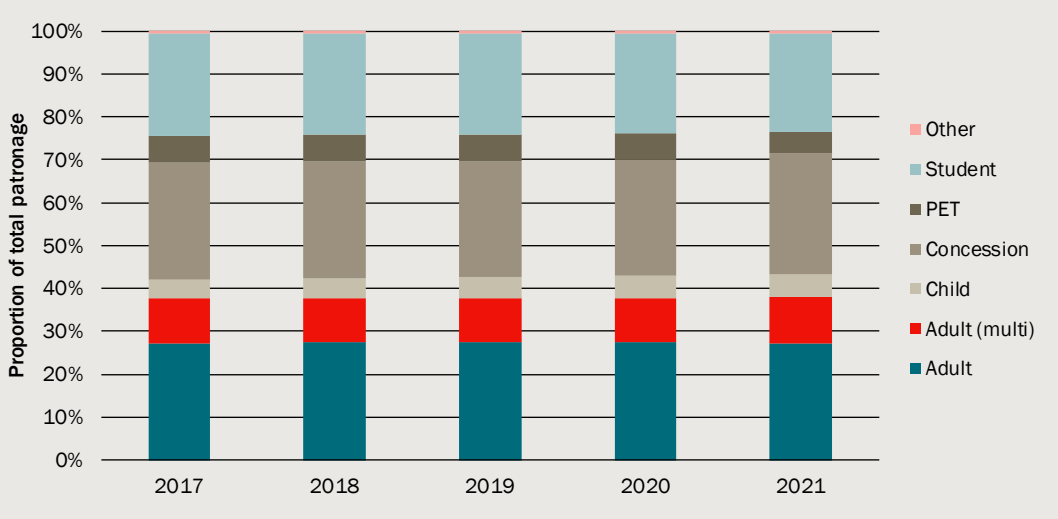
Patronage determines fare revenue and drives costs through influencing fleet size, fleet capacity, number of services and crew required per service.

Patronage forecast by trip type

Private ferry services transport regular commuters and seasonal/tourist passengers. Some ferry services are 'commuter' dominant whilst others have a greater share of tourist passengers. The share of regular 'commuter' patrons ranges from 15 per cent to 88 per cent across the ferry services reviewed based on adult (multi), SSTS and PET trips.[22] These estimates may underestimate 'regular passengers' where additional regular commuters purchase single adult tickets.

Across the ferry services reviewed, regular 'commuter' patronage is approximately 40 per cent of total patronage forecast (chart 4.1). Non-regular commuter patronage includes adult, child, concession and other tickets. Adult and concession trips each contribute approximately 27 per cent of total patronage forecast across the ferry services.

4.1 Total private ferry service patronage forecast by trip type



Note: Based on total patronage for Brooklyn, Church Point, Cronulla, Palm Beach (Mackerel) and Palm Beach (Ettalong). Patronage data not included for Brooklyn in 2021.

Data source: Pricing proposals provided by ferry operators.

22 Regular commuter share of patronage estimated based on the total number of adult multi tickets, SSTS tickets (School Student Transport Scheme) and Pensioner Excursion Tickets (PET) in 2017.

Forecast patronage

Many of the ferry services operate in areas with constrained patronage growth. This was noted by Indec (2014):

> 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.[23]

Whilst growth in 'commuter' patronage is limited in many cases, some ferry operators noted potential to increase tourism patronage.

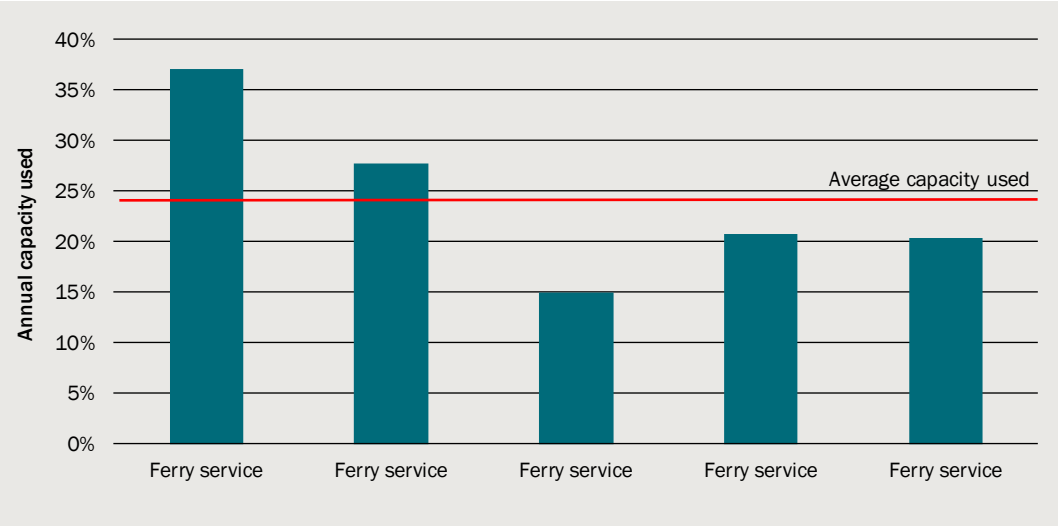
Operators forecasted patronage to increase by between 1 per cent and 4 per cent over the review period.

Capacity utilised

Ferry capacity utilised ranges between 15 per cent and 37 per cent (based on 2017 patronage data). Average capacity used across the ferry services is 24 per cent (chart 4.2).

Patronage seasonality can affect capacity utilisation rates. For one particular ferry service, 70 per cent of patronage occurs in Spring and Summer. Seasonality is less pronounced for the other ferry services.

4.2 Annual capacity used by ferry service



Data source: CIE based on data provided by ferry operators.

23 Indec, 2014, *Efficient costs of providing private and Newcastle-Stockton ferry services,* Public Report prepared for IPART, October 2014, page iii.

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