Queensland Recreational Boating Facilities Demand Forecasting Study 2017

Whitsunday Regional Council Assessment

GHD

ECONOMIC ASSOCIATES

December 2017

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Definitions

‘all-tide’ means that a vessel can be realistically launched into or retrieved from the waterway at the site for 100% of the tidal range

‘ARI’ means average recurrence interval, and refers to the average or expected time period between two occurrences of weather exceeding a certain magnitude

‘capacity’ means the ability to handle throughput for boat ramps, or the ability to handle multiple vessels at pontoons and floating walkways

‘CHMP’ means Cultural Heritage Management Plan

‘CPM Reg’ means the *Coastal Protection and Management Regulation 2003*

‘CTU’ means ‘car-trailer unit’, and applies to parking bays suitable for use by a tow vehicle with attached boat trailer

‘DEE’ means the Department of the Environment and Energy (Commonwealth)

‘DEHP’ means the Department of Environment and Heritage Protection

‘demand’ means the current or projected requirement at a given year to service the needs of the recreational boating community – assuming full effectiveness of existing facilities and based on current numbers of registered recreational boats only. Excludes non-registered vessels such as canoes, kayaks, sail-boards, row boats, powered vessels not requiring registration, etc.

‘effective capacity’ for a boat ramp means the number of lanes for boat ramps after adjusting for usage constraints such as the lack of adequate parking or tidal accessibility, or improvements to efficiency such as floating walkways or pontoons, see section 4.1.1 for additional detail

‘effective capacity’ for a landing means the number of landings after adjusting for usage constraints caused by tidal and depth restrictions, see section 4.2.1 for additional detail

‘EPBC Act’ means the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)

‘FHA’ means Fish Habitat Area

‘GBR’ means Great Barrier Reef

‘IDAS’ means Integrated Development Assessment System

‘landings’ means jetty and pontoon structures that facilitate direct berthing of non-trailable vessels (keel boats and >8.0m powerboats), transient vessels and/or tenders from larger vessels (where effective anchoring or mooring is available nearby)

‘land-side’ refers to infrastructure constructed above high water mark

‘LGA’ means local government area

‘MCU’ means a material change of use under the planning scheme

‘MIIP’ means the TMR works program known as the Marine Infrastructure Investment Program, with the government’s Marine Infrastructure Fund forming its capital component

‘MNES’ means matter of national environmental significance under the EPBC Act

‘NC Act’ means the *Nature Conservation Act 1992*

‘near all-tide’ means that a vessel can be realistically launched into or retrieved from the waterway at the site for at least 80% of the tidal range

‘NNTT” means National Native Title Tribunal

‘P Act’ means the *Planning Act 2016*

‘P Reg’ means the *Planning Regulation 2017*

‘part-tide’ means that a vessel can be realistically launched into or retrieved from the waterway at the site for at least 50% of the tidal range

‘registration activation rate’ means the percentage of registered vessels liable to be in use on any given good weather weekend day

‘shd’ means schedule

‘shortfall’ means the outstanding number of boat ramp lanes or landings as appropriate (assuming announced TMR projects/upgrades at December 2016 have been built) required to satisfy demand at a particular year, after adjustment for actual number and effective capacity considerations. A negative number for shortfall in a table signifies an oversupply

‘SPL’ means strategic port land

‘Study’ means this document including appendices and the state-wide summary

‘TMR’ means the Department of Transport and Main Roads

‘water-side’ refers to infrastructure constructed below high water mark

‘WHA’ means World Heritage Area

means ‘number’ when used in tables

Executive summary

This study sets out the current and future demand for publicly accessible recreational boating facilities within the Whitsunday Regional Council area over the next 20 years. The assessment considers facilities for vessels, such as boat ramps and floating walkways, as well as landings for deep-draught vessels. It is intended to be used to inform funding priorities from 2018-19 onwards.

Key issues for Whitsunday Regional Council

The primary issues raised by stakeholders around access to recreational boating facilities in the Whitsunday Regional Council area centred on:

- reliable access to Cape Upstart
- lack of sufficient sheltered facilities for all-tide, all-weather access to the open sea
- overcrowding at the Whitsunday Coast boating facilities.

Demand assessment

The demand assessment is based on boat registrations from within the local government area (LGA) of Whitsunday and surrounding LGAs. The demand assessment is analysed against existing capacity to produce an outstanding shortfall projection. Key aspects influencing demand considered in the assessment include:

- The population of the Whitsunday Regional Council is projected to increase from 34,626 persons in 2016 to 45,873 persons in 2036, or by 1.4% per annum, which is close to the state-wide average over the next five years of 1.6% (Appendix C)
- The incidence of boat registrations is high across all vessel types and sizes.
- Trailable and non-trailable vessel registrations within the Whitsunday LGA are mostly used on the water within the LGA, with some leakage/export in usage from the LGA to Mackay Regional Council and Burdekin Shire Council areas.
- Vessel inflows from outside the LGA occur from Mackay Regional Council, Burdekin Shire Council and Isaac Regional Council areas.
- There is significant demand for recreational boating infrastructure in the Whitsunday Regional Council area as a result of tourism.
- The registration activation rate from residents of the LGA is anticipated to be high (14%) as a result of a relatively high incidence of blue collar workers and higher average age than the Queensland state average.

Boat ramps

At present there are 11 boat ramp facilities in the LGA, containing 23 boat ramp lanes, however the lack of parking for car-trailer units (CTU) or limited tidal access at some locations means that the effective capacity of these ramps is 20.4 lanes. Once infrastructure planned for implementation by 2017-18 is in place (referred to as Marine Infrastructure Investment Program (MIIP) upgrades), this effective capacity increases marginally to 21.9 lanes. In comparison to the rest of the state, having 22 of 23 lanes with adequate parking is a high proportion.

To address any shortfall between demand and current capacity, existing facilities were further assessed to identify what type of access the facility provides to the two main destinations, being either open-water or non-open-water. This then allows identification of the type of additional facilities needed to address demand.

The projected boat ramp lane shortfall for Whitsunday is shown in Table 1.

Table 1 – Projected boat ramp lane shortfall, Whitsunday Regional Council

Evaluation category*	Existing effective capacity*	2016		2021		2026		2036	
		Demand	Shortfall	Demand	Shortfall	Demand	Shortfall	Demand	Shortfall
Open-water access	13	14.4	1.4	16.7	3.7	17.1	4.1	19.3	6.3
Non-open-water access	8.9	10.6	1.7	11.3	2.4	11.9	3	13.7	4.8
Total	**21.9**	**25**	**3.1**	**28**	**6.1**	**29**	**7.1**	**33**	**11.1**

**Refer section 4.1.2 and* Table 6 *for detailed evaluation categories*

**Existing effective capacity includes MIIP announced projects/upgrades as at December 2016*

**See Appendix B and* Table 6 *for capacity assessment*

Landings

The assessment of capacity and shortfall in landings is shown in Table 2 and Table 3.

Table 2 – Existing landing capacity, Whitsunday Regional Council

Evaluation category	Existing effective capacity
# of public sheltered mainland landings*	2 (3)
# of public island landings – supplies available	0
# major private landings*	5
Total	**7 (8)**
Facilities not contributing to recreational capacity:	
# of public unsheltered mainland landings	0
# of public island landings – no supplies available*	2

**public sheltered mainland landings include Bowen Boat Harbour and Abell Point Marina pontoons*

**private landings include marinas and clubs, accessible by fee for deep-draught vessels, and by arrangement, limited access for tender dinghies (varies with private entity, some free)*

**public island landings – no supplies available, include South Molle and Daydream Islands*

Table 3 – Projected landing shortfall, Whitsunday Regional Council

Evaluation category	Existing effective capacity*	2016		2021		2026		2036	
		Demand	Shortfall	Demand	Shortfall	Demand	Shortfall	Demand	Shortfall
# of landings*	8	6	-2	7	-1	7	-1	8	0

**# of landings consists of public sheltered mainland landings, public island landings – supplies available and major private landings*

This assessment indicates that on an LGA level, the public landings network in conjunction with the supplementary capacity provided by commercial or club landings is adequate to cater for existing and future demand. However, the landings in Bowen Boat Harbour do not service the main demand area of the Airlie Beach area, where there is substantial pressure for additional facilities.

Recommended priorities

Refer to Table 4 for the Whitsunday Regional Council area recommended priorities.

Recommended priorities to increase capacity and meet demand have been defined over the following time scales:

Priority 1 (P1) These sites are needed to meet existing demand.

Priority 2 (P2) Assuming that the priority 1 sites are implemented, these sites are expected to be needed to meet additional demand over the five years ending 2021.

Priority 3 (P3) Assuming that the priority 1 and 2 sites are implemented, these sites are expected to be needed to meet additional demand over the subsequent five years, that is 2021 to 2026.

Priority 4 (P4) These sites are those that will meet future demand, but are not expected to be required before 2026 in demand terms but may be brought forward for construction for other reasons.

Table 4 – Recommended priorities to increase capacity, Whitsunday Regional Council area

Priority	Sites
Priority 1 (as soon as possible)	Lake Proserpine (Peter Faust Dam) – expand ramp by 2-lanes and increase parking to 70 CTU spaces (reclamation/major earthworks required). Feasibility of a floating walkway/pontoon should be considered.
	Molongle Creek – capital dredging to provide all-tide access to open-water.
Priority 2 (over the next five years)	New facility in Cape Gloucester area – 2-lane ramp with parking for 45 CTUs.
Priority 3 (over the next five to ten years)	New facility at Shute Harbour – new 4-lane ramp with floating walkway and remark existing car parking areas for 90 CTU spaces.
	New facility at Glen Isla Road, Glen Isla – 2-lane ramp with floating walkway and 45 CTU spaces.
Priority 4 (other)	Nil

1. Introduction

1.1 Background

GHD was commissioned by the Department of Transport and Main Roads (TMR) to establish the current and future demand for recreational boating facilities throughout Queensland. This resulting study is the *Recreational Boating Facilities Demand Forecasting Study 2017* (Study) and supersedes the 2011 study of similar name. The study replaces the *Recreational Boating Facilities Demand Forecasting Study 2016* by incorporating the results of the 2016 census.

The Study will be used to inform planning for the development of existing and new recreational boating facilities by a variety of agencies, including TMR, the Gold Coast Waterways Authority, local government, and port and water authorities. The Study is one tool in a broader assessment process to select and prioritise sites for development. Specifically, the Study is not binding in any way on the agencies it is designed to assist. The Study establishes demand and makes informed suggestions as to how the established demand might be addressed. The 2011 study, at December 2016, has had 66% of its recommendations adopted to a greater or lesser extent. A similar recommendation take-up rate may be expected from this Study.

This LGA report is one of a series of reports for the Study comprising LGA and state-wide components. The state-wide report details the Study background and provides an overview of demand for recreational boating facilities over the next 20 years throughout the state. The state-wide report complements individual reports for each local government area (LGA). Each LGA report identifies existing capacity, current and future demand, and potential opportunities for boating infrastructure within the LGA – with appropriate adjustment for interaction with adjacent LGAs.

1.2 Context

This LGA report has been prepared with a focus on in-water recreational facilities and infrastructure comprising boat ramps, floating walkways and landings within each LGA, which are publicly accessible by registered vessels. As car parking can significantly constrain the efficient use of a facility, it has been considered in the assessment. However, facilities used more than 50% of the time for commercial or public passenger transport (e.g. ferry terminals), private facilities (such as yacht clubs and marinas), and general recreational facilities such as canoe ramps and fishing platforms are not included as part of this study.

The types of infrastructure considered in the assessment of capacity are:

- boat ramps used for the launching and retrieval of vessels
- supporting infrastructure for the boat ramp:
  - queuing facilities (floating walkways, pontoons, queuing beaches)
  - parking for car-trailer units (CTUs)
- short-term landings accessible by deep-draught or non-trailable vessels on the outer face, or their tenders (for longer term tying up) on the inner/landward face or ends.

There may be instances where a public pontoon serves multiple purposes – as a short-term landing, as a tender tying up facility, and as a queuing facility for a boat ramp.

2. Local government area overview

The key characteristics and influences on recreational boating within the Whitsunday Regional Council area are:

- The area is dominated by key industries of tourism, agriculture and mining.
- The population of the Whitsunday Regional Council is projected to increase from 34,626 persons in 2016 to 45,873 persons in 2036, or by 1.4% per annum, which is close to the state-wide average over the next five years of 1.6% (Appendix C)
- Windy weather significantly reduces the annual number of days that are suitable for offshore boating. This is particularly noticeable in the strong seasonal south-east trades blowing consistently from June to August.
- There is an accepted/known shortfall in all-tide boat launching facilities towards the northern end of the LGA.
- The area is considered to be a remote LGA under the remoteness measures used by the Australian Bureau of Statistics.

3. Existing facilities

3.1 Overview of existing facilities

Within the Whitsunday Regional Council area, existing recreational boating facilities are owned and managed by several organisations, shown in Table 5.

Table 5 – Recreational boating facilities within Whitsunday Regional Council area

Infrastructure owner	Boat ramps		Landings	
	Facilities	Lanes	Pontoons	Jetties
TMR mainland (other than state boat harbour)	5	8	1	0
TMR mainland (state boat harbour)	1	4	1	0
TMR island	0	0	0	0
Whitsunday Regional Council	3	5	0	1
Sunwater	1	1	0	0
Privately managed public facilities	1	4	0	1
Private landings (marinas/clubs)	N/A	N/A	6	0
Total	**11**	**22**	**8**	**2**

A map indicating the location of existing facilities is included as Appendix A.

Appendix B contains a summary capacity assessment of these existing facilities.

Important or popular public boat ramp facilities are located at:

- Bowen Boat Harbour
- Shute Harbour
- Abell Point Marina
- Port of Airlie
- Molongle Creek, Gumlu

Existing ramp facilities (including minor ones not mentioned above):

- service the main population centres of Airlie Beach/Cannonvale, Proserpine and Bowen
- provide the only means of access to Cape Upstart for a significant population of Burdekin Shire Council residents
- provide open-water access, or access to estuarine reaches of river and creek systems – some facilities providing access to both, such as Conway Road on the Proserpine River.

Research referenced in the previous demand assessment study (GHD, 2011)[1] indicated that boat owners were prepared to travel up to approximately one hour to reach major or preferred marine infrastructure. In many locations, this infrastructure is represented by facilities that provide all-tide, or near all-tide, open-water access.

Between the NSW border and Port Douglas, TMR has therefore adopted a long term strategy to seek to provide access to an all-tide, sheltered facility, within a one-hour drive time where practical. Exceptions to the strategy include where all-tide, sheltered access is not feasible. In these instances, sites that provide near all-tide sheltered access are sought instead.

All-tide, open-water access is provided at the facilities in Bowen Boat Harbour, and the four facilities in the Shute Harbour/Airlie Beach area, at least one of which is within approximately a one-hour drive of main population areas or coastal communities.

The public deep-draught vessel landings within the LGA comprise:

- a pontoon in Bowen Boat Harbour, which services the pile moorings in the harbour and casual deep-draught vessel needs
- a pontoon near the boat ramp in Abell Point Marina, which is well-used by deep-draught vessels and tenders
- jetties on South Molle and Daydream Islands, destination facilities which access island areas of National/Marine Park, but are primarily used by commercial vessels, with little to nil contribution to meeting recreational vessel demand.

3.2 Key issues and hotspots

The primary issues raised by stakeholders around access to recreational boating facilities in the Whitsunday Regional Council area are centred on safety, accessibility, and capacity.

3.2.1 Safety

There are over 200 dwellings on Cape Upstart that rely on access by boat, as there is no road servicing these properties. Most of the property owners reside in Burdekin Shire, and have historically accessed Cape Upstart via the closest ramp facilities, which are at Molongle Creek, close to the border of Whitsunday and Burdekin LGAs. Concerns have been raised regarding safe and reliable access between Cape Upstart and road accessible areas, particularly in emergency situations, as the Molongle Creek facility provides only part-tide access.

[1] GHD (2011) Recreational Boating Facilities Demand Forecasting Study. Report prepared for TMR, September.

3.2.2 Accessibility

A key issue raised by stakeholders is the lack of sheltered launching/retrieval facilities that allow all-weather, all-tide or near-all-tide access for trailable boat sizes in the Cape Gloucester/Hideaway Bay/Dingo Beach area. On “flat water days” (that is, when the weather conditions are fine, with light winds and low wave action), demand for launching/retrieval facilities is very high, as these days are not frequent. Dingo Beach only has access to a beach ramp, usable with the help of the tide.

The ramps at Cannonvale and Airlie Beach provide a reliable, sheltered alternative launching location for Dingo Beach/Hideaway Bay residents, at a drive of approximately 45 minutes. However, residents of Dingo Beach and Hideaway Bay have expressed a strong desire to establish sheltered launching facilities closer to their communities in the Cape Upstart area. This need was recognised in the 2011 GHD study.

3.2.3 Facilities capacity

Overcrowding at facilities in the Cannonvale to Shute Harbour area was raised by many stakeholders. All of these facilities provide all-tide, open-water access, and are highly congested on good-weather days. All four of these facilities are effectively linked by a single road (Shute Harbour Road), which terminates at Shute Harbour. The need for additional parking for CTUs is a key theme for these facilities.

4. Capacity assessment

4.1 Boat ramp capacity

The function of a boat ramp is to provide access for launching and retrieval of trailable vessels into a waterway. Alternative launching facilities such as boat stackers are outside scope for this Study.

4.1.1 Boat ramp capacity evaluation

For the purposes of this Study, boat ramp capacity is measured as “effective” boat ramp lanes. An effective boat ramp is quantitatively characterised as being:

- capable of accommodating 40 launch / retrievals per lane per day (in accordance with Australian Standard AS 3962[2] and Economic Associates (2011)[3])
- supported by landside infrastructure such as queuing and manoeuvring areas
- supported by an appropriate number of CTU parking spaces.

[2] AS 3962-2001 Guidelines for the design of marinas
[3] Economic Associates (2011) Recreational Boating Facilities Demand Forecasting Study: Demand Analysis

The number of launch / retrievals per lane per day has been selected based on the relevant Australian Standard and Economic Associates (2011)[3]. This latter report summarised research undertaken by SKM (1988)[4] and Rose et. al (2009)[5], and stated that a rate of 30 boats per lane per day is considered to provide unhampered overall amenity, whereas a rate of 50 boats per lane per day represents congested operations; thus a midpoint of 40 launches / retrieves per day was selected to represent a balanced scenario.

TMR (2016)[6] provides guidance on its standard/reference number of CTU spaces to match boat ramp lanes:

- 90 CTUs for four-lane ramps
- 70 CTUs for three-lane ramps
- 45 CTUs for two-lane ramps
- 15 CTUs for one-lane ramps with sealed road access
- 10 CTUs for one-lane ramps with all-weather, unsealed road access.

The above figures indicate an average relationship of 22.5 CTU spaces per "effective" lane. The TMR reference standards differ from the number of CTU spaces recommended for public boat launching ramps by AS 3962. That standard requires between 20 and 60 CTU spaces per ramp lane, depending on whether the ramp is in an urban or rural area, whether it has a queuing structure, and whether it has separate rigging and de-rigging areas. For local reasons, TMR may vary from these reference figures in particular cases.

The actual capacity, or "effectiveness" of a boat ramp is unique for each ramp, and is affected by:

- a reduction in the amount of time a ramp is available for use due to tidal variability, the seaward extent of ramp infrastructure, and navigable depths – at each ramp being measured as the % availability of the tidal range that a vessel can be realistically launched or retrieved – with ramps classified as all-tide (100%), near all-tide (>80%), and part-tide (50%) for access – and the reduction in availability occurring either:
  - at the ramp itself, and/or
  - in access channels connecting the ramp to the sea/open water (such as at a river mouth or other channel depth constraint)
- the exposure of the ramp to regular, and sometimes major, wave action – these facilities tending to be beach ramps that are generally only suitable for short excursions in small boats in good weather and with suitable tides – accordingly these ramps are considered to be available only 50% of the time
- factors impacting efficient vessel launching and retrieval cycles, which include:
  - provision of queuing facilities such as pontoons, floating walkways or beaches – with such queuing facilities increasing the capacity of a boat ramp by providing a place for a vessel to be secured during vehicle parking or retrieval without blocking a ramp lane, leading to greater throughput
  - constrained or difficult manoeuvring of vehicles and trailers onto the ramp
  - long distances between the boat ramp and CTU parking spaces

[4] SKM (1988) Public Boat Ramps Central Queensland Strategic Plan, Volume One, demand forecasting – Noosa to Yeppoon
[5] Rose, T., Powell R., & Yu J. (2009) Identification of the Present and Future Recreational Boating Infrastructure in Redland City – A 10 year Infrastructure Plan, Griffith University
[6] TMR (2016) Marine Facilities and Infrastructure Plan

- the physical extent of infrastructure provided, such as:
  - the width and number of ramp lanes
  - the number of CTU parking spaces within the facility
  - provision for overflow parking during busy periods.

To calculate effective lanes at a boat ramp, the following adjustments have been applied to water-side infrastructure:

- all-tide – no change (that is, multiplication factor of 1.0)
- near all-tide – available 80% of the time (that is, multiplication factor of 0.8)
- part-tide – available 50% of the time (that is, multiplication factor of 0.5)
- beach ramp – available 50% of the time (that is, multiplication factor of 0.5)
- access to a queuing facility in the form of a floating walkway – increase efficiency by 50% (that is, multiplication factor of 1.5)
- access to a queuing facility such as a gangway-access pontoon – increase efficiency by 20% (that is, multiplication factor of 1.2).

Access to a beach, while convenient, is not suitable for all vessel sizes or preferred by some vessel owners, and therefore has not been considered to improve the capacity of a boat ramp.

As an example, the water-side effective lanes for a near all-tide, two-lane boat ramp with a floating walkway will be calculated as:

2	x	0.8	x	1.5	=	2.4
lanes		tidal availability		queuing structure		effective lanes

To calculate the land-side constraint on effective lanes, the following CTU groupings have been applied:

- 1 to 9 CTU – 0.5 effective lanes
- 10 to 20 CTU – 1 effective lane
- 21 to 29 CTU – 1.5 effective lanes
- 30 to 39 CTU – 1.8 effective lanes
- 40 to 54 CTU – 2 effective lanes
- 55 to 64 CTU – 2.5 effective lanes
- 65 to 75 CTU – 3 effective lanes
- 76 to 83 CTU – 3.5 effective lanes
- 84 to 97 CTU – 4 effective lanes
- 98 to 105 CTU – 4.5 effective lanes
- 106 to 117 CTU – 5 effective lanes
- 118 to 127 CTU – 5.5 effective lanes
- 128 to 140 CTU – 6 effective lanes
- 141 to 149 CTU – 6.5 effective lanes
- 150 to 157 CTU – 7 effective lanes.

Unmarked or unformed parking areas are denoted accordingly. The number of CTU parking bays may also be the limiting factor on effective capacity, owing to the number of bays provided being less than the TMR reference standard.

The calculation is illustrated further in Appendix B, which details the actual and effective lanes for each facility.

The effective capacity of a facility is therefore limited by the constraining or “bottlenecking” element, and to realise full capacity a facility must balance the land-side and water-side capacities. The capacity assessment in Appendix B also identifies the limiting capacity constraint for each facility.

4.1.2 Boat ramp classification

As previously discussed, each boat ramp is subject to a unique set of constraints and opportunities, particularly in relation to tidal accessibility. To understand how well existing boat ramp facilities meet current demand, consideration has also been given to the recreational destination(s) accessed by each facility. Where available, this has been informed by local knowledge on actual usage.

Regardless of the tidal range available at the ramp itself, boat ramps typically seek to cater to one or more of the following destinations:

- access to the sea for fishing, diving, islands, jet skiing, and general recreation
- access to creeks and estuaries for fishing, crabbing, skiing and general recreation
- access to fresh water for fishing, skiing, jet skiing, and general recreation.

However, there are some practical limitations on the usage of a ramp for these purposes. These include:

- vessel size, as:
  - Small vessels are unsuitable for use in open and exposed waters under most conditions, although they may be taken into nearshore waters in calm conditions or for short journeys. These vessels are most suited to use in protected waterways such as creeks and estuaries.
  - Large vessels suited to offshore use may be physically constrained in very narrow or shallow waterways, such as the upstream reaches of creeks or estuaries.
- travel time to destination, as:
  - Although navigable access from a boat ramp to open water may be possible, it may not be practical due to the distance travelled by water and/or any speed restrictions that may be in place for the waterway. Most people will seek to launch at the facility that takes the least time to reach their destination. This is particularly the case for offshore destinations where larger volumes of fuel must be paid for and carried to allow for the journey.

Discussions with local government stakeholders throughout the state indicated that vessels longer than 4.5m were generally used to access offshore areas, with smaller vessels tending to be used for creek and estuary access. There will be circumstances where smaller vessels will be used to travel offshore and larger vessels will stay in protected waters.

At facilities where open-water access becomes difficult, the Study assumes that the facility will be more frequently used for accessing local creeks, estuaries, and freshwater areas. Facilities have therefore been classified into one of the following categories to reflect the primary level of accessibility between the ramp and open water:

- open-water access – all-tide access
- depth-limited – access to open-water possible but navigation limited at certain stages of the tide by water depth, for example, crossing a tidal bar, or sand shoals in an estuary
- distance-limited – access to open-water possible but limited by longer travel times between the ramp and open-water, for example due to long distances, or speed restrictions in the waterway – with, in some instances, depth also being a limitation but distance being considered as the main constraint
- infrastructure-limited – access limited by configuration or size or nature of the infrastructure, for example, a low bridge preventing navigation
- beach ramps
- no open-water access – access to open-water is not possible or practical, for example, a facility in a dam, or on the upstream side of a weir, barrage, or waterfall.

4.1.3 Existing capacity

The existing boat ramp facilities have been assessed individually to quantify their "effective" lane capacity. This assessment is presented in Appendix B and summarised in Table 6.

TMR's Marine Infrastructure Investment Program (MIIP) – at December 2016 – sets out the infrastructure planned and funded for implementation until the end of the 2017-18 financial year, and includes the government's Marine Infrastructure Fund capital projects. Specific projects scheduled for implementation in the Whitsunday Regional Council area under the MIIP that seek to increase the capacity of marine infrastructure comprise the:

- addition of a floating walkway to the Bowen Boat Harbour ramp
- addition of two new lanes to the Conway Road (Proserpine River) ramp
- installation of a new pontoon in the Whitsunday area (nominally Shute Harbour).

The implementation of these upgrades informs the "effective" capacity in Appendix B. The summary in Table 6 shows (in brackets) the modified capacity following implementation of these projects.

Key observations drawn from this analysis include:

- There are notably more facilities in the Whitsunday LGA that provide access to open-water than those that provide access into estuaries or river/creek systems.
- There are two freshwater facilities.
- The capacity at all-tide, open-water access facilities is constrained by the availability of sufficient CTU parking to fully support the water-side infrastructure already at the site, while at all other facilities capacity is constrained by the water-side infrastructure.
- There are 23 actual lanes but only 20.4 effective lanes at present, reflecting limitations imposed by tidal restrictions. This is most evident for facilities that provide depth-limited open-water access, where there are currently six actual lanes but only 3.9 effective lanes.
- The MIIP (as at December 2016) provides a small amount of additional capacity in terms of effective lanes.

Table 6 – Summary of existing/planned* boat ramp effective capacity by access type, Whitsunday Regional Council

Facility accessibility and tidal availability at the ramp	# of facilities	# facilities limited by		Actual # of lanes	Effective lanes
		Water-side infrastructure	Land-side infrastructure		
Open-water access					
All-tide	5 (5)	1	4 (4)	12 (12)	13 (13)
Near all-tide	0	0	0	0	0
Part-tide	0	0	0	0	0
Subtotal	**5 (5)**	**1**	**4 (4)**	**12 (12)**	**13 (13)**
Depth-limited open-water access					
All-tide	0	0	0	0	0
Near all-tide	0	0	0	0	0
Part-tide	2 (2)	2 (2)	0	6 (8)	3.9 (5.4)
Subtotal	**2 (2)**	**2 (2)**	**0**	**6 (8)**	**3.9 (5.4)**
Distance-limited open-water access					
All-tide	0	0	0	0	0
Near all-tide	0	0	0	0	0
Part-tide	0	0	0	0	0
Subtotal	**0**	**0**	**0**	**0**	**0**
Infrastructure-limited open-water access	**0**	**0**	**0**	**0**	**0**
Beach ramps	**2**	**2**	**0**	**3**	**1.5**
No open-water access	**2**	**2**	**0**	**2**	**2**
Total	**11 (11)**	**7 (7)**	**4 (4)**	**23 (25)**	**20.4 (21.9)**

**Numbers in brackets include MIIP announced projects/upgrades as at December 2016*

4.2 Landing capacity for deep-draught vessels

The function of most landings is to provide short-term shore access for deep-draught vessels to facilitate the transfer of passengers, provisions, or to make short excursions to the shore via tender dinghy. Landings may be located on the coast or in navigable river systems within the LGA, but are of little use unless sheltered from on-shore winds and wave action.

For this Study, landings include jetty and pontoon structures that facilitate direct berthing of non-trailable vessels (keel boats and >8.0m powerboats), transient vessels, and/or tenders from larger vessels (where effective anchoring, berthing, or mooring is available nearby).

4.2.1 Capacity evaluation

The measurement of the recreational capacity of a landing is complex, as it is affected by:

- exposure of the landing to wind and wave conditions
- size and condition of the landing
- tidal availability
- the length of stay permitted
- enforcement practices
- competition from non-recreational boating users (such as authorised commercial users).

To accommodate these factors, landing capacity has been considered in the context of each landing's:

- contribution to a network of public landings within the LGA, and within a day's sail of a landing outside the LGA
- proximity to existing private/commercial recreational boat landings that accommodate visitors (such as those provided by yacht clubs)
- ability to service key destinations, such as access to basic provisions, key population areas or recreational destinations
- proximity to existing anchorage or mooring areas
- anecdotal usage.

4.2.2 Existing capacity – deep-draught vessel landings

Within the Whitsunday Regional Council area, there are four public landings that can be accessed by larger and deeper draught vessels for short-term stays (a couple of hours or less), as detailed in section 3.1.

Key observations indicate that:

- The existing landing facilities on South Molle and Daydream Islands mainly provide commercial vessel access to National Park areas and accommodation. Their contribution to recreational capacity is therefore considered to be negligible.
- The pontoon in Bowen State Boat Harbour is well-used and currently services the pile moorings in the harbour. Tenders from vessels in the moorings are frequently secured to the inner faces of the landing. Basic provisions are available in central Bowen, approximately 1.5km walking distance. The harbour also contains slipways and other marine services. This pontoon is the northernmost deep-draught landing in the LGA – the next reliable landing to the north is in Townsville.
- The Shingley Road, Abell Point pontoon is very popular and used by recreational vessels cruising the Whitsunday Islands. Basic provisions are available in Airlie Beach, approximately 2km north, and the Abell Point Marina is immediately adjacent. There is room for a small number of tenders to be secured to inner faces of the pontoon, however the popularity of the facility indicates that additional capacity is required. An additional landing for the Airlie Beach/Shute Harbour area is planned in the MIIP (as at December 2016), although the exact location for this landing is yet to be confirmed.

Although outside the scope of this study, key privately owned modern facilities within the LGA that also actively contribute to landing capacity includes:

- Abell Point Marina (Airlie Beach), which services the marina and anchored vessels outside of the marina walls and is in close proximity to the tourist centre of Airlie Beach
- Port of Airlie, which services the marina and anchored vessels outside of the marina walls, and is located approximately 3.5km from the Airlie Beach shopping area
- Whitsunday Sailing Club, located at Airlie Beach next to the Port of Airlie
- the marina on Hamilton Island (Whitsunday Island Group), which has fuel, marine supplies and access to basic provisions – the marina on Hayman Island is only available to resort guests
- North Queensland Cruising Yacht Club (in Bowen State Boat Harbour, immediately adjacent to the public landing).

The effective capacity of landings servicing the Whitsunday LGA is summarised in Table 7.

Table 7 – Existing landing capacity, Whitsunday Regional Council

Evaluation category	Existing effective capacity*
# of public sheltered mainland landings	2 (3)
# of public island landings – supplies available	0
# major private landings	5
Total	**7 (8)**
Facilities not contributing to recreational capacity:	
# of public unsheltered mainland landings	0
# of public island landings – no supplies available	2

**Numbers in brackets include MIIP announced projects/upgrades as at December 2016*

5. Demand assessment

The assessment of demand for recreational boating has been evaluated in terms of facilities for launching and retrieval of vessels (that is, boat ramps), and landings for short-term stays (generally less than a couple of hours). The demand for:

- boat ramps is driven by trailable vessels that can access the ramp
- landing facilities is focussed on providing a network of short term landings that service key land-side destinations (such as shops) of relevance or attraction to the boating community, with a particular focus on larger (non-trailable) vessels.

5.1 Boat ramp demand

The demand for boat ramps has been quantitatively evaluated using vessel registrations as the key indicator. The vessel registrations have been converted to an effective lane demand based on a typical boat ramp lane being able to accommodate 40 launch/retrieval manoeuvres per day.

The following section details the assessment of vessel registrations taking into consideration where vessels are likely to be used relative to where they are registered, and the demographics of the local area.

5.1.1 Registration distribution

People using the boat ramp facilities at a particular location are attracted to that facility by several factors, including:

- proximity to home
- road access (quality and distance)
- proximity to vessel destination (reef, open water, islands, creeks, estuary, fishing grounds, skiing areas, and so on)
- quality of the experience and ease of use (launching/retrieval, parking, security, complementary facilities, and so on).

This means that at many locations and at various times, ramp users will travel out of the LGA in which their vessel is registered to use boat ramp facilities in a different LGA. In some locations, demand is driven by ramp users from outside of the LGA, particularly if the ramp is in reasonable proximity to desirable boating destinations such as fishing grounds or popular islands.

Additional detail on the determination of the registration distribution is provided in Appendix C. Note that vessel registrations are less in inland LGAs compared to adjacent coastal LGAs.

A summary of the relative geographic contribution of demand to boat ramp facilities located in the Whitsunday Regional Council area is shown in Table 8 below for 2016 registration data.

5.1.2 Registration activation

TMR's approach to the provision of infrastructure for recreational boating is to aim to satisfy average demand rather than peak demand (TMR, 2016)[7].

TMR recognises three levels of demand:

- off-peak demand – to be met in almost all circumstances
- average demand – taken to be demand for a facility on weekends (and for certain regional locations other busy periods)
- peak demand – being demand for a facility at peak holiday periods and for special events such as major fishing competitions.

The qualifier on certain regions and circumstances for average demand recognises that in some areas high numbers of shift workers tend to distribute the demand more evenly across each week.

Provision is not made by TMR for peak boating periods such as Christmas, Easter, school holidays, and long weekends. For facilities provided by them, councils and port/water authority managers may choose to cater for higher than average demand.

Research referenced in the previous demand assessment study (GHD, 2011)[8] indicated that average to high demand was represented by 8% to 14% of registered vessels seeking to use a boat ramp on a typical weekend. This percentage has been termed as "registration activation" for the purposes of this Study.

To better represent the demand within each local government area, refinement of the registration activation percentage considered the following factors as influencing boating popularity over other recreational opportunities:

- incidence of blue collar employment (based on Census data)
- average age of residents (based on Census data)
- remoteness classification by local government area
- whether the LGA is coastal.

Detail on the process for local refinement of registration activation is provided in Appendix C. The adopted parameters for this assessment are summarised in Table 8.

Key observations relevant to the registration activation include a high incidence of older and blue collar workers compared to the state average outside the Whitsunday LGA.

[7] TMR (2016) Marine Facilities and Infrastructure Plan
[8] GHD (2011) Recreational Boating Facilities Demand Forecasting Study. Report prepared for TMR, September.

Table 8 – Contribution to demand for boat ramp facilities, Whitsunday Regional Council

Contributing LGA	% of contributing LGA using Whitsunday facilities*	# of registered vessels from contributing LGA using Whitsunday facilities	% registration activation	Contribution comment
Whitsunday	93%	4,922	14%	Resident population Older, blue collar, remote, coastal
Burdekin	5%	172	12%	Visitation from adjacent coastal LGA Older, blue collar, regional centre, coastal
Isaac	2%	40	12%	Visitation from adjacent LGA Blue collar, remote, coastal
Mackay	6%	805	10%	Visitation from coastal LGA Blue collar, regional centre, coastal

**See Economic Associates Appendix C for percentage estimates*

Key observations regarding boat ramp demand relevant to the contributions from the various sources include:

- Population areas within the Whitsunday LGA are largely clustered towards the eastern part of the LGA but are constrained by mountainous areas and expansive low-lying areas around river systems. Most (93%) Whitsunday residents are considered to use facilities within the LGA. The remaining 7% are considered to use facilities in Burdekin or Mackay LGAs.
- Demand for tidal facilities from inland population centres of Isaac Regional Council is shared with Mackay due to the road network.
- Demand for tidal facilities from Burdekin Shire Council is dominated by the use of the Molongle Creek boat ramp to access properties on Cape Upstart.
- Boat ramp facilities are located similar distances either side of the boundary of Whitsunday LGA with Mackay Regional Council. Sharing of demand between Whitsunday and Mackay LGAs is expected to be relatively small, although Airlie Beach facilities will attract visitation from Mackay residents seeking access to the Whitsunday Islands.

In addition to usage of the Whitsunday facilities by residents from Whitsunday and adjacent LGAs, the Whitsunday area is considered to record a significant uplift in boating infrastructure demand as a result of tourism activity. Some of this increased boating tourism will be commercial, some will be incurred by residents taking visiting friends and relatives out on their boats, and other demand will be from general boating visitation.

Economic Associates (Appendix C) assumed that Whitsunday would experience a 20% uplift in boat ramp lane demand as a result of tourism activity throughout the year.

5.1.3 Demand classifications

The demand by registered vessels has been sub-classified to better align with differing types of destinations:

- Smaller vessels (less than 4.5m in length) are considered to be generally used to access protected waters such as creeks and estuaries, and to venture into nearshore waters during good weather conditions.
- Larger vessels (between 4.5 and 8m in length) are considered to be generally used to access offshore waters, but seek protected waters during poor weather conditions. Depending on the location, some larger vessels are unable to use more tidally restricted facilities in creeks and estuaries.

5.1.4 Boat ramp lane demand

Applying the registration distribution and activation factors to vessel registration data results in an effective quantitative demand for boat ramp lanes within the catchment. This is summarised in Table 9, and shown in terms of small and large vessel demand. Assumptions used in the projections for future growth in demand are provided in Appendix C (Economic Associates report).

Table 9 – Boat ramp lane demand projections, Whitsunday Regional Council

Vessel length	Boat ramp lanes				
	2016	2021	2026	2031	2036
0 to 4.5m	17	18	19	20	22
4.5 to 8m	8	10	10	11	11
Total	**25**	**28**	**29**	**31**	**33**

Key observations relevant to the catchment demand include:

- The majority of demand on facilities originates from Whitsunday Regional Council residents.
- Demand from small boats is approximately twice that of larger boats.
- Growth is forecast to be relatively consistent over the next 20 years.

5.2 Deep-draught vessel landing demand

5.2.1 Local usage and network

Along with private marina facilities, the Shingley Road (Airlie Beach) and Bowen pontoons form part of a network of mainland landings accessible by deep-draught vessels cruising the Queensland coast. Approaching Whitsunday LGA from the south, there are no mainland public landings in the Mackay or Isaac LGAs, and the nearest public landing is in Rosslyn Bay (Yeppoon), almost 250 nautical miles away. There are private marina facilities in the Mackay LGA, with the closest approximately 46 nautical miles south of Airlie Beach at Laguna Quays. From Airlie Beach north to Bowen is a sailing distance of approximately 37 nautical miles. Continuing north, it is approximately 50 nautical miles from the public landing in Bowen to the tide-restricted public landing at Groper Creek in Burdekin Shire, or 112 nautical miles to deep-draught facilities in Townsville.

Depending on the weather conditions and seasonal trade winds, Laguna Quays, Airlie Beach, Bowen and Groper Creek are within a day's sail of each other. However, for reliable supplies and major facilities a significantly longer sail to either Townsville, private facilities in Mackay or Rosslyn Bay may be necessary.

Given the Whitsunday Island group's status as a tourist destination, visiting vessels tend to stay for more than one night, and therefore will need to seek an overnight protected berth or

anchorage. Commercial marina facilities cater to this demand, providing landing facilities for their members and for casual visitors. Moorings or berths are generally available in Bowen State Boat Harbour or at one of the private facilities in Airlie Beach, and anchorages are available in Pioneer Bay outside of the marinas.

Given the popularity of the area, an additional public landing is planned for the Airlie Beach/ Shute Harbour area as part of the current MIIP (as at December 2016). The location of this new landing is yet to be determined.

The Daydream and South Molle Island jetties are used more for day use commercial access rather than forming part of the travelling recreational network. Neither of these facilities are considered to be overloaded by stakeholders.

5.2.2 Landing demand

The projected demand for deep-draught vessel landings within the Whitsunday Regional Council area was assessed by Economic Associates as being driven by the size of the non-trailable fleet. A key difficulty with this assessment is understanding how long visits lasts. It was assumed that demand comprises 5% of the active non-trailable fleet seeking to access a landing. The assessment is shown in Table 10.

It is considered that most of this demand would be focussed on the Airlie Beach area, given the status of the Whitsunday Islands as a sailing destination.

Table 10 – Landing demand projections, Whitsunday Regional Council

Evaluation category	Landings				
	2016	2021	2026	2031	2036
# of landings	6	7	7	8	8

6. Development needs and opportunities

The need for additional recreational boating infrastructure within the Whitsunday Regional Council area has been identified by comparing the existing capacity within the area with the expected demand.

6.1 Evaluation of needs

6.1.1 Development priorities

The priorities for development are linked to need and funding cycles, as follows:

Priority 1 (P1) These sites are identified to meet existing demand.

Priority 2 (P2) Assuming that the priority 1 sites are implemented, these sites are identified to meet additional demand over the next 5 years.

Priority 3 (P3) Assuming that the priority 1 and 2 sites are implemented, these sites are identified to meet additional demand over the subsequent 5 years, i.e. 2021 to 2026.

Priority 4 (P4) These sites are those that will meet future demand, but are not expected to be required before 2026 in demand terms but may be brought forward for construction for other reasons.

6.1.2 Quantification of shortfall – boat ramp lanes

The overall demand for boat ramp lanes compared to the effective capacity provided by existing facilities is summarised in Table 11.

Table 11 – Projected boat ramp lane shortfall, Whitsunday Regional Council

Evaluation category	Existing effective capacity*	2016		2021		2026		2036	
		Demand	Shortfall	Demand	Shortfall	Demand	Shortfall	Demand	Shortfall
All vessels, all facilities	21.9	25	3.1	28	6.1	29	7.1	33	11.1

**Existing effective capacity includes MIIP announced projects/upgrades as at December 2016*

However, the provision of additional boat ramp lanes needs to cater to the type of demand to appropriately address that demand. This realistically translates to:

- large (that is 4.5 to 8m) vessels seeking access to open-water
- small (that is <4.5m) vessels not seeking access to open-water.

As there will be some small vessels seeking access to open-water, and some larger vessels not seeking access to open-water, an envelope of projected need has been developed. The best estimate represents the average need within the envelope.

This analysis is shown in Table 12 for facilities classified as providing unhindered open-water access from all-tide or near all-tide facilities, with the envelope of projected need in the Whitsunday LGA based on the following:

upper bound = 100% larger vessels + 50% smaller vessels

lower bound = 90% larger vessels + 30% smaller vessels

Table 12 – Projected boat ramp lane shortfall, open-water access facilities, Whitsunday Regional Council

Evaluation category	Existing effective capacity*	2016		2021		2026		2036	
		Demand *	Shortfall	Demand	Need	Demand	Shortfall	Demand	Shortfall
Best estimate	**13**	**14.4**	**1.4**	**16.7**	**3.7**	**17.1**	**4.1**	**19.3**	**6.3**
Upper bound	13	16.5	3.5	19	6	19.5	6.5	22	9
Lower bound	13	12.3	-0.7	14.4	1.4	14.7	1.7	16.5	3.5

**Existing effective capacity includes MIIP announced projects/upgrades as at December 2016*

**Example of demand calculation: Upper bound 2016 – 100% of larger vessels (Table 9) + 50% of smaller vessels (Table 9) = 8 + 8.5 = 16.5*

The analysis was also conducted for facilities classified as not providing open-water access, or where water depth or the on-water travel time meant that the facility could not reliably or realistically provide access to open-water (see Table 13). In this analysis, the envelope of projected need in the Whitsunday LGA was based on the following:

upper bound = 70% smaller vessels + 10% larger vessels

lower bound = 50% smaller vessels + 0% larger vessels

Table 13 – Projected boat ramp lane shortfall, non-open-water access facilities, Whitsunday Regional Council

Evaluation category	Existing effective capacity*	2016		2021		2026		2036	
		Demand	Shortfall	Demand	Shortfall	Demand	Shortfall	Demand	Shortfall
Best estimate	**8.9**	**10.6**	**1.7**	**11.3**	**2.4**	**11.9**	**3**	**13.7**	**4.8**
Upper bound	8.9	12.7	3.8	13.6	4.7	14.3	5.4	16.5	7.6
Lower bound	8.9	8.5	-0.4	9	0.1	9.5	0.6	11	2.1

**Existing effective capacity includes MIIP announced projects/upgrades as at December 2016*

There will be some facilities that have been calculated as a "non-open-water access" facility that can, under some circumstances, provide open-water access. However, for the majority of users, access into the local waterway is the primary destination. This also applies to "open-water access" facilities in waterways, where some users will travel upstream into the waterway rather than going offshore.

Given that the majority of demand is driven by Whitsunday Regional Council residents, the location of additional or upgraded facilities should be targeted to service the main population centres of:

- Cannonvale/Airlie Beach
- Proserpine
- Bowen

Regional areas and smaller communities elsewhere in the LGA are currently serviced by unsheltered and/or tide-limited facilities. Improvement of the quality of this access should also be considered for these areas.

6.1.3 Quantification of shortfall – deep-draught vessel landings

The assessment of shortfall in landings is shown in Table 14. This assessment indicates that at present the public network in conjunction with the supplementary capacity provided by commercial or club landings is adequate to cater for existing and projected demand.

Table 14 – Projected landing shortfall, Whitsunday Regional Council

Evaluation category	Existing effective capacity*	2016		2021		2026		2036	
		Demand	Shortfall	Demand	Shortfall	Demand	Shortfall	Demand	Shortfall
# of landings*	8	6	-2	7	-1	7	-1	8	0

**Existing effective capacity includes MIIP announced projects/upgrades as at December 2016*

**# of landings consists of public sheltered mainland landings, public island landings – supplies available and major private landings*

Given that most of the demand for landings is expected to be focussed on the Airlie Beach area, the projected landing shortfall has been assessed to illustrate the expected shortfall in this vicinity, as shown in Table 15.

Table 15 – Projected landing shortfall, Airlie Beach area

Evaluation category	Existing effective capacity*	2016		2021		2026		2036	
		Demand	Shortfall	Demand	Shortfall	Demand	Shortfall	Demand	Shortfall
# of landings*	6	6	0	7	1	7	1	8	2

**Existing effective capacity includes MIIP announced projects/upgrades as at December 2016*

**# of landings consists of public sheltered mainland landings, public island landings – supplies available and major private landings in the Airlie Beach and Whitsunday Island group*

6.2 Identified stakeholder opportunities

Table 16 summarises the key facilities and sites identified by stakeholders during consultation activities as requiring consideration.

Table 16 – Stakeholder identified opportunities to increase capacity, Whitsunday Regional Council

Facility	Stakeholder comments	Study comments
Conway Road, Proserpine River	Well-used facility. Open-water access limited by depth at river mouth. Ramp expansion desirable. Protection from wind and wave action desirable. Minimisation of silt build-up on ramp desirable.	Expansion of facility to 4-lanes with a floating walkway is planned in the current MIIP as at December 2016. The primary TMR-advised purpose of the upgrade is to provide wave protection from the extensive fetch downstream in the river. Parking likely to remain at 2-lane capacity until demand warrants an increase. No further upgrade currently recommended.

Facility	Stakeholder comments	Study comments
Dingo Beach, Cape Gloucester area	Beach ramp. Only formal ramp in the Cape Gloucester area. All-tide, sheltered open-water access in the Cape Gloucester area desirable.	Facility is effectively a ramp for the local community. Coastal exposure of site would necessitate harbour scale development to provide suitable sheltering from wind and wave action, and increased depths for all-tide or even near all-tide open-water access. The breakwater structures required for ramp protection would need to be of substantial length, and would need to be accompanied by long-term, significant maintenance of local sediment transport to avoid adverse impacts on the adjacent coastline and maintain navigable access. Sheltered all-tide, open-water access provided at Bowen and Airlie Beach, which are within one-hour driving time. Upgrade to facility not currently recommended, but alternative ramp location in the Cape Gloucester area recommended.
Bowen Boat Harbour, Bowen	Well-used facility. Excellent open-water access. Potential for future redevelopment. Options for ramp relocation and expansion.	Area available for parking expansion. Internal reconfiguration of harbour layout suggested. MIIP has a floating walkway scheduled, which will improve throughput capacity without extra lanes. No upgrade currently recommended.
Molongle Creek, Gumlu	Popular facility for Burdekin residents. Poor tidal access. Use is limited by tide. All-tide, sheltered, open-water access is necessary.	Long-term, significant dredging required to provide all-tide or near all-tide, open-water access, particularly to access private properties on Cape Upstart with some protection from prevailing SE winds. Major dredging is recommended.
Abell Point Marina (Airlie Beach)	Well-used facility. Excellent open-water access. Parking is limited. Options for parking expansion are limited.	Land-side area at the facility is constrained due to adjacent development and associated parking plus topography and main road proximity constraints. Upgrade to facility not currently recommended.

Facility	Stakeholder comments	Study comments
Shute Harbour Road, Shute Harbour	Well-used facility. Good open-water access. Options for facility expansion are limited.	Options to expand both waterside and landside infrastructure at existing facility are limited by topography and existing development. Consider maintenance works to extend life of existing ageing boat ramp, rather than demolition, as it is still needed to meet demand. New facility nearby recommended.

7. Development priorities

7.1 Methodology for selecting priorities

7.1.1 Boat ramp facilities

The selection of recommended works and their priority level has been considered on several levels. The first level of consideration for increasing boat ramp capacity is founded on two main criteria:

- type of access required – open-water or non-open-water
- preference for expansion of existing facilities if suitably located.

Expansion of existing facilities is preferred over the establishment of new facilities in locations where travel times for most users to the existing facilities are not onerous, as road infrastructure for access is already in place and the foreshore is currently allocated to the purpose.

TMR's Marine Facilities and Infrastructure Plan (2016)[9] also guides the prioritisation of boating facilities. This plan states that:

> *"The department favours proposals for boat launching and landing facilities that give access to the open sea at all tides.*
>
> *Priority will be given to the provision of sheltered all-tide or near all-tide launching facilities giving access to the open sea on an all-tide or near all-tide basis.*
>
> *Part-tide facilities (for launching or access) may be provided where there is demand, and dredged access is not feasible. For instance, beach access or open beach ramps may be provided where there is sufficient demand and no suitable nearby sheltered waterway." (Section 3.1.1 – Coastal locations – guideline).*
>
> *"Access channels are not normally provided to open beach boat ramps. Beach access and open beach boat ramps are regarded as part-tide facilities." (Section 6.8 – Dredging of access channels to beach ramps – guideline).*

The process used within each LGA identified opportunities to meet the need for ramp lanes for each type of access (open-water/non-open-water) at each of the priority time steps (2016, 2021, 2026 and 2036), is set out in the flowchart in Figure 1. Once the forecast shortfall for ramp lanes for a priority level has been met, further consideration of facilities falls to the next priority level until all forecast shortfall is met.

[9] TMR (2016) Marine Facilities and Infrastructure Plan

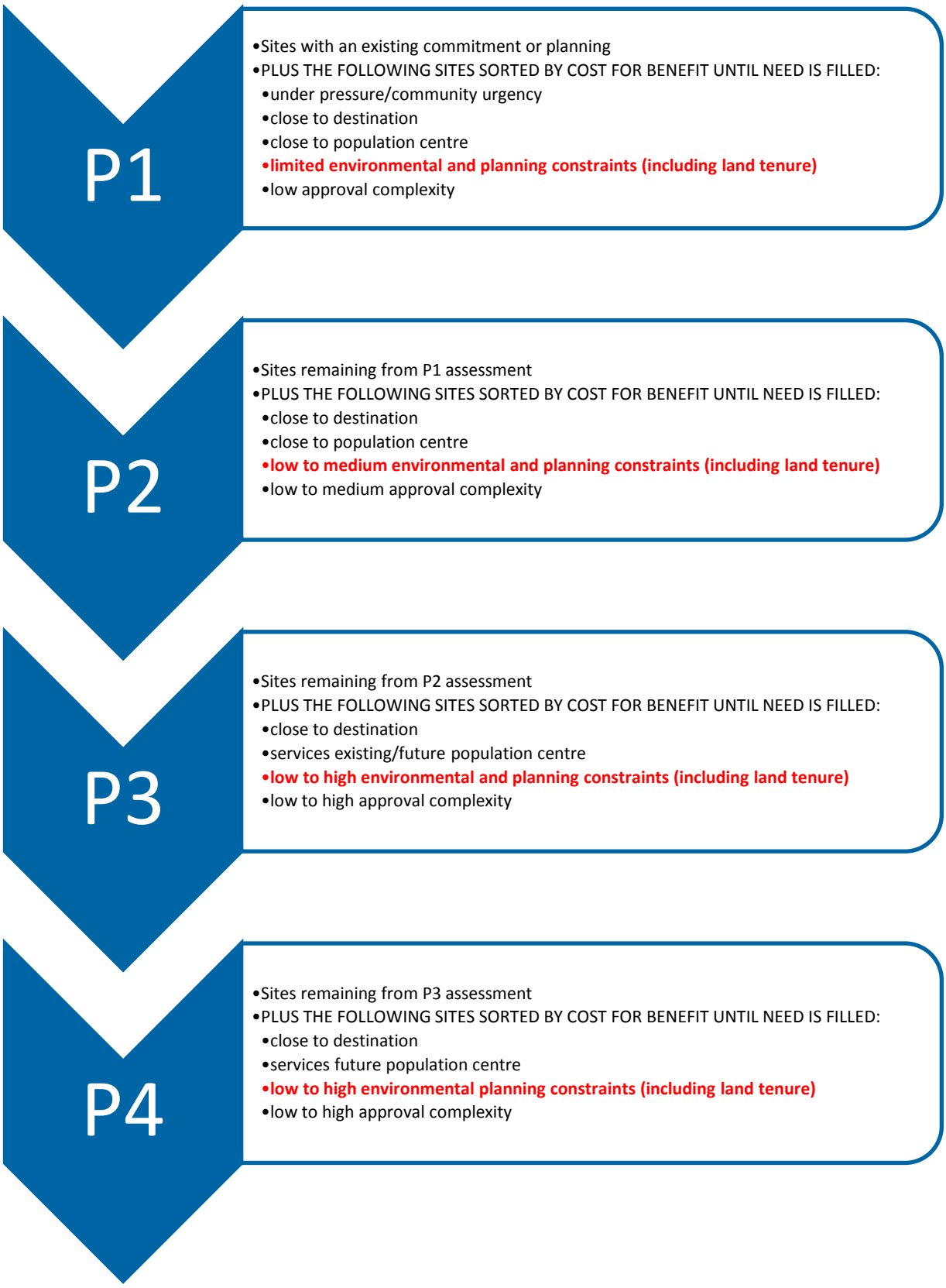


Figure 1 – Priority selection methodology

7.1.2 Deep-draught vessel landings

The criteria for recommended works and priorities for landings comprises:

- the geographical spread of existing facilities
- unserviced destinations and popular anchorages
- access to water of sufficient depth
- access to landside services (shops or transportation) for mainland locations.

In some instances, deep water is not available and so provision for access by tenders or at higher tides is made.

In most instances where demand for additional landings is identified, there are very few locations that satisfy all needs. The prioritisation for these facilities is based on stakeholder perceptions of urgency. From a stakeholder perspective, the demand for landings is all current (that is, now). However, the recommendations have matched the timing of new landings to the demand forecast.

7.2 Recommended priorities

Table 17 – Recommended priorities to increase capacity, Whitsunday Regional Council area

Priority	Sites
Priority 1 (as soon as possible)	Lake Proserpine (Peter Faust Dam) – expand ramp by 2-lanes and increase parking to 70 CTU spaces (reclamation/major earthworks required). Feasibility of a floating walkway/pontoon should be considered.
	Molongle Creek – capital dredging to provide all-tide access to open-water.
Priority 2 (over the next five years)	New facility in Cape Gloucester area – 2-lane ramp with parking for 45 CTUs.
Priority 3 (over the next five to ten years)	New facility at Shute Harbour – new 4-lane ramp with floating walkway and remark existing car parking areas for 90 CTU spaces.
	New facility at Glen Isla Road, Glen Isla – 2-lane ramp with floating walkway and 45 CTU spaces.
Priority 4 (other)	Nil

7.3 Capacity evaluation incorporating development priorities

The effective lane capacity has been reassessed to incorporate the delivery of the recommended development priorities as shown in Table 18, and described in detail in the following sections. The increase in effective lanes gained by each recommendation is shown in the relevant table for that recommendation.

Note that some of the demand for non-open-water access facilities will be met by open-water access facilities such as those at Cape Gloucester.

Table 18 – Effective lane and landing capacity after delivery of recommended priorities, Whitsunday Regional Council

Evaluation category	Existing effective capacity*	2016		2021		2026		2036	
		Demand	Post-delivery effective capacity	Demand	Post-delivery effective capacity	Demand	Post-delivery effective capacity	Demand	Post-delivery effective capacity
Open-water access	13	14.5	15	17	17	17	21	19	21
Non-open-water access	9	10.5	11	11	11	12	13	14	13
All vessels, all facilities	22	25	26	28	28	29	34	33	34
# of landings*	8	6	8	7	8	7	8	8	8

**Existing effective capacity includes MIIP announced projects/upgrades as at December 2016*

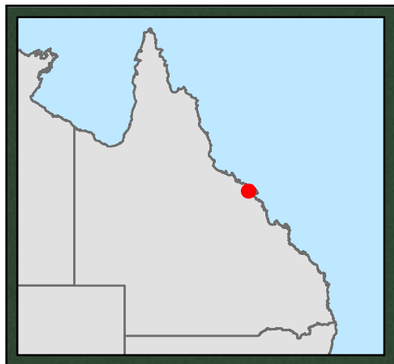
**Effective capacities are reported to the nearest 0.5 of a lane*

**# of landings consists of public sheltered mainland landings, public island landings – supplies available and major private landings*

7.4 Priority 1 sites

Table 19 – Priority 1 – Lake Proserpine, Peter Faust Dam

Site name	Lake Proserpine, Peter Faust Dam	
Existing formal facility?	Yes	
Location	On the eastern shoreline of Lake Proserpine, off of Crystal Brook Rd/Proserpine Station Road	
Current tidal status	Fresh water, no open-water access	
Site characteristics	The current site contains a single boat ramp lane accompanied by a large unmarked parking area. The surrounding land is steeply sloped but a man-made flat expanse has been created for the parking and ramp manoeuvring area.	
Proposed works	Expansion of the existing boat ramp to accommodate 2 new boat ramp lanes (bring facility to 3-lanes). Expansion and marking of the parking area to accommodate 70 CTU spaces (reclamation/major earthworks will be required). Inclusion of a floating walkway if feasible from an engineering and water level management perspective.	
Increase in effective lanes provided by works	2 effective lanes	
Rationale	This site is very popular and is already frequently overcrowded. Expansion of the facility is required to accommodate existing and future demand for fresh water facilities.	
Environmental and planning constraints	Disturbed environment – impact unlikely. Category R non-remnant vegetation (reef regrowth watercourse). Lake Proserpine is on a purple waterway (major waterway) for waterway barrier works. May therefore trigger Operational Works for Waterway Barrier Works under P Act. Operational works for the taking or interfering with water from a watercourse may apply depending on the works involved. Environmental Relevant Activity 16 extracting and screening activities for dredging more than 1000 tonnes of material in a year may be triggered depending on works (P Reg Shd 10, Part 5, Div 2, Item 1). Zoning Open Space/special purpose under the Whitsunday Shire Planning Scheme 2009. The proposed use is defined as Local Utility or Special Purpose under the planning scheme. A local utility is exempt from assessment against the planning scheme in both zones. A special purpose is self-assessable in both zones and will require self-assessment against the relevant codes of the planning scheme. Road reserve and freehold tenure.	
Consultation feedback	None received	
Indicative cost (excl. GST) (to ±50%)	Water-based infrastructure (excluding floating walkway)	$830,000
	Land-based infrastructure	$2,510,000



STATION ROAD

Paper Size A3

0 10 20 40 60 80 100

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

LEGEND

- Populated Places
- State controlled road
- Cadastre
- Carpark
- Floating Walkway
- Boat Ramp

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

Job Number	41-30098
Revision	A
Date	15 Dec 2016

Boating facility
Lake Proserpine, Peter Faust Dam

C:\Users\ihamilton\Desktop\GIS\30098\MXDROADS\41_30098_117_WT12_RevA.mxd

Data source: GHD: Layout/2016; DNRM: Roads/2015, Populated Places, Local Government Area/2016, Cadastre/2016, Cadastre/2016; TMR: Facilities/2016, Imagery (2013-2016). Created by: AJ/MS/JCM

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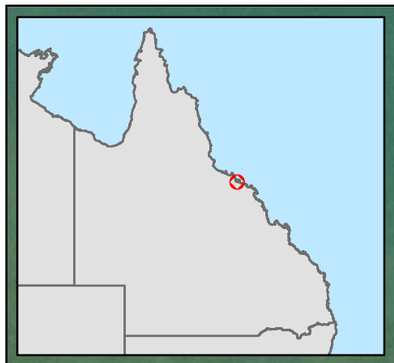
Table 20 – Priority 1 – Molongle Beach Road, Molongle Creek

Site name	Molongle Beach Road, Molongle Creek
Existing formal facility?	Yes
Location	At the northern end of Molongle Beach Road, at the mouth of Molongle Creek
Current tidal status	Part-tide, depth-limited open-water access
Site characteristics	This existing public facility is owned and managed by the Molongle Creek Boat Club, and consists of a 4-lane ramp with a pontoon. The facility is located on a council reserve at the mouth of Molongle Creek. This site provides the closest access point to Cape Upstart, where there are more than 200 private dwellings. There is no road access to these properties and therefore they are only accessible by boat. Navigable access to the ramp is tide-limited. An artificial basin and shallow navigation channel has been constructed to provide access into Upstart Bay, however limited maintenance combined with the shallow channel makes open-water access only possible on higher tides. All-tide open-water access from this site is not self-maintaining.
Proposed works	Undertake capital dredging of the access channel to improve tidal access, channel stability and reduce maintenance dredging frequency.
Increase in effective lanes provided by works	1.6 effective lanes
Rationale	Property owners at Cape Upstart have expressed concerns that the part-tide and depth-limited status of the facility impedes access to Cape Upstart in both regular and emergency situations. Alternative sites that may provide improved boating access to Cape Upstart have been considered. • Rocky Ponds Creek (4.3km west of Molongle Creek) provides improved tidal access over Molongle Creek but does not provide all-tide access. It may provide near all-tide access, depending on the site. Hydrographic survey indicates broad shoals including rocks in the inner parts of the entrance. • Nobbies Inlet (7.3km east of Molongle Creek) has all-tide access into the main channel, and near all-tide access into major tributaries. However, the very low-lying nature of the surrounding land would require major earthworks involving reclamation and a causeway to provide land-side access to the waterway, with potential major environmental impacts. Establishment of a new facility at this location would be expected to be extremely expensive and involve complex and lengthy approvals processes. As these sites have been previously considered, capital dredging at Molongle Creek provides the best option for timely provision of access to Cape Upstart.
Environmental and planning constraints	World Heritage and National Heritage place – Great Barrier Reef. As the works are likely to impact on MNES, a referral under the EPBC Act must be made to DEE. Category B vegetation, being least concern regional ecosystem 11.1.4 is mapped beside the channel. Exemptions apply for clearing native vegetation on land generally that is clearing for the construction or maintenance of community

Site name	Molongle Beach Road, Molongle Creek
	infrastructure mentioned in Shd 21, Part 1, Section 14 (b) of P Reg that is government supported transport infrastructure. Potential disturbance to marine plants. Indigenous Land Use Agreement Juru People and Kookaburra Terrace, NNTT QI2014/086. Environmental Relevant Activity 16 extracting and screening activities for dredging more than 1000 tonnes of material in a year may be triggered depending on works (P Reg Shd 10, Part 5, Div 2, Item 1). Operational works for the taking or interfering with water from a watercourse may apply depending on the works involved. Rural zoning under the Bowen Planning Scheme 2006. The proposed use is defined as Local Utility or Special Purpose under the planning scheme. Reserve tenure.
Consultation feedback	None received
Indicative cost (excl. GST) (to ±50%)	To be determined based on sediment transport studies and site specific dredging design



MOLONGLE BEACH ROAD

Paper Size A3

0 50 100 200 300 400 500

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

LEGEND

- Populated Places
- State controlled road
- Cadastre

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

Job Number	41-30098
Revision	A
Date	15 Dec 2016

Boating facility
Molongle Creek

C:\Users\ihamilton\Desktop\GIS\30098\MXDROADS\41_30098_170_BW61_RevA.mxd

Data source: GHD: Layout/2016; DNRM: Roads/2015, Populated Places, Local Government Area/2016, Cadastre/2016, Cadastre/2016; TMR: Facilities/2016, Imagery (2013-2016). Created by: AJ/MS/JCM

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7.5 Priority 2 sites

Table 21 – Priority 2 – Cape Gloucester

Site name	Cape Gloucester
Existing formal facility?	No
Location	On the western shoreline of Cape Gloucester, approximately 800m south of Cape Gloucester Beach Resort.
Current tidal status	Potentially all-tide, open-water access
Site characteristics	The site is 4km due east of Hideaway Bay, on Gloucester Avenue, which is currently unsealed. This site is currently undeveloped, and comprises a foreshore area that is part of the road reserve, and freehold land immediately landward of the road that would need to be acquired. Both are well vegetated, although an informal access track from the road to the beach is visible in aerial photography and a cleared area exists on the freehold land. The shoreline consists of small sandy beaches between outcropping rock, and outcrops of rock reef are visible in the nearshore area in aerial photography. A detailed bathymetric survey of this area has been requested and is under preparation at the time of reporting. The site is sheltered from the dominant north-east, east and south-easterly winds and waves, but is partially exposed to northerly winds and is therefore unsuited to floating infrastructure.
Proposed works	A 2-lane boat ramp supported by 45 CTU spaces. The ramp would be located on the road reserve, but there is insufficient room for parking, which would need to be located by excision of a small reserve from the adjacent freehold land. Removal of small sections of rock/reef may be required if the ramp is obstructed. A short causeway to put the ramp into deeper water and provide all-tide access may be necessary. Alternatively, and preferably, a piled ramp should be considered to avoid interference with coastal processes.
Increase in effective lanes provided by works	2 effective lanes
Rationale	The Dingo Beach/Hideaway Bay/Cape Gloucester communities have raised the issue of an all-tide, all-weather facility in the area for several years (following a recommendation in the 2011 GHD study). A high-level feasibility assessment was undertaken on eight potential sites in the area in 2016. The assessment indicated that no option presented an outstanding location for a boat ramp and that although a boat ramp would be feasible at several locations, there would be a number of considerations to address during the planning, design and construction of the boat ramp and associated infrastructure. This site was identified as the highest scoring option in terms of meeting all of the council's desired criteria. Detailed investigations of this site are required to further ascertain its economic and environmental suitability as a boat ramp site. The access road is currently unsealed. Construction of a boat ramp at this site would add pressure on the timing of the future inevitable sealing of the access road.

Site name	Cape Gloucester
Environmental and planning constraints	World Heritage and National Heritage place – Great Barrier Reef. As the works are likely to impact on MNES, a referral under the EPBC Act must be made to DEE. Nationally important wetland – Great Barrier Reef Marine Park. As the works are likely to impact on MNES, a referral under the EPBC Act must be made to DEE. Category B vegetation and essential habitat, being of concern regional ecosystems (RE) are mapped on the site - 8.12.12d/8.12.29b/11.12.16/8.12.14c. Exemptions apply for clearing native vegetation on land generally that is clearing for the construction or maintenance of community infrastructure mentioned in Shd 21, Part 1, Section 14 (b) of P Reg that is government supported transport infrastructure. High risk flora trigger area and greenfield site – Site survey required where clearing is to occur per EHP Flora Survey Guidelines- Protected Plants and report submitted to EHP prior to construction. If clearing is to be undertaken within the road reserve and if it is undertaken by TMR, an NC Act clearing permit will not be required. If clearing is to occur outside of the road reserve, an NC Act clearing permit will be required. TMR's 'Species Management Program for Tampering with Animal Breeding Places' and 'Protected plant exemption' agreement may apply depending on works. Operational Works for tidal works or works within a coastal management district is triggered under P Act for the works in the tidal area. Works are considered accepted development under the P Reg Shd 7 Part 3, Item 10 (b) for tidal works that is undertaken by TMR. Accepted development works are to comply with the requirements for the work prescribed under the Coastal Act, Section 167(5)(b). Marine plants may be present within the site. Removal of marine plants will require an Operational Works permit for the removal, destruction or damage of marine plants under P Act (Shd 10 Part 17 Item 28 of P Reg). May be accepted development if works can comply with the requirements under Shd 7 Item 8 of the P Reg. Environmental Relevant Activity 16 extracting and screening activities for dredging more than 1000 tonnes of material in a year may be triggered depending on works (P Reg Shd 10, Part 5, Div 2, Item 1). Fish habitat area (FHA) management area A is located within the site area. Operational work completely or partly in a declared fish habitat area is assessable development, unless the work is accepted development under shd 7, part 3, section 7 of the P Reg. Marine Park Permits may be required for any works that occur within the Great Barrier Reef Marine Park. Works are located in the road reserve. The adjacent zoning is rural. The proposed use is defined as Local Utility or Special Purpose under the planning scheme. A local utility is exempt from assessment against the planning scheme in the rural zone. A special purpose is self-assessable in the rural zone and will require self-assessment against the relevant codes of the planning scheme. The operational works are exempt from assessment against the local planning scheme as the works would be undertaken by or on behalf of a public sector entity (TMR) (Shd 6 Part 3, Section 8 of P Reg).

Site name	Cape Gloucester	
	Reserve and freehold tenure.	
Consultation feedback	None received	
Indicative cost (excl. GST) (to ±50%)	Water-based infrastructure (including breakwater and reclamation)	$1,550,000
	Land-based infrastructure	$1,820,000

Paper Size A3

0 5 10 20 30 40 50

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

LEGEND

- Populated Places
- State controlled road
- Cadastre
- Breakwater
- Carpark
- Boat Ramp
- Infill/Reclamation Area

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

Job Number	41-30098
Revision	A
Date	15 Dec 2016

Boating facility
Cape Gloucester

C:\Users\ihamilton\Desktop\GIS\30098\MXDROADS\41_30098_126_Gloucester_RevA.mxd

Data source: GHD: Layout/2016; DNRM: Roads/2015, Populated Places, Local Government Area/2016, Cadastre/2016, Cadastre/2016; TMR: Facilities/2016, Imagery (2013-2016). Created by: AJ/MS/JCM

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7.6 Priority 3 sites

Table 22 – Priority 3 – Shute Harbour Road, Shute Harbour

Site name	Shute Harbour Road, Shute Harbour
Existing formal facility?	Yes
Location	At the southern end of Shute Harbour Road, adjacent to the Shute Harbour ferry terminal
Current tidal status	All-tide, open-water access
Site characteristics	This site is currently heavily developed and occupied by a 2-lane boat ramp and the Shute Harbour ferry terminal. A second boat ramp used by canoes is located on the eastern side of the ferry terminal. An existing jetty east of the ferry terminal is to be demolished. Car parking on the site is expansive and covers two large areas, one immediately adjacent to the ferry terminal, and a second on the hill behind the facility.
Proposed works	New 4-lane boat ramp and floating walkway. Re-marking of existing car parking to provide for 90 CTU spaces.
Increase in effective lanes provided by works	4 effective lanes
Rationale	The existing boat ramp at the site is very popular and frequently overcrowded. There is very little off-road parking available for CTU, and further augmentation of that ramp is also constrained by the jetty adjacent to the ramp which also restricts launching and retrieval processes. Construction of marina facilities elsewhere in Airlie Beach has seen a reduction in usage of this facility as tenants relocate. An opportunity exists to establish a new, major ramp on the eastern side of the ferry terminal in the vicinity of the canoe ramp. The adjacent and upper car parks could be re-marked with CTU spaces to support the new ramp and the existing facility. Construction of an additional facility in this location would reduce pressure at other facilities in the Airlie Beach area.
Environmental and planning constraints	World Heritage and National Heritage place – Great Barrier Reef. As the works may impact on MNES, a referral under the EPBC Act may need to be made to DEE. Nationally important wetland – Great Barrier Reef Marine Park. As the works may impact on MNES, a referral under the EPBC Act may need to be made to DEE. Area mapped under EHP flora trigger mapping, however disturbed area and site vegetation therefore not considered to be 'in the wild' – flora survey not required. Environmental Relevant Activity 16 extracting and screening activities for dredging more than 1000 tonnes of material in a year may be triggered depending on works (P Reg Shd 10, Part 5, Div 2, Item 1). Operational Works for tidal works or works within a coastal management district is triggered under P Act for the works in the tidal area. Works are considered accepted development under the P Reg Shd 7 Part 3, Item 10 (b) for tidal works that is undertaken by TMR. Accepted development works are to comply with the requirements for the work prescribed under the Coastal Act, Section 167(5)(b). Marine plants may be present within the site. Removal of marine plants will require an Operational Works permit for the removal, destruction or damage of marine plants under P Act (Shd 10 Part 17 Item 28 of P Reg). May be accepted

Site name	Shute Harbour Road, Shute Harbour	
	development if works can comply with the requirements under Shd 7 Item 8 of the P Reg. The works are located within a road reserve. The adjacent zoning is 'special use' under the Whitsunday Shire Planning Scheme 2009. The proposed use is defined as Local Utility or Special Purpose under the planning scheme. A local utility is exempt from assessment against the planning scheme in the special use zones. A special purpose is self-assessable in the special use zone and will require self-assessment against the relevant codes of the planning scheme. The operational works are exempt from assessment against the local planning scheme as the works would be undertaken by or on behalf of a public sector entity (TMR) (Shd 6 Part 3, Section 8 of P Reg). Marine Park Permits may be required for any works that occur within the Great Barrier Reef Marine Park. Reserve tenure.	
Consultation feedback	None received	
Indicative cost (excl. GST) (to ±50%)	Water-based infrastructure	$2,050,000
	Land-based infrastructure	$440,000

Paper Size A3

0 5 10 20 30 40 50

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

LEGEND

- Populated Places
- State controlled road
- Cadastre
- Existing infrastructure to be demolished
- Carpark
- Floating Walkway
- Boat Ramp

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

Job Number	41-30098
Revision	A
Date	15 Dec 2016

Boating facility
Shute Harbour Road, Shute Harbour

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Data source: GHD: Layout/2016; DNRM: Roads/2015, Populated Places, Local Government Area/2016, Cadastre/2016, Cadastre/2016; TMR: Facilities/2016, Imagery (2013-2016). Created by: AJ/MS/JCM

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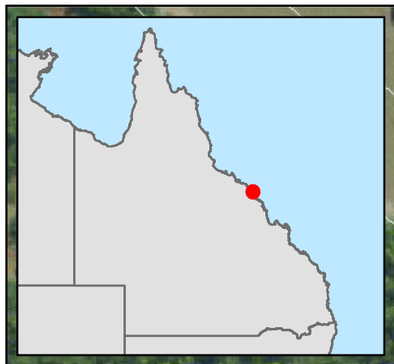
Table 23 – Priority 3 – Glen Isla Road, Proserpine River

Site name	Glen Isla Road, Proserpine River
Existing formal facility?	No
Location	On the west bank of the Proserpine River, approximately 6km east of Proserpine. Access is via Glen Isla Road.
Current tidal status	Near all-tide, depth-limited open-water access
Site characteristics	This currently undeveloped site is located on the Proserpine River. The site is accessed via the partially unsealed Glen Isla Road. The site is flat with a large cleared/open area immediately adjacent to the river bank. Vegetation increases with distance landward of the river. A detailed survey and assessment of the site and the adjacent river is not available. The site is sheltered from most wind and wave action.
Proposed works	Construction of a 2-lane boat ramp with a floating walkway. Formalisation of 45 CTU spaces.
Increase in effective lanes provided by works	2 effective lanes
Rationale	The Glen Isla Road site provides access to the sheltered estuarine reaches of the Proserpine River, close to the main population centre of Proserpine. Alternative access to the River is provided at Conway Road, which is much closer to the mouth and a much greater travel distance from Proserpine than Glen Isla. This site contributes to satisfaction of demand by smaller vessels not seeking access to open-water, although open-water access is possible. Access can be achieved via the existing road network, and no acquisition of land is required as the proposed manoeuvring and parking area can be contained within the existing road reserve.
Environmental and planning constraints	Greenfield site- potential for impact. Within a nationally important wetland – Proserpine – Goorganga Plain and wetland trigger area. As the works are likely to impact on MNES, a referral under the EPBC Act must be made to DEE. Category B vegetation, of concern RE 8.3.13c and essential habitat. Exemptions apply for clearing native vegetation on land generally that is clearing for the construction or maintenance of community infrastructure mentioned in Shd 21, Part 1, Section 14 (b) of P Reg that is government supported transport infrastructure. Operational Works for tidal works or works within a coastal management district is triggered under P Act for the works in the tidal area. Works are considered accepted development under the P Reg Shd 7 Part 3, Item 10 (b) for tidal works that is undertaken by TMR. Accepted development works are to comply with the requirements for the work prescribed under the Coastal Act, Section 167(5)(b). Marine plants may be present within the site. Removal of marine plants will require an Operational Works permit for the removal, destruction or damage of marine plants under P Act (Shd 10 Part 17 Item 28 of P Reg). May be accepted development if works can comply with the requirements under Shd 7 Item 8 of the P Reg. Environmental Relevant Activity 16 extracting and screening activities for dredging more than 1000 tonnes of material in a

Site name	Glen Isla Road, Proserpine River	
	year may be triggered depending on works (P Reg Shd 10, Part 5, Div 2, Item 1). Within a wetland protection area (WPA) trigger area. SDAP Module 11 will apply to all works triggering under the P Act which are high impact earthworks in a WPA. Marine Park Permits may be required for any works that occur within the Great Barrier Reef Marine Park. Works are located in the road reserve. Adjacent land is zoned rural. The proposed use is defined as Local Utility or Special Purpose under the planning scheme. A local utility is exempt from assessment against the planning scheme in the rural zone. A special purpose is self-assessable in the rural zone and will require self-assessment against the relevant codes of the planning scheme. The operational works are exempt from assessment against the local planning scheme as the works would be undertaken by or on behalf of a public sector entity (TMR) (Shd 6 Part 3, Section 8 of P Reg). Unallocated state land.	
Consultation feedback	None received	
Indicative cost (excl. GST) (to ±50%)	Water-based infrastructure	$930,000
	Land-based infrastructure	$730,000 (unsealed)



Paper Size A3

0 5 10 20 30 40 50

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

LEGEND

- Populated Places
- State controlled road
- Cadastre
- Carpark
- Floating Walkway
- Boat Ramp

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

Job Number	41-30098
Revision	A
Date	15 Dec 2016

Boating facility
Glen Isla Road, Proserpine River

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Data source: GHD: Layout/2016; DNRM: Roads/2015, Populated Places, Local Government Area/2016, Cadastre/2016, Cadastre/2016; TMR: Facilities/2016, Imagery (2013-2016). Created by: AJ/MS/JCM

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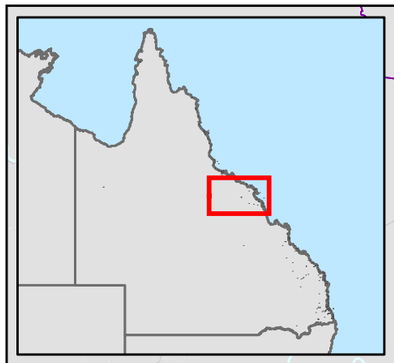
7.7 Priority 4 sites

Nil

Appendices

Appendix A – Locality plan, existing facilities



HOME HILL
MERINDA
BOWEN
CANNONVALE
AIRLIE BEACH
HAMILTON ISLAND
PROSERPINE
COLLINSVILLE
CALEN
SEAFORTH
SHOAL POINT
BUCASIA
EIMEO
FARLEIGH
FINCH HATTON
MIRANI
MARIAN
GLENELLA
MACKAY
WALKERSTON
BAKERS CREEK
ETON
HECTOR
HALF TIDE BEACH
GRASSTREE BEACH
CAMPWIN BEACH
SARINA
SARINA BEACH
GLENDEN
NEBO

Paper Size A3

0 15 30

Kilometres

Horizontal Datum: GDA 1994
Grid: GCS GDA 1994

N

LEGEND

- Boating Facilty
- State controlled road
- Local Government Area
- Water

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

Job Number	41-30098
Revision	C
Date	20 Dec 2016

Whitsunday Regional Council

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Data source: DNRM: Cadastre/2016, Populated Places, Local Government Area/2016; TMR: Facilities/2016, GA Mainland, Islands/2007. DTMR: State Controlled Road/2015. Created By: IH

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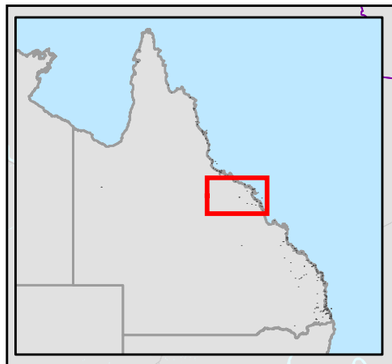

HOME HILL
MERINDA
BOWEN
CANNONVALE
AIRLIE BEACH
HAMILTON ISLAND
PROSERPINE
COLLINSVILLE
CALEN
SEAFORTH
SHOAL POINT
BUCASIA
EIMEO
FARLEIGH
FINCH HATTON
MIRANI
MARIAN
GLENELLA
MACKAY
WALKERSTON
BAKERS CREEK
ETON
HECTOR
HALF TIDE BEACH
GRASSTREE BEACH
CAMPWIN BEACH
SARINA
SARINA BEACH
GLENDEN
NEBO

Paper Size A3

0 20 40

Kilometres

Horizontal Datum: GDA 1994
Grid: GCS GDA 1994

N

LEGEND

- Deep-draught/tender landing
- State controlled road
- Local Government Area
- Water

Department of Transport and Main Roads
Queensland Recreational Boating Demand Study

Job Number 41-30098
Revision C
Date 21 Dec 2016

Whitsunday Regional Council

G:\41\30098\GIS\Maps\MXD\41_30098_166_LGA_Landings_RevC.mxd

Data source: DNRM: Cadastre/2016, Populated Places, Local Government Area/2016; TMR: Facilities/2016, GA Mainland, Islands/2007. DTMR: State Controlled Road/2015. Created By: IH

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Appendix B – Capacity assessment, existing facilities

Facility ID	Facility name*	Tidal access (at ramp)	# Existing lanes	Queuing facility	Effective lanes after tidal access adjustment	# CTU	Effective lanes after adjustment for tidal access, queuing facility and # CTUs		Constraint	Comment
							Waterside	CTU		
	Open-water access									
BW81	Starboard Drive, Bowen Boat Harbour	All-tide	4	Pontoon	4	97	4.8	4.5	CTU	
	+ MIIP upgrades as at Dec 16	*All-tide*	*4*	*Floating Walkway*	*4*	*97*	*6*	*4.5*	*CTU*	
PP21	Shute Harbour Road, Shute Harbour	All-tide	2	Jetty	2	42	2.4	2	CTU	
WT05	Abell Point Marina, Shingley Road	All-tide	2	Floating Walkway	2	30	3	1.5	CTU	
WT07	Shingley Bay, Whisper Beach	All-tide	2	Floating Walkway	2	46	3	2	CTU	
WT10	Shute Harbour Road, Port of Airlie	All-tide	2	Floating Walkway	2	74	3	3	Waterside	
	SUBTOTAL		***12***		***12***		***17.4***	***13****		
	Depth-limited open-water access									
BW61	Molongle Beach Road, Molongle Creek	Part-tide	4	Pontoon	2	Unformed	2.4	2.5	Waterside	
PP15	Conway Road, Proserpine River	Part-tide	2	Floating Walkway	1	75	1.5	3	Waterside	
	+ MIIP upgrades as at Dec 16	*Part-tide*	*4*	*Floating Walkway*	2	*75*	*3*	*3*	*Waterside*	
	SUBTOTAL		***8***		***4***		***5.4***	***5.5****		

Facility ID	Facility name*	Tidal access (at ramp)	# Existing lanes	Queuing facility	Effective lanes after tidal access adjustment	# CTU	Effective lanes after adjustment for tidal access, queuing facility and # CTUs		Constraint	Comment
							Waterside	CTU		
	Beach ramps									
BW11	Horseshoe Bay Road, Greys Bay, Bowen	Part-tide	2	Beach	1	27	1	1.5	Waterside	
	+ MIIP upgrades as at Dec 16	*Part-tide*	*2*	*Beach*	1	*27*	*1*	*1.5*	*Waterside*	
PP71	The Esplanade, Dingo Beach	Part-tide	1	Beach	0.5	Unformed	0.5	Unformed	Waterside	
	SUBTOTAL		***3***		***1.5***		***1.5***	***1.5****		
	No open-water access									
BW10	Bowen River, Collinsville	Fresh water	1	No	1	Unformed	1	Unformed	Waterside	
WT12	Lake Proserpine	Fresh water	1	No	1	Unmarked	1	Unmarked	Waterside	
	SUBTOTAL		***2***		***2***		***2***	***0****		
			Total effective capacity				***21.9****			

**Capacity following upgrades planned in the 2016-17 to 2017-18 MIIP are shown in italics.*

**CTU calculation does not include unformed or unmarked parking spaces.*

Appendix C – Demand assessment (Economic Associates)

Recreational Boating Facilities Demand Forecasting Study - 2016 Census Update

Final Report

December 2017

ECONOMIC ASSOCIATES

Recreational Boating Facilities Demand Forecasting Study - 2016 Census Update

Final Report

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1 INTRODUCTION

1.1 Purpose of study

Economic Associates (as a sub consultant to GHD Pty Ltd) were engaged by the Department of Transport and Main Roads (TMR) to undertake an assessment of the demand for recreational boating facilities at the local government area (LGA) level. Demand projections have been prepared at five year intervals to 2036 (that is, 2016, 2021, 2026, 2031 and 2036) and take into account current and future demand for recreational boat ramps and landings.

This study represents an update to the *Recreational Boating Facilities Demand Forecasting Study 2016*, taking into account 2016 Census data.

1.2 Report structure

The report has been structured as follows:

- Section 1: Introduction: Provides an outline of the purpose of the study and report structure
- Section 2: Projected size of recreational boating fleet: Provides an overview of the assumptions utilised in preparing estimates of the projected recreational boating fleet by LGA
- Section 3: Infrastructure demand assessment: Provides an overview of the assumptions utilised in preparing estimates of the demand for new or upgraded boat ramps and landings by LGA
- Section 4: References: Provides a summary of the references utilised in preparing this report.

1.3 Disclaimer

This report is based on the most up to date readily available information. Sources are documented in the report. Economic Associates has applied due professional care and diligence in accordance with generally accepted standards of professional practice in undertaking analysis and interpretation of source information. Economic Associates is not liable for damages arising from any errors or omissions arising from use of these information sources.

As this report involves future projections which can be affected by a number of unforeseen circumstances, it represent our best possible estimates and no warranty is given that these particular projections will eventuate.

2 PROJECTED SIZE OF RECREATIONAL BOATING FLEET

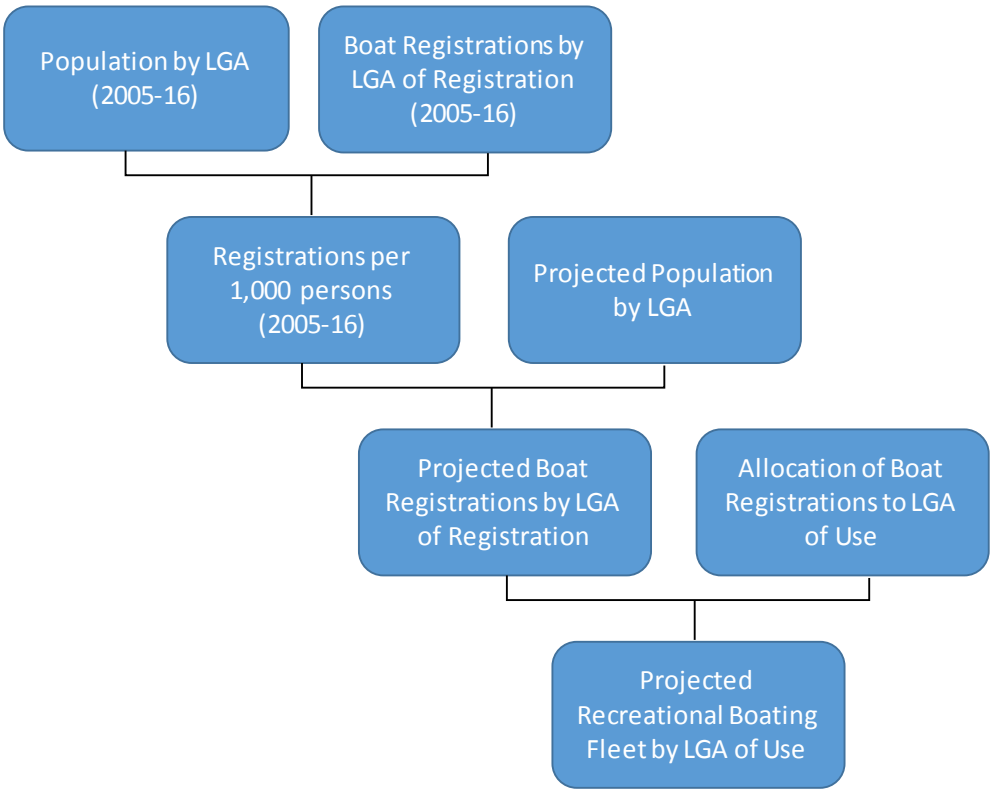
This section of the report provides a summary of the projected size of the recreational boating fleet by LGA, including a detailed explanation relating to the assumptions made in preparing the projections.

2.1 Methodology

In estimating the projected size of the recreational boating fleet, the assessment has made a number of assumptions relating to the current and projected size of the trailable and non-trailable fleet and the relationship between LGA of registration and LGA of waterway/facility use.

Figure 2.1 below outlines the methodology utilised in preparing the projected size of the recreational boating fleet by LGA of use.

Figure 2.1: Methodology utilised in projecting recreational boating fleet by LGA of use



2.2 Assumptions

2.2.1 Current size of recreational boating fleet

TMR provided data relating to historical boat registrations for the 2005 to 2016 period for the following categories:

- sail boats
- boats without sails, including:
  - motor boats without sails
  - speed boats
  - jet skis (or personal watercraft).

The data was provided by LGA of registration. This data was used to generate historical estimates of the size of the trailable and non-trailable boat fleet for each LGA, including the following sub-categories:

- trailable fleet, which comprises the following sub-categories:
  - boats up to 4.5 metres in length (including jet skis)
  - boats 4.5 – 8 metres in length
- non-trailable fleet (vessels most likely to be berthed at marinas or private moorings).

The trailable boat fleet has been estimated for two sub-classes to identify vessels that tend to be used inshore (vessels up to 4.5 metres in length) versus vessels which have the ability to travel offshore (vessels 4.5 – 8 metres in length). The 4.5 metre cut-off length was identified through consultation with LGA and port/water storage officers undertaken by GHD as part of this study, and confirmed by TMR officers as being reasonable and accepted for intended uses of the study.

Table 2.1 below summarises our assumptions in relation to the split of trailable boats and non-trailable boats based on the data provided by TMR. This assessment assumes that all boats greater than eight metres in length are non-trailable and that all jet skis are within the trailable boat fleet.

The incidence of trailable and non-trailable boats eight metres or less in length is consistent with the assumptions made in the *Recreational Boating Facilities Demand Forecasting Study 2011*.

Table 2.1: Estimated proportion of trailable and non-trailable boats, 2005-2016

Length	Trailable		Non-trailable	
	sail boats	Boats without sail	Sail boats	Boats without sail
<3 metres	100.0%	100.0%	0.0%	0.0%
3-5 metres	90.0%	100.0%	10.0%	0.0%
5-8 metres	50.0%	85.0%	50.0%	15.0%
8-10 metres	0.0%	0.0%	100.0%	100.0%
10-12 metres	0.0%	0.0%	100.0%	100.0%
12-15 metres	0.0%	0.0%	100.0%	100.0%
15-25 metres	0.0%	0.0%	100.0%	100.0%
>25 metres	0.0%	0.0%	100.0%	100.0%

Source: Economic Associates estimates

In 2016, there were 996 vessel registrations that were not assigned to an LGA in Queensland[1], comprising 983 interstate registrations, five overseas registrations and eight unknown registrations. For this assessment, the following assumptions have been made for the allocation of these registrations to the trailable and non-trailable boat fleets:

- *Interstate registrations:* Interstate registrations have been allocated in the manner outlined in Table 2.1 above, as it is considered likely that the majority of interstate registrations of a trailable length are within northern NSW.
- *Overseas and unknown registrations:* The assessment has assumed that all overseas and unknown registrations are of a non-trailable nature.

Based on the assumptions presented in Table 2.1 above and the allocation of interstate, overseas and unknown registrations, the estimated size of the recreational boating fleet in Queensland was 279,586 vessels in 2016, comprising:

- 184,835 trailable boats up to 4.5 metres in length (including jet skis)
- 73,462 trailable boats 4.5 – 8 metres in length
- 21,289 non-trailable boats.

Not surprisingly, the size of the recreational boating fleet was highest in a number of South-east Queensland councils, Mackay Regional Council, Townsville City Council, and Cairns Regional Council.

Table 2.2 below presents the estimated size of the recreational boating fleet in Queensland and each of the component LGAs in 2016.

Table 2.2: Estimated size of recreational boating fleet by LGA, Queensland, 2016

LGA of registration	Trailable		Non-trailable	Total
	Up to 4.5m	4.5-8m		
Aurukun (S)	9	9	0	18
Balonne (S)	229	93	14	336
Banana (S)	928	371	54	1,353
Barcaldine (R)	120	46	6	172
Barcoo (S)	22	7	2	31
Blackall-Tambo (R)	73	24	3	100
Boulia (S)	11	2	0	13
Brisbane (C)	18,600	7,539	3,009	29,148
Bulloo (S)	10	2	0	12
Bundaberg (R)	7,483	1,711	418	9,612
Burdekin (S)	2,560	887	123	3,570
Burke (S)	34	14	2	50
Cairns (R)	6,650	3,584	996	11,229
Carpentaria (S)	148	79	14	241
Cassowary Coast (R)	2,718	1,576	298	4,592
Central Highlands (R)	1,507	720	120	2,347
Charters Towers (R)	524	170	23	717
Cherbourg (S)	0	1	0	1
Cloncurry (S)	125	55	6	186
Cook (S)	304	177	67	548
Croydon (S)	11	4	0	15
Diamantina (S)	6	0	1	7

[1] The 996 vessel registrations not registered in an LGA in Queensland accounted for less than 0.4% of the total recreational fleet in 2016.

LGA of registration	Trailable		Non-trailable	Total
	Up to 4.5m	4.5-8m		
Doomadgee (S)	2	2	0	4
Douglas (S)	908	664	175	1,747
Etheridge (S)	38	12	1	51
Flinders (S)	83	30	7	120
Fraser Coast (R)	7,252	2,902	821	10,975
Gladstone (R)	5,148	2,435	538	8,121
Gold Coast (C)	24,407	8,121	3,739	36,266
Goondiwindi (R)	659	202	25	886
Gympie (R)	2,656	937	235	3,828
Hinchinbrook (S)	1,428	635	118	2,180
Hope Vale (S)	17	14	4	35
Ipswich (C)	4,537	1,630	282	6,449
Isaac (R)	1,381	611	111	2,103
Kowanyama (S)	8	1	0	9
Livingstone (S)	2,821	1,507	504	4,831
Lockhart River (S)	7	5	4	16
Lockyer Valley (R)	1,285	461	78	1,824
Logan (C)	8,691	3,593	789	13,074
Longreach (R)	191	59	7	257
Mackay (R)	9,909	3,515	814	14,238
McKinlay (S)	48	21	4	73
Mapoon (S)	8	5	0	13
Maranoa (R)	544	180	22	746
Mareeba (S)	838	353	79	1,270
Moreton Bay (R)	16,249	5,992	1,637	23,878
Mornington (S)	16	13	2	31
Mount Isa (C)	700	402	43	1,145
Murweh (S)	137	46	6	189
Napranum (S)	7	4	0	11
Noosa (S)	2,564	1,175	290	4,029
North Burnett (R)	633	182	26	841
Northern Peninsula Area (R)	25	46	9	80
Palm Island (S)	43	37	6	86
Paroo (S)	40	12	2	54
Pormpuraaw (S)	3	1	0	4
Quilpie (S)	32	8	1	41
Redland (C)	7,692	3,897	1,473	13,061
Richmond (S)	45	20	2	66
Rockhampton (R)	3,777	1,405	292	5,473
Scenic Rim (R)	1,300	490	122	1,912
Somerset (R)	1,037	356	68	1,461
South Burnett (R)	1,447	450	66	1,963
Southern Downs (R)	1,119	314	42	1,475
Sunshine Coast (R)	12,641	4,148	1,225	18,013
Tablelands (R)	1,695	704	150	2,548
Toowoomba (R)	4,522	1,593	250	6,365
Torres (S)	107	172	32	311
Torres Strait Island (R)	6	9	2	17
Townsville (C)	8,289	3,998	916	13,203
Weipa (T)	230	237	37	504
Western Downs (R)	1,525	643	86	2,254
Whitsunday (R)	3,387	1,904	750	6,041
Winton (S)	32	11	2	45
Woorabinda (S)	3	0	0	3
Wujal Wujal (S)	4	4	0	8
Yarrabah (S)	36	25	3	64
Interstate	560	201	223	983
Overseas	0	0	5	5
Unknown	0	0	8	8
Total	**184,835**	**73,462**	**21,289**	**279,586**

Note: All registrations with an overseas or unknown address were classified as non-trailable as they were likely to be stored in marinas or dry storage facilities. Source: Economic Associates estimates based on data provided by TMR.

2.2.2 Historical incidence of boat ownership

To determine the projected number of boat registrations in each LGA, the boat registration data, in conjunction with historical population data, has been analysed to calculate the historical incidence of boat ownership (that is, the number of boat registrations per 1,000 persons). The historical incidence of boat ownership was calculated for the trailable and non-trailable fleets, as defined in Section 2.1.1 above.

In the 2005 to 2016 period, the average incidence of boat ownership was as follows:

- trailable boats up to 4.5 metres in length (including jet skis): 0.00 – 140.93 boats/1,000 persons
- trailable boats 4.5 – 8 metres in length: 0.26 – 81.45 boats/1,000 persons
- non-trailable boats: 0.00 – 22.39 boats/1,000 persons.

The historical incidence of boat ownership is highest in coastal communities such as Hinchinbrook Shire, Burdekin Shire, Cook Shire, Douglas Shire, Cassowary Coast, Livingstone Shire, Town of Weipa, and Whitsunday. Of these coastal communities, only Cook Shire recorded a decline in the incidence of boat ownership between 2005 and 2016.

Table 2.3 below summarises the average historical incidence of boat ownership by vessel class in the 2005 to 2016 period, by LGA.

Table 2.3: Historical incidence of boat ownership (registrations / 1,000 persons) by LGA, 2005-2016

LGA of registration	Trailable		Non-trailable	Change in incidence of boat ownership, 2005-2016		
	Up to 4.5m	4.5-8m		Trailable up to 4.5m	Trailable 4.5-8m	Non-trailable
Aurukun (S)	10.04	4.02	0.38	Decrease	Decrease	Decrease
Balonne (S)	40.95	17.04	2.49	Increase	Increase	Increase
Banana (S)	57.80	21.42	3.19	Increase	Increase	Increase
Barcaldine (R)	35.58	11.60	1.44	Increase	Increase	Increase
Barcoo (S)	51.88	10.19	0.79	Increase	Increase	Increase
Blackall-Tambo (R)	33.64	10.24	1.24	Increase	Increase	Increase
Boulia (S)	24.48	7.22	1.21	Increase	Decrease	Decrease
Brisbane (C)	15.62	6.91	2.83	Decrease	Decrease	Decrease
Bulloo (S)	28.32	5.12	0.81	Increase	Increase	Increase
Bundaberg (R)	74.12	16.67	4.32	Increase	Increase	Increase
Burdekin (S)	140.93	42.78	5.86	Increase	Increase	Increase
Burke (S)	57.71	19.99	3.16	Increase	Increase	Increase
Cairns (R)	39.61	20.12	5.61	Increase	Increase	Increase
Carpentaria (S)	78.97	36.00	5.52	Decrease	Decrease	Increase
Cassowary Coast (R)	89.70	47.12	9.85	Increase	Increase	Increase
Central Highlands (R)	49.70	23.49	3.81	Increase	Increase	Increase
Charters Towers (R)	40.01	11.72	1.44	Increase	Increase	Increase
Cherbourg (S)	0.00	0.26	0.00	Decrease	Increase	Decrease
Cloncurry (S)	34.44	13.93	1.73	Increase	Increase	Increase
Cook (S)	95.67	50.50	17.49	Decrease	Decrease	Decrease
Croydon (S)	52.07	18.63	1.98	Increase	Increase	Increase
Diamantina (S)	4.63	3.52	3.97	Increase	Decrease	Increase
Doomadgee (S)	0.89	0.48	0.09	Increase	Increase	Increase
Douglas (S)	73.99	42.56	13.53	Increase	Increase	Increase
Etheridge (S)	37.89	10.53	1.15	Increase	Increase	Increase
Flinders (S)	46.87	13.61	2.29	Increase	Increase	Increase

LGA of registration	Trailable		Non-trailable	Change in incidence of boat ownership, 2005-2016		
Fraser Coast (R)	66.53	26.79	7.61	Increase	Increase	Increase
Gladstone (R)	79.06	35.29	8.60	Increase	Increase	Increase
Gold Coast (C)	37.91	15.37	6.89	Increase	Decrease	Increase
Goondiwindi (R)	56.75	16.61	1.96	Increase	Increase	Increase
Gympie (R)	53.76	19.88	5.72	Increase	Decrease	Decrease
Hinchinbrook (S)	127.50	47.34	8.75	Increase	Increase	Increase
Hope Vale (S)	9.23	12.70	2.24	Increase	Increase	Increase
Ipswich (C)	22.38	8.70	1.50	Increase	Decrease	Decrease
Isaac (R)	66.00	27.22	4.91	Decrease	Increase	Increase
Kowanyama (S)	12.03	1.04	0.19	Increase	Increase	Increase
Livingstone (S)	76.25	35.82	11.49	Increase	Increase	Increase
Lockhart River (S)	13.47	9.89	3.44	Increase	Increase	Increase
Lockyer Valley (R)	28.06	10.09	1.64	Increase	Increase	Increase
Logan (C)	24.97	11.89	3.11	Increase	Increase	Decrease
Longreach (R)	44.70	11.47	1.31	Increase	Increase	Increase
Mackay (R)	80.15	26.34	7.12	Increase	Increase	Increase
McKinlay (S)	44.64	21.46	2.75	Increase	Increase	Increase
Mapoon (S)	11.81	20.58	2.47	Increase	Increase	Increase
Maranoa (R)	33.16	10.21	1.05	Increase	Increase	Increase
Mareeba (S)	41.49	15.42	3.37	Decrease	Increase	Increase
Moreton Bay (R)	35.99	14.15	3.83	Increase	Increase	Increase
Mornington (S)	13.72	8.46	0.69	Increase	Increase	Increase
Mount Isa (C)	34.93	16.02	1.80	Increase	Increase	Increase
Murweh (S)	24.34	7.78	0.96	Increase	Increase	Increase
Napranum (S)	2.55	1.05	0.10	Increase	Increase	Increase
Noosa (S)	49.02	20.44	5.63	Increase	Increase	Decrease
North Burnett (R)	56.88	14.71	2.21	Increase	Increase	Increase
Northern Peninsula Area (R)	13.50	16.20	2.89	Increase	Increase	Increase
Palm Island (S)	16.22	10.97	1.26	Increase	Increase	Increase
Paroo (S)	18.54	4.45	0.68	Increase	Increase	Increase
Pormpuraaw (S)	8.67	1.63	0.46	Increase	Increase	Decrease
Quilpie (S)	31.95	4.81	1.14	Increase	Increase	Increase
Redland (C)	45.06	25.97	9.87	Increase	Increase	Increase
Richmond (S)	54.01	21.46	1.50	Increase	Increase	Increase
Rockhampton (R)	38.81	15.38	3.87	Increase	Increase	Increase
Scenic Rim (R)	29.04	11.75	3.48	Increase	Decrease	Decrease
Somerset (R)	36.11	11.96	2.16	Increase	Increase	Increase
South Burnett (R)	37.61	12.34	1.85	Increase	Increase	Increase
Southern Downs (R)	26.78	7.78	1.01	Increase	Increase	Increase
Sunshine Coast (R)	39.41	14.10	4.13	Increase	Increase	Increase
Tablelands (R)	59.99	22.48	4.76	Increase	Increase	Increase
Toowoomba (R)	24.81	8.34	1.32	Increase	Increase	Increase
Torres (S)	36.94	52.51	8.75	Decrease	Decrease	Decrease
Torres Strait Island (R)	1.24	2.16	0.38	Increase	Increase	Increase
Townsville (C)	45.60	19.29	4.71	Decrease	Increase	Increase
Weipa (T)	94.96	81.45	13.46	Increase	Increase	Increase
Western Downs (R)	39.52	16.37	2.15	Increase	Increase	Increase
Whitsunday (R)	95.32	47.25	22.39	Increase	Increase	Increase
Winton (S)	26.57	7.06	1.06	Increase	Increase	Increase
Woorabinda (S)	17.89	4.02	0.24	Increase	Decrease	Decrease
Wujal Wujal (S)	18.41	8.76	1.27	Increase	Increase	Increase
Yarrabah (S)	14.68	5.85	0.80	Increase	Increase	Increase

Note: Decrease – a decline in the incidence of boat ownership per 1,000 persons between 2005 and 2016, Increase – an increase in the incidence of boat ownership per 1,000 persons between 2005 and 2016.
Source: Economic Associates estimates based on data provided by TMR

2.2.3 Projected population by LGA

To project boat registrations by LGA, this analysis assumes that the incidence of new boat registrations post 2016 is consistent with the 2005-2016 average (as outlined in Table 2.3 above).

The assessment has relied on the latest projections prepared by the Queensland Government Statistician's office (Queensland Government 2015, Population Projections by LGA, medium series), rebased to take into consideration the 2016 population estimates published by the Australian Bureau of Statistics (released subsequent to the 2016 Census of Population and Housing).

Table 2.4 below outlines the projected population of each LGA in Queensland.

Table 2.4: Projected population by LGA, medium series, 2016-2036

	2016	2021	2026	2031	2036
Aurukun (S)	1,323	1,348	1,429	1,508	1,583
Balonne (S)	4,480	4,424	4,391	4,370	4,360
Banana (S)	14,607	14,871	15,147	15,394	15,610
Barcaldine (R)	2,909	2,917	2,930	2,944	2,961
Barcoo (S)	272	260	250	241	233
Blackall-Tambo (R)	1,924	1,936	1,957	1,978	2,004
Boulia (S)	437	431	426	419	413
Brisbane (C)	1,184,215	1,253,917	1,313,403	1,382,062	1,442,700
Bulloo (S)	360	346	332	319	306
Bundaberg (R)	94,453	99,443	105,027	110,562	116,082
Burdekin (S)	17,313	17,584	17,932	18,237	18,482
Burke (S)	342	366	390	414	436
Cairns (R)	162,451	176,549	192,763	209,532	226,125
Carpentaria (S)	2,051	2,066	2,088	2,112	2,136
Cassowary Coast (R)	29,396	29,217	29,215	29,362	29,623
Central Highlands (R)	28,783	30,502	32,128	33,686	35,239
Charters Towers (R)	12,074	12,228	12,368	12,536	12,697
Cherbourg (S)	1,296	1,327	1,370	1,423	1,475
Cloncurry (S)	3,114	3,129	3,164	3,212	3,250
Cook (S)	4,424	4,460	4,489	4,500	4,501
Croydon (S)	300	303	311	318	324
Diamantina (S)	297	290	283	276	270
Doomadgee (S)	1,474	1,554	1,639	1,724	1,811
Douglas (S)	11,997	12,618	13,350	14,121	14,903
Etheridge (S)	819	801	797	793	789
Flinders (S)	1,569	1,523	1,482	1,443	1,409
Fraser Coast (R)	102,953	109,451	117,758	126,200	133,958
Gladstone (R)	63,288	71,179	79,595	88,257	96,407
Gold Coast (C)	576,918	637,516	716,113	800,916	888,608
Goondiwindi (R)	10,837	10,911	11,014	11,125	11,241
Gympie (R)	50,292	52,742	55,650	58,570	61,556
Hinchinbrook (S)	10,990	10,588	10,172	9,728	9,274
Hope Vale (S)	967	1,042	1,118	1,191	1,263
Ipswich (C)	200,123	239,761	312,287	397,611	494,461
Isaac (R)	21,563	22,822	24,381	26,033	27,637
Kowanyama (S)	984	1,016	1,049	1,082	1,115
Livingstone (S)	37,055	40,446	44,904	49,930	55,691
Lockhart River (S)	747	833	926	1,021	1,115
Lockyer Valley (R)	39,486	43,477	47,824	52,301	56,757
Logan (C)	313,785	343,395	386,764	432,492	493,469
Longreach (R)	3,727	3,622	3,530	3,441	3,360
Mackay (R)	117,703	126,031	136,237	147,596	159,564
McKinlay (S)	810	830	849	865	879

	2016	2021	2026	2031	2036
Mapoon (S)	322	333	345	357	369
Maranoa (R)	12,928	13,611	14,438	15,292	16,147
Mareeba (S)	22,157	22,293	22,459	22,581	22,684
Moreton Bay (R)	438,313	484,280	536,815	584,862	627,462
Mornington (S)	1,196	1,277	1,358	1,435	1,511
Mount Isa (C)	19,332	20,060	20,821	21,553	22,266
Murweh (S)	4,391	4,306	4,235	4,167	4,109
Napranum (S)	1,001	1,025	1,049	1,068	1,086
Noosa (S)	54,033	55,976	58,591	60,599	62,406
North Burnett (R)	10,623	10,454	10,367	10,273	10,169
Northern Peninsula Area (R)	2,952	3,153	3,352	3,537	3,707
Palm Island (S)	2,602	2,724	2,854	2,981	3,105
Paroo (S)	1,686	1,605	1,534	1,468	1,408
Pormpuraaw (S)	785	828	874	919	964
Quilpie (S)	833	798	766	735	706
Redland (C)	151,987	162,352	173,030	180,987	185,065
Richmond (S)	800	761	730	703	680
Rockhampton (R)	81,589	85,694	90,105	94,555	99,104
Scenic Rim (R)	40,975	45,769	51,157	57,608	63,336
Somerset (R)	25,173	27,640	30,367	33,183	35,991
South Burnett (R)	32,747	34,237	36,000	37,783	39,542
Southern Downs (R)	35,622	36,827	38,046	39,262	40,452
Sunshine Coast (R)	303,389	338,162	379,049	423,122	467,945
Tablelands (R)	25,312	26,192	27,315	28,489	29,659
Toowoomba (R)	164,595	173,366	183,672	194,109	204,314
Torres (S)	3,789	3,900	4,028	4,161	4,301
Torres Strait Island (R)	4,785	4,836	4,898	4,958	5,022
Townsville (C)	192,058	211,600	233,015	255,311	278,025
Weipa (T)	4,024	4,373	4,646	5,008	5,347
Western Downs (R)	34,197	35,682	37,248	38,794	40,283
Whitsunday (R)	34,626	37,290	40,187	42,964	45,873
Winton (S)	1,156	1,118	1,085	1,055	1,028
Woorabinda (S)	992	1,014	1,045	1,077	1,114
Wujal Wujal (S)	296	303	310	316	321
Yarrabah (S)	2,703	2,835	3,006	3,184	3,363
Total	**4,848,877**	**5,246,746**	**5,728,030**	**6,240,301**	**6,764,941**

Source: Queensland Treasury (2016), ABS (2017b)

2.3 Projected size of recreational boating fleet

2.3.1 Projected size of fleet by LGA of registration

Based on the assumptions outlined above, the projected size of the recreational boating fleet registered in Queensland is projected to increase from 279,586 boats in 2016 to 381,988 boats in 2036, with the composition in 2036 anticipated to be as follows:

- 251,600 trailable boats up to 4.5 metres in length
- 100,795 trailable boats 4.5 – 8 metres in length
- 29,594 non-trailable boats.

Growth in the number of registrations is anticipated to be highest in a number of South-east Queensland councils, Cairns Regional Council, Townsville City Council and Mackay Regional Council.

Table 2.5 below summarises the projected size of the recreational boating fleet in Queensland by LGA of registration, between 2016 and 2036.

Table 2.5: Projected size of recreational boating fleet by LGA of registration, 2016-2036

	Trailable Fleet up to 4.5 metres					Trailable Fleet 4.5 - 8 metres					Non-Trailable Fleet				
	2016	2021	2026	2031	2036	2016	2021	2026	2031	2036	2016	2021	2026	2031	2036
Aurukun (S)	9	9	10	11	12	9	9	9	9	10	0	0	0	1	1
Balonne (S)	229	227	225	225	224	93	92	92	91	91	14	14	14	14	14
Banana (S)	928	943	959	973	986	371	377	382	388	392	54	55	56	57	57
Barcaldine (R)	120	120	121	121	122	46	46	46	46	47	6	6	6	6	6
Barcoo (S)	22	21	21	20	20	7	7	7	7	7	2	2	2	2	2
Blackall-Tambo (R)	73	73	74	75	76	24	24	24	25	25	3	3	3	3	3
Boulia (S)	11	11	11	11	10	2	2	2	2	2	0	0	0	0	0
Brisbane (C)	18,600	19,688	20,615	21,686	22,630	7,539	8,022	8,436	8,914	9,337	3,009	3,207	3,377	3,573	3,746
Bulloo (S)	10	10	9	9	8	2	2	2	1	1	0	0	0	0	0
Bundaberg (R)	7,483	7,853	8,267	8,677	9,086	1,711	1,794	1,887	1,980	2,072	418	440	464	488	511
Burdekin (S)	2,560	2,598	2,647	2,690	2,724	887	899	914	927	937	123	125	127	128	130
Burke (S)	34	35	37	38	39	14	14	15	15	16	2	2	3	3	3
Cairns (R)	6,650	7,208	7,850	8,514	9,172	3,584	3,867	4,194	4,531	4,865	996	1,075	1,166	1,260	1,353
Carpentaria (S)	148	149	151	153	155	79	80	81	81	82	14	14	14	14	14
Cassowary Coast (R)	2,718	2,702	2,702	2,715	2,739	1,576	1,567	1,567	1,574	1,586	298	296	296	298	300
Central Highlands (R)	1,507	1,592	1,673	1,751	1,828	720	761	799	836	872	120	126	132	138	144
Charters Towers (R)	524	530	536	542	549	170	172	174	176	177	23	23	23	24	24
Cherbourg (S)	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0
Cloncurry (S)	125	126	127	128	130	55	55	56	56	57	6	6	6	6	6
Cook (S)	304	307	310	311	311	177	179	180	181	181	67	68	68	69	69
Croydon (S)	11	11	12	12	12	4	4	4	4	4	0	0	0	0	0
Diamantina (S)	6	6	6	6	6	0	0	0	0	0	1	1	1	1	1
Doomadgee (S)	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0
Douglas (S)	908	954	1,008	1,065	1,123	664	691	722	755	788	175	183	193	204	214
Etheridge (S)	38	37	37	37	37	12	11	11	11	11	1	1	1	1	1
Flinders (S)	83	81	79	77	75	30	30	29	28	28	7	7	7	7	6
Fraser Coast (R)	7,252	7,685	8,237	8,799	9,315	2,902	3,076	3,299	3,525	3,733	821	870	933	997	1,056
Gladstone (R)	5,148	5,772	6,437	7,122	7,766	2,435	2,713	3,010	3,316	3,604	538	606	679	753	823
Gold Coast (C)	24,407	26,704	29,684	32,899	36,224	8,121	9,052	10,260	11,564	12,911	3,739	4,156	4,698	5,282	5,887
Goondiwindi (R)	659	663	669	675	682	202	203	204	206	208	25	26	26	26	26
Gympie (R)	2,656	2,787	2,944	3,101	3,261	937	986	1,044	1,102	1,161	235	249	266	282	299
Hinchinbrook (S)	1,428	1,376	1,323	1,267	1,209	635	616	596	575	553	118	114	111	107	103
Hope Vale (S)	17	18	18	19	20	14	15	16	17	18	4	4	4	4	4
Ipswich (C)	4,537	5,423	7,046	8,955	11,122	1,630	1,975	2,606	3,349	4,192	282	342	450	578	723
Isaac (R)	1,381	1,464	1,567	1,676	1,782	611	646	688	733	777	111	117	124	132	140
Kowanyama (S)	8	8	9	9	10	1	1	1	1	1	0	0	0	0	0
Livingstone (S)	2,821	3,079	3,419	3,803	4,242	1,507	1,628	1,788	1,968	2,174	504	543	594	652	718
Lockhart River (S)	7	8	9	11	12	5	6	7	8	9	4	4	4	5	5
Lockyer Valley (R)	1,285	1,397	1,519	1,644	1,770	461	501	545	590	635	78	85	92	99	106
Logan (C)	8,691	9,431	10,514	11,655	13,178	3,593	3,945	4,461	5,005	5,730	789	881	1,016	1,158	1,347
Longreach (R)	191	186	182	178	175	59	58	57	56	55	7	6	6	6	6
Mackay (R)	9,909	10,577	11,395	12,305	13,265	3,515	3,734	4,003	4,302	4,617	814	873	946	1,027	1,112
McKinlay (S)	48	49	50	50	51	21	21	22	22	22	4	4	4	4	4
Mapoon (S)	8	8	8	8	9	5	5	5	5	6	0	0	1	1	1
Maranoa (R)	544	567	594	622	651	180	187	196	204	213	22	23	23	24	25
Mareeba (S)	838	844	851	856	860	353	355	358	360	361	79	79	80	80	80

	Trailable Fleet up to 4.5 metres					Trailable Fleet 4.5 - 8 metres					Non-Trailable Fleet				
	2016	**2021**	**2026**	**2031**	**2036**	**2016**	**2021**	**2026**	**2031**	**2036**	**2016**	**2021**	**2026**	**2031**	**2036**
Moreton Bay (R)	16,249	17,903	19,793	21,523	23,056	5,992	6,642	7,386	8,065	8,668	1,637	1,813	2,014	2,198	2,361
Mornington (S)	16	17	18	19	20	13	13	14	15	15	2	2	2	2	2
Mount Isa (C)	700	725	752	778	802	402	413	425	437	449	43	45	46	47	49
Murweh (S)	137	135	133	131	130	46	46	45	45	44	6	6	6	5	5
Napranum (S)	7	7	7	7	7	4	4	4	4	4	0	0	0	0	0
Noosa (S)	2,564	2,659	2,787	2,886	2,974	1,175	1,214	1,268	1,309	1,346	290	301	316	327	338
North Burnett (R)	633	623	618	613	607	182	180	178	177	175	26	26	25	25	25
Northern Peninsula Area (R)	25	28	30	33	35	46	49	52	55	58	9	10	10	11	11
Palm Island (S)	43	45	47	49	51	37	38	40	41	42	6	6	6	7	7
Paroo (S)	40	38	37	36	35	12	11	11	11	10	2	2	2	2	2
Pormpuraaw (S)	3	3	4	4	5	1	1	1	1	1	0	0	0	0	0
Quilpie (S)	32	31	30	29	28	8	8	8	8	7	1	1	1	1	1
Redland (C)	7,692	8,159	8,640	8,998	9,182	3,897	4,166	4,444	4,650	4,756	1,473	1,575	1,680	1,759	1,799
Richmond (S)	45	43	41	40	39	20	19	18	17	17	2	1	1	1	1
Rockhampton (R)	3,777	3,936	4,107	4,280	4,456	1,405	1,468	1,536	1,604	1,674	292	307	325	342	359
Scenic Rim (R)	1,300	1,439	1,596	1,783	1,949	490	547	610	686	753	122	139	157	180	200
Somerset (R)	1,037	1,126	1,224	1,326	1,428	356	386	419	452	486	68	73	79	85	91
South Burnett (R)	1,447	1,503	1,569	1,636	1,702	450	469	490	512	534	66	69	72	75	78
Southern Downs (R)	1,119	1,151	1,184	1,216	1,248	314	323	333	342	351	42	44	45	46	47
Sunshine Coast (R)	12,641	14,011	15,623	17,360	19,126	4,148	4,638	5,214	5,836	6,468	1,225	1,368	1,537	1,720	1,905
Tablelands (R)	1,695	1,748	1,815	1,885	1,956	704	723	749	775	801	150	154	159	165	170
Toowoomba (R)	4,522	4,739	4,995	5,254	5,507	1,593	1,666	1,752	1,839	1,924	250	262	276	289	303
Torres (S)	107	111	116	121	126	172	177	184	191	198	32	33	34	36	37
Torres Strait Island (R)	6	6	6	6	6	9	9	9	10	10	2	2	2	2	2
Townsville (C)	8,289	9,180	10,156	11,173	12,209	3,998	4,375	4,788	5,218	5,656	916	1,008	1,109	1,214	1,321
Weipa (T)	230	263	289	323	356	237	265	287	317	344	37	42	46	50	55
Western Downs (R)	1,525	1,584	1,646	1,707	1,766	643	667	693	718	743	86	89	92	96	99
Whitsunday (R)	3,387	3,641	3,917	4,182	4,459	1,904	2,030	2,167	2,298	2,436	750	809	874	936	1,002
Winton (S)	32	31	30	29	29	11	11	11	10	10	2	2	2	2	2
Woorabinda (S)	3	3	4	5	5	0	0	0	0	0	0	0	0	0	0
Wujal Wujal (S)	4	4	4	4	4	4	4	4	4	4	0	0	0	0	0
Yarrabah (S)	36	38	40	43	46	25	26	27	28	29	3	3	3	3	4
Interstate	560	563	566	570	573	201	202	203	205	206	223	224	226	228	229
Overseas	0	0	0	0	0	0	0	0	0	0	5	5	5	5	5
Unknown	0	0	0	0	0	0	0	0	0	0	8	8	8	8	8
Total	**184,835**	**198,834**	**215,790**	**233,554**	**251,600**	**73,462**	**79,223**	**86,171**	**93,430**	**100,795**	**21,289**	**23,068**	**25,180**	**27,382**	**29,594**

Source: Economic Associates estimate, derived from Table 2.3 and Table 2.4

2.3.2 Allocation of recreational boating fleet to LGA of use

The projected recreational boating fleet estimates presented in Table 2.4 above outline the projected number of boat registrations in each LGA in Queensland, that is, the number of boat registrations by place of residence. However, boat owners may utilise their boat in multiple LGAs, including LGAs other than their place of residence.

In allocating boat registrations to LGA of use, the assessment undertook a review of the distribution of boating infrastructure throughout Queensland and was informed by consultation with LGA and port/water storage officers undertaken by GHD as part of this project.

Two matrices were compiled which outline the distribution of boat registrations to the relevant LGA/s of use, one for trailable boat registrations and the other for non-trailable boat registrations. These two matrices are presented in Appendix A.

In the case of trailable boat registrations, allocations were made only to those LGAs with identified public boating infrastructure. Based on information provided by GHD, the following LGAs in Table 2.6 did not appear to have any public boating infrastructure, and hence were not allocated any boat registrations for use in that LGA.

Table 2.6: LGAs with no boating infrastructure for trailable vessels

Barcoo (S)	Flinders (S)
Blackall-Tambo (R)	Longreach (R)
Boulia (S)	Mareeba (S)
Bulloo (S)	Paroo (S)
Cherbourg (S)	Quilpie (S)
Cloncurry (S)	Richmond (S)
Croydon (S)	Winton (S)
Etheridge (S)	Woorabinda (S)

Non-trailable boats, on the other hand, were assumed to be used only in the coastal LGAs listed in Table 2.7 below.

Table 2.7: Coastal LGAs capturing non-trailable boat registrations

Brisbane (C)	Gold Coast (C)	
Bundaberg (R)	Gympie (R)	Northern Peninsula Area (R)
Burdekin (S)	Hinchinbrook (S)	Palm Island (S)
Burke (S)	Hope Vale (S)	Redland (C)
Cairns (R)	Isaac (R)	Rockhampton (R)
Carpentaria (S)	Livingstone (S)	Sunshine Coast (R)
Cassowary Coast (R)	Lockhart River (S)	Torres (S)
Cook (S)	Mackay (R)	Torres Strait Island (R)
Douglas (S)	Moreton Bay (R)	Townsville (C)
Fraser Coast (R)	Mornington (S)	Whitsunday (R)
Gladstone (R)	Noosa (S)	Yarrabah (S)

2.3.3 Projected size of fleet by LGA of use

Based on 2016 data, the size of the recreational boating fleet in Queensland is projected to increase from 272,472 boats in 2016 to 371,328 boats in 2036. The size of the recreational boating fleet in Queensland is approximately 3% lower than total boats registered in Queensland

as a result of vessel registration leakage, predominantly from the Gold Coast to northern New South Wales.

A number of LGAs are anticipated to record significant registration inflows, including:

- Redland City Council (net inflow of 8,740 vessels in 2016, increasing to 14,247 vessels in 2036)
- Gold Coast City Council (net inflow of 4,594 vessels in 2016, increasing to 7,844 vessels in 2036)
- Somerset Regional Council (net inflow of 3,075 vessels in 2016, increasing to 3,697 vessels in 2036)
- Sunshine Coast Regional Council (net inflow of 1,966 vessels in 2016, increasing to 2,314 vessels in 2036)
- Hinchinbrook Shire Council (net inflow of 1,894 vessels in 2016, increasing to 2,858 vessels in 2036)
- Scenic Rim Regional Council (net inflow of 1,559 vessels in 2016, increasing to 1,608 vessels in 2036)
- Cassowary Coast Regional Council (net inflow of 1,131 vessels in 2016, increasing to 1,350 vessels in 2036).

Table 2.8 below summarises the projected size of the recreational boating fleet by LGA of use, between 2016 and 2036.

Table 2.8: Projected Size of Recreational Boating Fleet by LGA of Use, 2016-2036

	Trailable fleet up to 4.5 metres					Trailable fleet 4.5 - 8 metres					Non-trailable fleet				
	2016	2021	2026	2031	2036	2016	2021	2026	2031	2036	2016	2021	2026	2031	2036
Aurukun (S)	9	9	10	11	12	9	9	9	9	10	0	0	0	1	1
Balonne (S)	46	45	45	45	45	19	18	18	18	18	0	0	0	0	0
Banana (S)	450	460	471	481	491	184	189	193	197	201	0	0	0	0	0
Barcaldine (R)	281	275	269	264	260	91	90	88	87	86	0	0	0	0	0
Barcoo (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackall-Tambo (R)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Boulia (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brisbane (C)	15,698	16,831	18,050	19,401	20,712	6,292	6,779	7,298	7,871	8,426	2,761	2,959	3,156	3,374	3,578
Bulloo (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bundaberg (R)	7,454	7,837	8,267	8,695	9,118	1,810	1,906	2,013	2,119	2,224	456	480	508	535	562
Burdekin (S)	2,853	2,937	3,035	3,130	3,219	1,060	1,091	1,128	1,164	1,199	184	191	199	208	216
Burke (S)	34	35	37	38	39	14	14	15	15	16	2	2	3	3	3
Cairns (R)	7,171	7,713	8,339	8,986	9,627	3,785	4,058	4,373	4,700	5,023	1,058	1,134	1,223	1,314	1,405
Carpentaria (S)	469	478	489	501	512	248	252	257	262	267	65	66	68	69	70
Cassowary Coast (R)	3,447	3,460	3,496	3,546	3,605	1,878	1,883	1,899	1,922	1,950	398	401	406	413	421
Central Highlands (R)	927	973	1,018	1,060	1,103	431	453	474	494	513	0	0	0	0	0
Charters Towers (R)	347	347	348	349	350	118	118	118	118	118	0	0	0	0	0
Cherbourg (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cloncurry (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cook (S)	509	514	519	521	523	264	267	269	270	271	11	11	11	11	11
Croydon (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diamantina (S)	6	6	6	6	6	0	0	0	0	0	0	0	0	0	0
Doomadgee (S)	2	2	2	2	2	2	2	2	2	2	0	0	0	0	0
Douglas (S)	1,388	1,450	1,523	1,599	1,675	873	907	947	989	1,031	338	354	370	388	406
Etheridge (S)	0	0	0	0	0	12	11	11	11	11	0	0	0	0	0
Flinders (S)	0	0	0	0	0	30	30	29	28	28	0	0	0	0	0
Fraser Coast (R)	7,467	7,902	8,454	9,015	9,533	2,912	3,083	3,302	3,524	3,729	847	897	961	1,025	1,084
Gladstone (R)	5,514	6,108	6,743	7,396	8,011	2,499	2,760	3,039	3,326	3,597	558	622	690	760	826
Gold Coast (C)	26,541	29,038	32,440	36,153	40,195	9,501	10,545	11,964	13,509	15,198	4,818	5,322	5,985	6,705	7,473
Goondiwindi (R)	690	693	698	704	710	219	220	222	223	225	0	0	0	0	0
Gympie (R)	2,916	3,083	3,284	3,489	3,694	1,041	1,103	1,178	1,254	1,330	297	316	339	362	386
Hinchinbrook (S)	2,609	2,702	2,806	2,914	3,023	1,205	1,246	1,292	1,340	1,389	260	271	284	297	310
Hope Vale (S)	17	18	18	19	20	14	15	16	17	18	4	4	4	4	4
Ipswich (C)	1,179	1,410	1,832	2,328	2,892	424	514	678	871	1,090	0	0	0	0	0
Isaac (R)	1,715	1,822	1,953	2,093	2,232	730	772	824	879	934	153	162	173	185	197
Kowanyama (S)	8	8	9	9	10	1	1	1	1	1	0	0	0	0	0
Livingstone (S)	3,230	3,492	3,822	4,188	4,602	1,639	1,760	1,914	2,085	2,277	539	578	627	682	743
Lockhart River (S)	7	8	9	11	12	5	6	7	8	9	4	4	4	5	5
Lockyer Valley (R)	450	489	532	576	619	161	175	191	207	222	0	0	0	0	0
Logan (C)	2,173	2,358	2,628	2,914	3,295	898	986	1,115	1,251	1,432	0	0	0	0	0
Longreach (R)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mackay (R)	9,185	9,803	10,558	11,396	12,279	3,299	3,505	3,756	4,034	4,327	787	843	913	989	1,069
McKinlay (S)	48	49	50	50	51	21	21	22	22	22	0	0	0	0	0

	Trailable fleet up to 4.5 metres					Trailable fleet 4.5 - 8 metres					Non-trailable fleet				
	2016	**2021**	**2026**	**2031**	**2036**	**2016**	**2021**	**2026**	**2031**	**2036**	**2016**	**2021**	**2026**	**2031**	**2036**
Mapoon (S)	8	8	8	8	9	5	5	5	5	6	0	0	1	1	1
Maranoa (R)	326	340	356	373	390	108	112	117	123	128	0	0	0	0	0
Mareeba (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moreton Bay (R)	15,743	17,253	18,933	20,506	21,904	5,804	6,395	7,053	7,669	8,216	1,649	1,814	1,997	2,169	2,322
Mornington (S)	16	17	18	19	20	13	13	14	15	15	2	2	2	2	2
Mount Isa (C)	526	544	562	581	598	294	302	311	319	327	0	0	0	0	0
Murweh (S)	263	258	254	250	247	82	81	80	79	78	0	0	0	0	0
Napranum (S)	7	7	7	7	7	4	4	4	4	4	0	0	0	0	0
Noosa (S)	2,923	3,071	3,259	3,426	3,586	1,251	1,309	1,382	1,447	1,509	339	356	378	397	416
North Burnett (R)	534	527	523	519	514	156	154	153	152	151	11	11	11	11	11
Northern Peninsula Area (R)	25	28	30	33	35	46	49	52	55	58	9	10	10	11	11
Palm Island (S)	43	45	47	49	51	37	38	40	41	42	6	6	6	7	7
Paroo (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pormpuraaw (S)	3	3	4	4	5	1	1	1	1	1	0	0	0	0	0
Quilpie (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Redland (C)	13,870	14,948	16,310	17,667	18,993	6,030	6,549	7,187	7,805	8,389	1,901	2,062	2,256	2,437	2,602
Richmond (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockhampton (R)	4,228	4,439	4,674	4,917	5,169	1,669	1,757	1,855	1,957	2,063	418	442	469	496	525
Scenic Rim (R)	2,570	2,736	2,924	3,134	3,328	901	962	1,032	1,110	1,183	0	0	0	0	0
Somerset (R)	3,327	3,529	3,747	3,972	4,191	1,209	1,280	1,356	1,435	1,511	0	0	0	0	0
South Burnett (R)	1,302	1,353	1,412	1,473	1,532	406	423	442	462	482	0	0	0	0	0
Southern Downs (R)	1,319	1,373	1,433	1,494	1,554	556	577	601	625	648	0	0	0	0	0
Sunshine Coast (R)	13,897	15,342	17,026	18,808	20,593	4,685	5,209	5,820	6,465	7,110	1,397	1,551	1,730	1,920	2,110
Tablelands (R)	678	699	726	754	782	281	289	299	310	321	0	0	0	0	0
Toowoomba (R)	904	948	999	1,051	1,101	319	333	350	368	385	0	0	0	0	0
Torres (S)	107	111	116	121	126	172	177	184	191	198	32	33	34	36	37
Torres Strait Island (R)	6	6	6	6	6	9	9	9	10	10	2	2	2	2	2
Townsville (C)	7,073	7,785	8,566	9,379	10,207	3,359	3,660	3,990	4,333	4,683	779	853	933	1,017	1,103
Weipa (T)	230	263	289	323	356	237	265	287	317	344	0	0	0	0	0
Western Downs (R)	1,095	1,132	1,173	1,215	1,255	440	455	471	486	502	0	0	0	0	0
Whitsunday (R)	3,900	4,180	4,490	4,795	5,115	2,039	2,170	2,315	2,457	2,605	754	814	879	942	1,008
Winton (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Woorabinda (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wujal Wujal (S)	4	4	4	4	4	4	4	4	4	4	0	0	0	0	0
Yarrabah (S)	36	38	40	43	46	25	26	27	28	29	3	3	3	3	4
Total	**179,803**	**193,341**	**209,700**	**226,820**	**244,200**	**71,825**	**77,399**	**84,104**	**91,102**	**98,196**	**20,844**	**22,580**	**24,638**	**26,781**	**28,932**

Source: Economic Associates estimates, derived from Table 2.5, Table A.1 and Table A.2

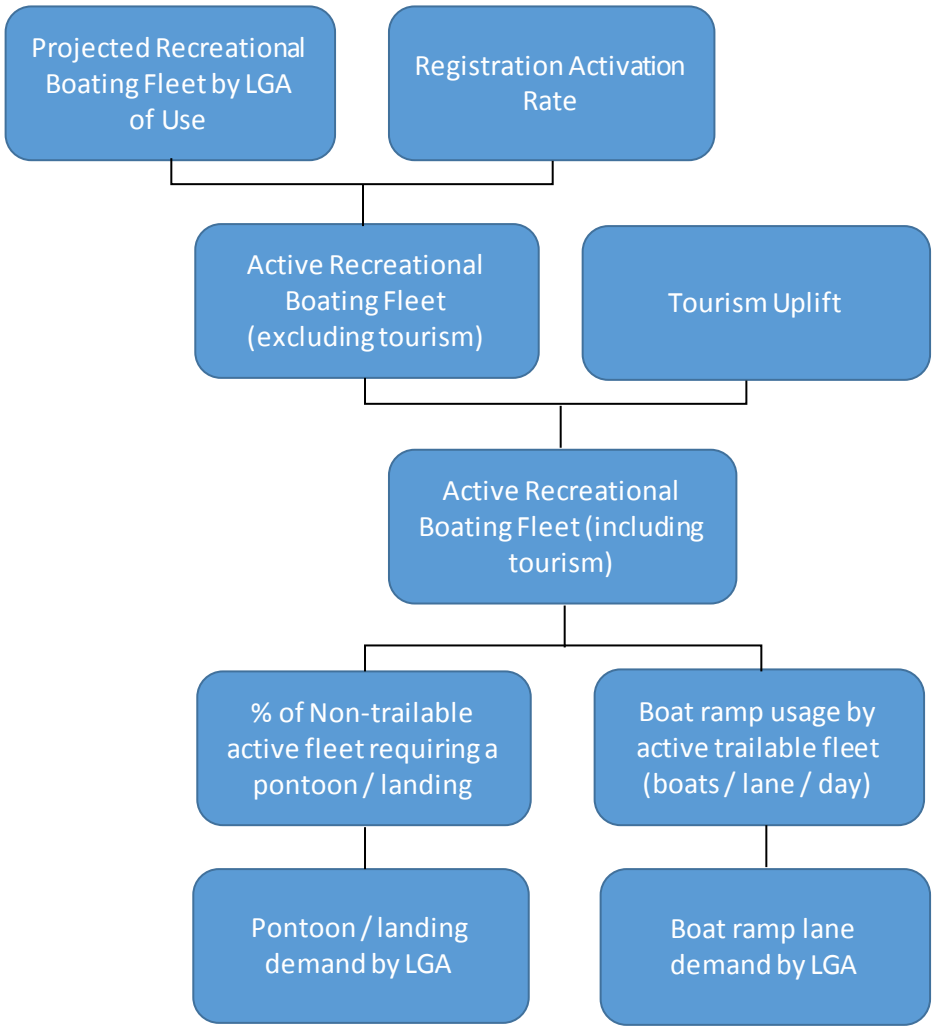
3 INFRASTRUCTURE DEMAND ASSESSMENT

This section converts recreational boating fleet projections into infrastructure demand projections for boat ramp lanes and landings (i.e. publically accessible deep-draught vessel pontoons) at the LGA level.

In determining infrastructure demand, the assessment estimates the likely number of boats being utilised on a day of average demand. This estimate is described as the active fleet. From here, assumptions are made relating to the relationship between trailable boats and boat ramp lane demand, and the relationship between non-trailable boats and likely landings demand.

Figure 3.1 below outlines the methodology utilised to calculate boat ramp lane and landings demand.

Figure 3.1: Methodology to calculate boat ramp lane and landings demand at the LGA level



3.1 Size of active fleet assumptions

3.1.1 Registration activation rate

TMR recognises three levels of demand for marine facilities, namely:

- off-peak demand – typical weekday usage
- average demand – taken to be demand for a facility on weekends (and, for certain regional locations, other busy periods)
- peak demand – demand for a facility at peak holiday periods or for special events.

The *Recreational Boating Facilities Demand Forecasting Study 2011* identified the proportion of the recreational boating fleet likely to use boating facilities for each level of demand (referred to herein as the registration activation rate):

- off-peak demand: 8%
- average demand: 14%
- peak demand: 20%.

TMR policy on catering for marine facility demand is as follows:

> *TMR expects off-peak demand at a given facility to be met in almost all circumstances. Its program of works is aimed at satisfying average demand.*
>
> *TMR does not cater for peak demand. This is because funds (provided largely by collection of recreational boat registration fees) are stretched meeting demand for basic marine infrastructure such as dredging, landings, breakwaters and boat ramps around the state, and local managing authorities cannot allocate sufficient resources (land and funds) for peak demand days. Scarce foreshore land is in intense demand for other purposes, as is funding.*

An initial assessment of demand identified that applying the average demand activation rate state-wide substantially overestimated the current and projected demand for facilities in some LGAs, based on complaints and observed levels of congestion at various facilities in those LGAs.

Therefore, unlike the *Recreational Boating Facilities Demand Forecasting Study 2011*, this study has considered differing registration activation rates by LGA.

This approach has been taken to recognise that the level of boat usage is likely to differ by LGA, depending on a range of factors, including access to recreational boating facilities, the range of recreational activities other than boating available to the community, the recreational time available to boat users (for example, retirees are likely to have more available time to undertake boating activities than persons employed on a fulltime basis), and nature of employment (for example, persons who finish work in the early afternoon are likely to have more available time to undertake boating activities than persons who finish work in the evening).

The consultation with LGA and port/water storage managers undertaken by GHD as part of this study indicated that recreational boaters typically use their boat to go fishing. A literature review was undertaken to identify the socio-economic and demographic characteristics of persons who participated in recreational fishing.

Ormsby, Jayne (2004) undertook a survey to identify the social, motivational and experiential aspects of recreational fishing by anglers from Queensland. The survey identified that just under

a quarter of respondents were classified as tradespersons and related workers, significantly higher than any other occupational class.

The Australian Bureau of Statistics (ABS) (2010) considers the participation rate of Australians in a number of sports, including fishing. This research identified that the participation rate for fishing was highest for the 55-64 year age cohort, followed by the 45-54 year age cohort. Interestingly, this result directly contradicts the findings of Department of Agriculture and Fisheries (2014), which identifies recreational fishing participation rates as being highest for the 5-14 year age cohort, and lowest for the 60+ year age cohort.

Participation rates in both studies represent the proportion of persons that participate in fishing in a given year, but do not provide insight as to the frequency of participation in that year. This means that while a certain age cohort may have a high participation rate, these persons may only go fishing once a year, while other age cohorts might have lower participation rates but higher frequency of participation. The literature review did not identify any information in relation to the frequency of participation in fishing or recreational boating by age cohort.

Our assessment has assumed that a higher average age is likely to correspond with a higher frequency of recreational boat usage, due to the greater availability of time for recreational pursuits, such as fishing and boating.

Within each LGA, the following factors were considered in refining the appropriate registration activation rate.

- incidence of blue collar employment (based on 2016 Census)
- average age of residents (based on 2016 Census)
- remoteness classification by local government area (Accessibility/Remoteness Index of Australia (ARIA+))
- whether the LGA was coastal.

ARIA+ is an index of remoteness derived from measures of road distances between populated localities to each of five categories of service centre, namely:

- distance between populated locality and population centre of 250,000+ persons
- distance between populated locality and population centre of 48,000-249,999 persons
- distance between populated locality and population centre of 18,000-47,999 persons
- distance between populated locality and population centre of 5,000-17,999 persons
- distance between populated locality and population centre of 1,000-4,999 persons.

The five distance measurements, one to each level of service centre, is recorded for each populated locality and standardised to a ratio. The ratio is calculated by dividing the measured distance for a given locality by the Australian average (mean) for that category. After applying a threshold of three to each of the ratios, all ratios are summed to produce the ARIA+ score for each populated locality across Australia. An interpolation procedure is then used to derive the index values for larger geographic areas such as LGAs.

ARIA+ is the endorsed measure of remoteness utilised by the ABS.

The fit between the ARIA+ remoteness classifications and our classification is summarised in Table 3.1 below.

Table 3.1: Fit between ARIA+ remoteness classification and EA classification

ARIA+ remoteness classification	EA classification
Highly accessible / accessible	Metropolitan
Moderately accessible	Regional centre
Remote	Remote
Very remote	Very Remote

To determine the appropriate registration activation rate, the following steps were taken:

- All LGAs with an ARIA+ classification of highly accessible or accessible (we have called metropolitan) were assigned a registration activation rate of 8%.
- All LGAs with an ARIA+ classification of moderately accessible (we have called regional centre) were assigned a registration activation rate as follows:
  - If the LGA has a higher incidence of blue collar workers and a higher average age than Queensland – registration activation rate is 12%.
  - For all other LGAs – registration activation rate is 10%.
- All LGAs with an ARIA+ classification of remote were assigned a registration activation rate as follows:
  - If the LGA has a higher incidence of blue collar workers and a higher average age than Queensland – registration activation rate is 14%.
  - All other LGAs – registration activation rate is 12%.
- All LGAs with an ARIA+ classification of very remote were assigned a registration activation rate of 14%.

After completing this first assessment, the registration activation rates were then adjusted to reflect whether the LGA was coastal or not. If the LGA was coastal, the registration activation rate remained unchanged. However, if the LGA was non-coastal, the registration activation rate was adjusted downwards by 2% (for example, if the registration activation rate was 12% and the LGA was non-coastal, the adjusted activation rate was 10%). This adjustment was made to reflect the extra travel distance required to access recreational boating facilities relative to persons who resided in coastal LGAs. It is considered that the further a person has to travel to access recreational boating facilities, the less often these facilities will typically be utilised. If the registration activation rate was already 8%, the rate remained unchanged.

A further reduction in activation was applied to a number of coastal LGAs in South-east Queensland with a broad offering of recreational activities, including boating, where it was determined that the appropriate registration activation rate was in the order of 6%-7%.

Based on the above criteria, Table 3.2 below summarises the activation rates applied to each LGA in Queensland.

Table 3.2: Assumed activation rate by LGA, Queensland

	% Blue collar workers	Average age	Remoteness	Coastal?	Activation rate
Aurukun (S)	33.6%	29.2	Very Remote	y	14%
Balonne (S)	35.1%	38.9	Remote	n	12%
Banana (S)	45.5%	37.5	Remote	n	10%
Barcaldine (R)	35.1%	39.6	Very Remote	n	12%
Barcoo (S)	50.0%	41.4	Very Remote	n	12%
Blackall-Tambo (R)	34.7%	42.9	Very Remote	n	12%
Boulia (S)	54.1%	34.1	Very Remote	n	12%
Brisbane City	22.0%	36.8	Metropolitan	y	6%
Bulloo (S)	42.5%	33.8	Very Remote	n	12%
Bundaberg (R)	37.7%	42.9	Regional Centre	y	12%
Burdekin (S)	42.9%	42.5	Regional Centre	y	12%
Burke (S)	38.8%	39.3	Very Remote	y	14%
Cairns (R)	30.5%	37.3	Regional Centre	y	10%
Carpentaria (S)	41.2%	37.1	Very Remote	y	14%
Cassowary Coast (R)	44.1%	41.7	Remote	y	14%
Central Highlands (R)	47.9%	33.4	Remote	n	10%
Charters Towers (R)	40.3%	39.3	Remote	n	12%
Cherbourg (S)	30.0%	25.2	Very Remote	n	12%
Cloncurry (S)	48.8%	35.6	Very Remote	n	12%
Cook (S)	38.3%	39.1	Remote	y	14%
Croydon (S)	40.7%	35.6	Very Remote	n	12%
Diamantina (S)	45.3%	32.9	Very Remote	n	12%
Doomadgee (S)	27.2%	23.7	Very Remote	y	14%
Douglas (S)	35.7%	41.4	Regional Centre	y	12%
Etheridge (S)	43.0%	39.5	Very Remote	n	12%
Flinders (S)	37.2%	40.5	Very Remote	n	12%
Fraser Coast (R)	34.4%	44.7	Regional Centre	y	12%
Gladstone (R)	46.8%	35.6	Regional Centre	y	10%
Gold Coast (C)	29.8%	39.1	Metropolitan	y	6%
Goondiwindi (R)	37.8%	39.2	Regional Centre	n	10%
Gympie (R)	40.1%	42.9	Metropolitan	y	8%
Hinchinbrook (S)	40.9%	46.1	Remote	y	14%
Hope Vale (S)	42.2%	28.3	Very Remote	y	14%
Ipswich (C)	37.7%	34.2	Metropolitan	n	8%
Isaac (R)	55.6%	32.0	Remote	y	12%
Kowanyama (S)	34.8%	29.8	Very Remote	y	14%
Livingstone (S)	38.2%	40.6	Very Remote	y	14%
Lockhart River (S)	35.3%	25.6	Very Remote	y	14%
Lockyer Valley (R)	43.4%	38.7	Metropolitan	n	8%
Logan (C)	40.3%	35.4	Metropolitan	n	8%
Longreach (R)	32.0%	39.6	Very Remote	n	12%
Mackay (R)	43.4%	37.5	Regional Centre	y	10%
McKinlay (S)	40.2%	36.6	Very Remote	n	12%
Mapoon (S)	26.8%	32.6	Very Remote	y	14%
Maranoa (R)	35.4%	37.4	Remote	n	10%
Mareeba (S)	36.6%	41.4	Remote	n	12%
Moreton Bay (R)	33.4%	38.0	Metropolitan	y	7%
Mornington (S)	30.8%	29.1	Very Remote	y	14%
Mount Isa (C)	47.2%	32.4	Very Remote	n	12%
Murweh (S)	37.6%	38.8	Very Remote	n	12%
Napranum (S)	52.3%	28.7	Very Remote	y	14%
Noosa (S)	30.8%	44.9	Metropolitan	y	8%
North Burnett (R)	40.3%	43.7	Regional Centre	n	10%
Northern Peninsula Area (R)	32.3%	26.0	Very Remote	y	14%
Palm Island (S)	28.0%	27.4	Very Remote	y	14%
Paroo (S)	28.0%	41.2	Very Remote	n	12%
Pormpuraaw (S)	33.3%	30.5	Very Remote	y	14%
Quilpie (S)	40.0%	37.9	Very Remote	n	12%
Redland (C)	32.0%	40.3	Metropolitan	y	6%
Richmond (S)	39.6%	34.9	Very Remote	n	12%
Rockhampton (R)	38.1%	37.5	Regional Centre	y	10%

	% Blue collar workers	Average age	Remoteness	Coastal?	Activation rate
Scenic Rim (R)	37.9%	41.8	Metropolitan	n	8%
Somerset (R)	43.1%	40.4	Metropolitan	n	8%
South Burnett (R)	39.2%	42.5	Regional Centre	n	10%
Southern Downs (R)	39.5%	42.6	Regional Centre	n	10%
Sunshine Coast (R)	31.6%	41.6	Metropolitan	y	6%
Tablelands (R)	35.0%	43.6	Remote	n	12%
Toowoomba (R)	34.1%	39.1	Metropolitan	n	8%
Torres (S)	26.6%	30.6	Very Remote	y	14%
Torres Strait Island (R)	30.3%	27.7	Very Remote	y	14%
Townsville (C)	32.2%	36.0	Regional Centre	y	10%
Weipa (T)	56.5%	30.4	Very Remote	y	14%
Western Downs (R)	39.8%	37.8	Regional Centre	n	8%
Whitsunday (R)	43.7%	38.8	Remote	y	14%
Winton (S)	36.2%	44.2	Very Remote	n	12%
Woorabinda (S)	30.4%	25.3	Very Remote	n	12%
Wujal Wujal (S)	25.0%	32.7	Remote	y	12%
Yarrabah (S)	26.6%	26.8	Regional Centre	y	10%
Queensland	31.8%	38.2			

Note: Highlighted cells have a higher incidence of blue collar workers / higher average age than Queensland

3.1.2 Tourism Adjustment

The following LGAs were considered to record a significant uplift in boating infrastructure demand as a result of tourism activity:

- first tier LGAs:
  - Douglas Shire
  - Cairns Regional Council
  - Whitsunday Regional Council
- second tier LGAs:
  - Townsville City Council
  - Fraser Coast Council
  - Mackay Regional Council
  - Livingstone Shire Council.

The assumed uplift in boat lane demand was assumed to be as follows:

- first tier LGAs: 20% uplift in boat ramp lane and pontoon/landing demand
- second tier LGAs: 10% uplift in boat ramp lane and pontoon/landing demand.

Consultation also identified that the northern coastal LGAs of Burke, Cook and Carpentaria Shire record significant increases in demand for boating infrastructure during winter, with significant inflows of grey nomads. However, it was also identified that boating infrastructure within these LGAs was more than sufficient to accommodate these inflows.

3.2 Projected size of active fleet

Based on the above assumptions, the projected size of the active fleet in Queensland on a day of average demand is projected to increase from 24,298 vessels in 2016 to 32,524 vessels in 2036.

The size of the active fleet on a day of average demand is anticipated to be largest in the following LGAs, reflecting the large population residing in the South-east Queensland area:

- Gold Coast City Council (2,442 vessels in 2016, increasing to 3,764 vessels in 2036)
- Moreton Bay Regional Council (1,628 vessels in 2016, increasing to 2,268 vessels in 2036)
- Brisbane City Council (1,480 vessels in 2016, increasing to 1,969 vessels in 2036)
- Redland City Council (1,314 vessels in 2016, increasing to 1,803 vessels in 2036)
- Sunshine Coast Regional Council (1,195 vessels in 2016, increasing to 1,783 vessels in 2036).

Table 3.3 below summarises the size of the active fleet on a day of average demand between 2016 and 2036.

Table 3.3: Projected size of active fleet on a day of average demand, 2016-2036

	Trailable Fleet up to 4.5 metres					Trailable Fleet 4.5 - 8 metres					Non-Trailable Fleet				
	2016	2021	2026	2031	2036	2016	2021	2026	2031	2036	2016	2021	2026	2031	2036
Aurukun (S)	1	1	1	2	2	1	1	1	1	1	0	0	0	0	0
Balonne (S)	5	5	5	5	5	2	2	2	2	2	0	0	0	0	0
Banana (S)	45	46	47	48	49	18	19	19	20	20	0	0	0	0	0
Barcaldine (R)	34	33	32	32	31	11	11	11	10	10	0	0	0	0	0
Barcoo (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Blackall-Tambo (R)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Boulia (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Brisbane (C)	942	1,010	1,083	1,164	1,243	378	407	438	472	506	160	180	180	200	220
Bulloo (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bundaberg (R)	894	940	992	1,043	1,094	217	229	242	254	267	60	60	60	60	60
Burdekin (S)	342	352	364	376	386	127	131	135	140	144	20	20	20	20	20
Burke (S)	5	5	5	5	6	2	2	2	2	2	0	0	0	0	0
Cairns (R)	860	925	1,001	1,079	1,156	454	487	524	564	602	120	140	140	160	160
Carpentaria (S)	66	67	69	70	72	35	35	36	37	37	0	0	0	0	0
Cassowary Coast (R)	483	484	489	496	505	263	264	266	269	273	60	60	60	60	60
Central Highlands (R)	93	97	102	106	110	43	45	47	49	51	0	0	0	0	0
Charters Towers (R)	42	42	42	42	42	14	14	14	14	14	0	0	0	0	0
Cherbourg (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cloncurry (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cook (S)	71	72	73	73	73	37	37	38	38	38	0	0	0	0	0
Croydon (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Diamantina (S)	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Doomadgee (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Douglas (S)	200	209	220	230	241	126	131	137	143	149	40	40	40	40	40
Etheridge (S)	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0
Flinders (S)	0	0	0	0	0	4	4	3	3	3	0	0	0	0	0
Fraser Coast (R)	986	1,043	1,115	1,190	1,258	384	407	436	465	493	120	120	140	140	160
Gladstone (R)	551	611	674	740	801	250	276	304	333	360	60	60	60	80	80
Gold Coast (C)	1,592	1,742	1,946	2,169	2,412	570	633	718	811	912	280	320	360	400	440
Goondiwindi (R)	69	69	70	70	71	22	22	22	22	23	0	0	0	0	0
Gympie (R)	233	247	263	279	296	83	88	94	100	106	20	20	20	20	40
Hinchinbrook (S)	365	378	393	408	423	169	174	181	188	194	40	40	40	40	40
Hope Vale (S)	2	2	3	3	3	2	2	2	2	3	0	0	0	0	0
Ipswich (C)	94	113	147	186	231	34	41	54	70	87	0	0	0	0	0
Isaac (R)	206	219	234	251	268	88	93	99	105	112	20	20	20	20	20
Kowanyama (S)	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Livingstone (S)	497	538	589	645	708	252	271	295	321	351	80	80	80	120	120
Lockhart River (S)	1	1	1	1	2	1	1	1	1	1	0	0	0	0	0
Lockyer Valley (R)	36	39	43	46	50	13	14	15	17	18	0	0	0	0	0
Logan (C)	174	189	210	233	264	72	79	89	100	115	0	0	0	0	0
Longreach (R)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mackay (R)	1,010	1,078	1,162	1,254	1,351	363	385	414	443	476	80	80	120	120	120
McKinlay (S)	6	6	6	6	6	2	3	3	3	3	0	0	0	0	0
Mapoon (S)	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0

	Trailable Fleet up to 4.5 metres					Trailable Fleet 4.5 - 8 metres					Non-Trailable Fleet				
	2016	**2021**	**2026**	**2031**	**2036**	**2016**	**2021**	**2026**	**2031**	**2036**	**2016**	**2021**	**2026**	**2031**	**2036**
Maranoa (R)	33	34	36	37	39	11	11	12	12	13	0	0	0	0	0
Mareeba (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moreton Bay (R)	1,102	1,208	1,325	1,435	1,533	406	448	494	537	575	120	120	140	160	160
Mornington (S)	2	2	3	3	3	2	2	2	2	2	0	0	0	0	0
Mount Isa (C)	63	65	67	70	72	35	36	37	38	39	0	0	0	0	0
Murweh (S)	32	31	30	30	30	10	10	10	10	9	0	0	0	0	0
Napranum (S)	1	1	1	1	1	0	1	1	1	1	0	0	0	0	0
Noosa (S)	234	246	261	274	287	100	105	111	116	121	20	20	40	40	40
North Burnett (R)	53	53	52	52	51	16	15	15	15	15	0	0	0	0	0
Northern Peninsula Area (R)	4	4	4	5	5	6	7	7	8	8	0	0	0	0	0
Palm Island (S)	6	6	7	7	7	5	5	6	6	6	0	0	0	0	0
Paroo (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pormpuraaw (S)	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
Quilpie (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Redland (C)	832	897	979	1,060	1,140	362	393	431	468	503	120	120	140	140	160
Richmond (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rockhampton (R)	423	444	467	492	517	167	176	186	196	206	40	40	40	40	60
Scenic Rim (R)	206	219	234	251	266	72	77	83	89	95	0	0	0	0	0
Somerset (R)	266	282	300	318	335	97	102	108	115	121	0	0	0	0	0
South Burnett (R)	130	135	141	147	153	41	42	44	46	48	0	0	0	0	0
Southern Downs (R)	132	137	143	149	155	56	58	60	62	65	0	0	0	0	0
Sunshine Coast (R)	834	921	1,022	1,129	1,236	281	313	349	388	427	80	100	100	120	120
Tablelands (R)	81	84	87	90	94	34	35	36	37	38	0	0	0	0	0
Toowoomba (R)	72	76	80	84	88	25	27	28	29	31	0	0	0	0	0
Torres (S)	15	16	16	17	18	24	25	26	27	28	0	0	0	0	0
Torres Strait Island (R)	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
Townsville (C)	778	856	943	1,032	1,123	370	403	439	476	515	80	80	120	120	140
Weipa (T)	32	37	40	45	50	33	37	40	44	48	0	0	0	0	0
Western Downs (R)	88	91	94	97	100	35	36	38	39	40	0	0	0	0	0
Whitsunday (R)	655	702	755	805	859	342	365	389	413	438	120	140	140	160	160
Winton (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Woorabinda (S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Wujal Wujal (S)	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0
Yarrabah (S)	4	4	4	4	5	2	3	3	3	3	0	0	0	0	0
Total	**15,987**	**17,118**	**18,476**	**19,892**	**21,333**	**6,571**	**7,042**	**7,599**	**8,180**	**8,771**	**1,740**	**1,860**	**2,060**	**2,260**	**2,420**

Source: Economic Associates estimates

3.3 Relationship between active fleet and boating infrastructure demand

3.3.1 Conversion of active trailable fleet to boat ramp lane demand

Converting active trailable fleet estimates into boat ramp lane demand has been undertaken based on throughput rates of ramps. In SKM (1988) and Rose et. al. (2009), a rate of 30 boats per lane per day is considered to provide unhampered overall amenity, whereas a rate of 50 boats per lane per day represents congested operations.

It has been assumed that the midpoint (40) between unhampered overall amenity (30 boats per lane per day) and congested operations (50 boats per lane per day) would represent the ideal scenario, as it balances the needs and wants of trailable boat owners against the costs incurred by local governments, port authorities, water storage managers, state governments and the private sector in providing boat ramps.

This assumption is consistent with the assumption made in the *Recreational Boating Facilities Demand Forecasting Study 2011*.

3.3.2 Relationship between active non-trailable fleet and pontoon/landing demand

The literature review did not uncover any literature relating to public pontoon/landing demand.

Public pontoon/landing demand is driven by the size of the non-trailable fleet. The assessment has assumed that on a given day, an estimated 5% of the active non-trailable fleet is anticipated to demand a public pontoon/landing.

3.4 Projected boat ramp lane demand

Total boat ramp lane demand in Queensland is projected to increase from 563 lanes in 2016 to 757 lanes in 2036 (refer to Table 3.4 below). The LGAs anticipated to record the highest demand for boat ramps are:

- Gold Coast City Council (54 boat ramp lanes in 2016, 83 boat ramp lanes in 2036)
- Moreton Bay Regional Council (38 boat ramp lanes in 2016, 52 boat ramp lanes in 2036)
- Brisbane City Council (33 boat ramp lanes in 2016, 44 boat ramp lanes in 2036)
- Redland City Council (30 boat ramp lanes in 2016, 42 boat ramp lanes in 2036)
- Mackay Regional Council (34 boat ramp lanes in 2016, 46 boat ramp lanes in 2036)
- Fraser Coast Regional Council (34 boat ramp lanes in 2016, 44 boat ramp lanes in 2036)
- Cairns Regional Council (33 boat ramp lanes in 2016, 45 boat ramp lanes in 2036)
- Townsville City Council (29 boat ramp lanes in 2016, 42 boat ramp lanes in 2036)
- Sunshine Coast Regional Council (28 boat ramp lanes in 2016, 42 boat ramp lanes in 2036)
- Bundaberg Regional Council (27 boat ramp lanes in 2016, 34 boat ramp lanes in 2036).

Table 3.4 below identifies that some LGAs have demand for less than one boat ramp lane. These LGAs currently have either little or no public boating infrastructure but recorded vessel registrations.

Table 3.4: Projected boat ramp lane demand by LGA, 2016-2036

	Trailable Fleet up to 4.5 metres					Trailable Fleet 4.5 - 8 metres					Total				
	2016	2021	2026	2031	2036	2016	2021	2026	2031	2036	2016	2021	2026	2031	2036
Aurukun (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Balonne (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Banana (S)	1	1	1	1	1	<1	<1	<1	1	1	1	1	1	2	2
Barcaldine (R)	1	1	1	1	1	<1	<1	<1	<1	<1	1	1	1	1	1
Barcoo (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Blackall-Tambo (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boulia (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Brisbane (C)	24	25	27	29	31	9	10	11	12	13	33	35	38	41	44
Bulloo (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bundaberg (R)	22	24	25	26	27	5	6	6	6	7	27	30	31	32	34
Burdekin (S)	9	9	9	9	10	3	3	3	4	4	12	12	12	13	14
Burke (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cairns (R)	22	23	25	26	29	11	12	13	14	16	33	35	38	40	45
Carpentaria (S)	2	2	2	2	2	1	1	1	1	1	3	3	3	3	3
Cassowary Coast (R)	12	12	12	12	13	7	7	7	7	7	19	19	19	19	20
Central Highlands (R)	2	2	3	3	3	1	1	1	1	1	3	3	4	4	4
Charters Towers (R)	1	1	1	1	1	<1	<1	<1	<1	<1	1	1	1	1	1
Cherbourg (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cloncurry (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cook (S)	2	2	2	2	2	1	1	1	1	1	3	3	3	3	3
Croydon (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Diamantina (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Doomadgee (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Douglas (S)	5	5	6	6	6	4	4	4	4	4	9	9	10	10	10
Etheridge (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Flinders (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fraser Coast (R)	24	26	28	30	32	10	10	11	12	12	34	36	39	42	44
Gladstone (R)	14	15	17	19	20	6	7	8	8	9	20	22	25	27	29
Gold Coast (C)	40	44	49	54	60	14	16	18	20	23	54	60	67	74	83
Goondiwindi (R)	2	2	2	2	2	1	1	1	1	1	3	3	3	3	3
Gympie (R)	6	6	7	7	7	2	2	2	3	3	8	8	9	10	10
Hinchinbrook (S)	9	9	10	10	11	4	4	5	5	5	13	13	15	15	16
Hope Vale (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ipswich (C)	2	3	4	5	6	1	1	1	2	2	3	4	5	7	8
Isaac (R)	5	5	6	6	7	2	2	2	3	3	7	7	8	9	10
Kowanyama (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Livingstone (S)	12	13	14	17	18	7	7	8	8	9	19	20	22	25	27
Lockhart River (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lockyer Valley (R)	1	1	1	1	1	<1	<1	<1	<1	<1	1	1	1	1	1
Logan (C)	4	5	5	6	7	2	2	2	3	3	6	7	7	9	10
Longreach (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Mackay (R)	25	28	29	32	34	9	10	10	11	12	34	38	39	43	46
McKinlay (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

	Trailable Fleet up to 4.5 metres					Trailable Fleet 4.5 - 8 metres					Total				
	2016	**2021**	**2026**	**2031**	**2036**	**2016**	**2021**	**2026**	**2031**	**2036**	**2016**	**2021**	**2026**	**2031**	**2036**
Mapoon (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Maranoa (R)	1	1	1	1	1	<1	<1	<1	<1	<1	1	1	1	1	1
Mareeba (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Moreton Bay (R)	28	30	33	36	38	10	11	12	13	14	38	41	45	49	52
Mornington (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Mount Isa (C)	2	2	2	2	2	1	1	1	1	1	3	3	3	3	3
Murweh (S)	1	1	1	1	1	<1	<1	<1	<1	<1	1	1	1	1	1
Napranum (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Noosa (S)	6	6	7	7	7	3	3	3	3	3	9	9	10	10	10
North Burnett (R)	1	1	1	1	1	<1	<1	<1	<1	<1	1	1	1	1	1
Northern Peninsula Area (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Palm Island (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Paroo (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Pormpuraaw (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Quilpie (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Redland (C)	21	22	24	27	29	9	10	11	12	13	30	32	35	39	42
Richmond (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Rockhampton (R)	11	11	12	12	13	4	4	5	5	5	15	15	17	17	18
Scenic Rim (R)	5	5	6	6	7	2	2	2	2	2	7	7	8	8	9
Somerset (R)	7	7	8	8	8	2	3	3	3	3	9	10	11	11	11
South Burnett (R)	3	3	4	4	4	1	1	1	1	1	4	4	5	5	5
Southern Downs (R)	3	3	4	4	4	1	1	2	2	2	4	4	6	6	6
Sunshine Coast (R)	21	23	26	28	31	7	8	9	10	11	28	31	35	38	42
Tablelands (R)	2	2	2	2	2	1	1	1	1	1	3	3	3	3	3
Toowoomba (R)	2	2	2	2	2	1	1	1	1	1	3	3	3	3	3
Torres (S)	<1	<1	<1	<1	<1	1	1	1	1	1	1	1	1	1	1
Torres Strait Island (R)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Townsville (C)	20	21	23	25	29	9	10	11	12	13	29	31	34	37	42
Weipa (T)	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2
Western Downs (R)	2	2	2	2	3	1	1	1	1	1	3	3	3	3	4
Whitsunday (R)	17	18	19	20	22	8	10	10	11	11	25	28	29	31	33
Winton (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Woorabinda (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Wujal Wujal (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Yarrabah (S)	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total	**401**	**425**	**464**	**496**	**536**	**162**	**176**	**190**	**207**	**221**	**563**	**601**	**654**	**703**	**757**

Note: Economic Associates estimates, derived from Table 3.3

3.5 Projected pontoon/landing demand

In Queensland, total pontoon/landing demand is projected to increase from 87 pontoons/landings in 2016 to 121 pontoons/landings in 2036.

The LGAs anticipated to have the most significant demand for pontoons/landings are Gold Coast City, Brisbane City, Redland City, Sunshine Coast Regional Council, Cairns Regional Council, Fraser Coast Regional Council and Whitsunday Regional Council.

Table 3.5 below summarises the projected pontoon/landing demand by LGA between 2016 and 2036.

Table 3.5: Projected pontoon / landing demand by LGA, 2016-2036

	2016	2021	2026	2031	2036
Aurukun (S)	0	0	0	0	0
Balonne (S)	0	0	0	0	0
Banana (S)	0	0	0	0	0
Barcaldine (R)	0	0	0	0	0
Barcoo (S)	0	0	0	0	0
Blackall-Tambo (R)	0	0	0	0	0
Boulia (S)	0	0	0	0	0
Brisbane (C)	8	9	9	10	11
Bulloo (S)	0	0	0	0	0
Bundaberg (R)	3	3	3	3	3
Burdekin (S)	1	1	1	1	1
Burke (S)	<1	<1	<1	<1	<1
Cairns (R)	6	7	7	8	8
Carpentaria (S)	<1	<1	<1	<1	<1
Cassowary Coast (R)	3	3	3	3	3
Central Highlands (R)	0	0	0	0	0
Charters Towers (R)	0	0	0	0	0
Cherbourg (S)	0	0	0	0	0
Cloncurry (S)	0	0	0	0	0
Cook (S)	<1	<1	<1	<1	<1
Croydon (S)	0	0	0	0	0
Diamantina (S)	0	0	0	0	0
Doomadgee (S)	0	0	0	0	0
Douglas (S)	2	2	2	2	2
Etheridge (S)	0	0	0	0	0
Flinders (S)	0	0	0	0	0
Fraser Coast (R)	6	6	7	7	8
Gladstone (R)	3	3	3	4	4
Gold Coast (C)	14	16	18	20	22
Goondiwindi (R)	0	0	0	0	0
Gympie (R)	1	1	1	1	2
Hinchinbrook (S)	2	2	2	2	2
Hope Vale (S)	<1	<1	<1	<1	<1
Ipswich (C)	<1	<1	<1	<1	<1
Isaac (R)	1	1	1	1	1
Kowanyama (S)	0	0	0	0	0
Livingstone (S)	4	4	4	6	6
Lockhart River (S)	<1	<1	<1	<1	<1
Lockyer Valley (R)	0	0	0	0	0
Logan (C)	<1	<1	<1	<1	<1
Longreach (R)	0	0	0	0	0
Mackay (R)	4	4	6	6	6
McKinlay (S)	0	0	0	0	0
Mapoon (S)	0	0	0	0	0

	2016	2021	2026	2031	2036
Maranoa (R)	0	0	0	0	0
Mareeba (S)	0	0	0	0	0
Moreton Bay (R)	6	6	7	8	8
Mornington (S)	<1	<1	<1	<1	<1
Mount Isa (C)	0	0	0	0	0
Murweh (S)	0	0	0	0	0
Napranum (S)	0	0	0	0	0
Noosa (S)	1	1	2	2	2
North Burnett (R)	0	0	0	0	0
Northern Peninsula Area (R)	<1	<1	<1	<1	<1
Palm Island (S)	<1	<1	<1	<1	<1
Paroo (S)	0	0	0	0	0
Pormpuraaw (S)	0	0	0	0	0
Quilpie (S)	0	0	0	0	0
Redland (C)	6	6	7	7	8
Richmond (S)	0	0	0	0	0
Rockhampton (R)	2	2	2	2	3
Scenic Rim (R)	0	0	0	0	0
Somerset (R)	0	0	0	0	0
South Burnett (R)	0	0	0	0	0
Southern Downs (R)	0	0	0	0	0
Sunshine Coast (R)	4	5	5	6	6
Tablelands (R)	0	0	0	0	0
Toowoomba (R)	0	0	0	0	0
Torres (S)	<1	<1	<1	<1	<1
Torres Strait Island (R)	<1	<1	<1	<1	<1
Townsville (C)	4	4	6	6	7
Weipa (T)	<1	<1	<1	<1	<1
Western Downs (R)	0	0	0	0	0
Whitsunday (R)	6	7	7	8	8
Winton (S)	0	0	0	0	0
Woorabinda (S)	0	0	0	0	0
Wujal Wujal (S)	0	0	0	0	0
Yarrabah (S)	<1	<1	<1	<1	<1
Total	**87**	**93**	**103**	**113**	**121**

Source: Economic Associates estimates, derived from Table 3.3

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APPENDIX A

DISTRIBUTION OF BOAT REGISTRATIONS TO LGAS OF USE

Table A.1: Distribution of boat registrations to LGAs of use, trailable boat registrations

LGA Registration Address

LGA OF USE	Aurukun (S)	Balonne (S)	Banana (S)	Barcaldine (R)	Barcoo (S)	Blackall-Tambo (R)	Boulia (S)	Brisbane City North	Brisbane City South	Bulloo (S)	Bundaberg (R)	Burdekin (S)	Burke (S)	Cairns (R)	Carpentaria (S)	Cassowary Coast (R)	Central Highlands (R)	Charters Towers (R)	Cherbourg (S)	Cloncurry (S)	Cook (S)	Croydon (S)	Diamantina (S)	Doomadgee (S)	Douglas (S)	Etheridge (S)	Flinders (S)	Fraser Coast (R)	Gladstone (R)	Gold Coast (C)	Goondiwindi (R)	Gympie (R)	Hinchinbrook (S)	Hope Vale (S)	Ipswich (C)	Isaac (R)	Kowanyama (S)	Livingstone (S)	Lockhart River (S)	Lockyer Valley (R)	Logan (C)	Longreach (R)	Mackay (R)	McKinlay (S)	Mapoon (S)	Maranoa (R)	Mareeba (S)	Moreton Bay (R)	Mornington (S)	Mount Isa (C)	Murweh (S)	Napranum (S)	Noosa (S)	North Burnett (R)	Northern Peninsula Area (R)	Palm Island (S)	Paroo (S)	Pormpuraaw (S)	Quilpie (S)	Redland (C)	Richmond (S)	Rockhampton (R)	Scenic Rim (R)	Somerset (R)	South Burnett (R)	Southern Downs (R)	Sunshine Coast (R)	Tablelands (R)	Toowoomba (R)	Torres (S)	Torres Strait Island (R)	Townsville (C)	Weipa (T)	Western Downs (R)	Whitsunday (R)	Winton (S)	Woorabinda (S)	Wujal Wujal (S)	Yarrabah (S)	Interstate	Overseas	Unknown
Aurukun (S)	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Balonne (S)	-	20%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Banana (S)	-	-	40%	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-
Barcaldine (R)	-	-	-	30%	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-
Barcoo (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Blackall-Tambo (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Boulia (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brisbane City North	-	-	-	-	-	-	-	65%	65%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20%	-	-	-	-	20%	5%	-	-	-	-	-	-	10%	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Brisbane City South	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bulloo (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bundaberg (R)	-	-	-	-	-	-	-	-	-	-	92%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3%	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Burdekin (S)	-	-	-	-	-	-	-	-	-	-	-	90%	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	15%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	2%	-	-	-	-	5%	-	-
Burke (S)	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cairns (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	94%	-	4%	-	-	-	-	-	-	-	-	5%	20%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carpentaria (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	80%	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cassowary Coast (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	3%	-	95%	-	5%	-	-	-	-	-	-	-	80%	-	-	-	-	-	-	7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Central Highlands (R)	-	-	-	70%	-	40%	-	-	-	-	-	-	-	-	-	-	54%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Charters Towers (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	-	-	-	-	-	-	-	-	70%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cherbourg (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cloncurry (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cook (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-
Croydon (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diamantina (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Doomadgee (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Douglas (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	3%	-	-	-	-	-	-	-	-	-	-	94%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Etheridge (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Flinders (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fraser Coast (R)	-	-	-	-	-	-	-	-	-	-	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	93%	-	-	-	12%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gladstone (R)	-	-	50%	-	-	-	-	-	-	-	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91%	-	-	-	-	-	-	-	-	1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gold Coast (C)	-	-	-	-	-	-	-	-	20%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70%	5%	-	-	-	35%	-	-	-	-	10%	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6%	-	-	25%	-	-	15%	-	-	5%	-	-	-	-	-	-	-	-	-	-	30%	100%	100%
Goondiwindi (R)	-	30%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-
Gympie (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4%	-	-	-	78%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4%	-	-	-	-	-	-	-	-	-	-	-	5%	-	3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hinchinbrook (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1%	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	15%	-	-	-	-	-	-	-	-	-	-
Hope Vale (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ipswich (C)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Isaac (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	88%	-	1%	-	-	-	-	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kowanyama (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Livingstone (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	84%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lockhart River (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lockyer Valley (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Logan (C)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Longreach (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mackay (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	90%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	5%	-	-
McKinlay (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mapoon (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Maranoa (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mareeba (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Moreton Bay (R)	-	-	-	-	-	-	-	25%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10%	-	-	-	-	-	-	-	80%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10%	-	-	3%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mornington (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mount Isa (C)	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	20%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Murweh (S)	-	-	-	-	-	60%	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	100%	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Napranum (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Noosa (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86%	-	-	-	-	-	-	-	-	-	-	5%	-	-	4%	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-
North Burnett (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-
Northern Peninsula Area (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Palm Island (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Paroo (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pormpuraaw (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Quilpie (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Redland (C)	-	-	-	-	-	-	-	-	15%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10%	-	-	-	-	19%	-	-	-	-	5%	20%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	89%	-	-	10%	-	-	25%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Richmond (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rockhampton (R)	-	-	10%	-	-	-	-	-	-	-	-	-	-	-	-	-	6%	-	-	-	-	-	-	-	-	-	-	-	4%	-	-	-	-	-	-	-	-	14%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8%	-	-
Scenic Rim (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65%	-	-	30%	-	-	30%	-	-	-	-	-	-	-	-	-	-	-	-	-
Somerset (R)	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80%	-	-	-	-	30%	-	-	-	-	30%	-	-	-	-	-	-	-	-
South Burnett (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	90%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Southern Downs (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30%	-	-	15%	-	-	-	-	20%	-	-	-	-	-	-	-	-
Sunshine Coast (R)	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10%	-	-	-	-	10%	-	-	-	-	-	-	-	-	-	-	5%	-	-	90%	-	-	-	-	-	-	-	-	-	-	-	-	5%	-	-
Tablelands (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40%	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toowoomba (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20%	-	-	-	-	-	-	-	-	-	-	-	-	-
Torres (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-
Torres Strait Island (R)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-
Townsville (C)	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	-	35%	-	-	-	-	-	-	-	-	15%	-	-	-	-	-	7%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40%	-	-	-	-	-	-	-	-	-	-	80%	-	-	-	-	-	-	-	-	-	-
Weipa (T)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-
Western Downs (R)	-	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50%	-	-	-	-	-	-	-	-
Whitsunday (R)	-	-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2%	-	-	-	-	-	-	6%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	93%	-	-	-	-	-	-	-
Winton (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Woorabinda (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wujal Wujal (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-
Yarrabah (S)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-

Table A.2: Distribution of boat registrations to LGAs of use, non-trailable boat registrations

	LGA Registration Address																																																																																		
	Aurukun (S)	Balonne (S)	Banana (S)	Barcaldine (R)	Barcoo (S)	Blackall-Tambo (R)	Boulia (S)	Brisbane City North	Brisbane City South	Bulloo (S)	Bundaberg (R)	Burdekin (S)	Burke (S)	Cairns (R)	Carpentaria (S)	Cassowary Coast (R)	Central Highlands (R)	Charters Towers (R)	Cherbourg (S)	Cloncurry (S)	Cook (S)	Croydon (S)	Diamantina (S)	Doomadgee (S)	Douglas (S)	Etheridge (S)	Flinders (S)	Fraser Coast (R)	Gladstone (R)	Gold Coast (C)	Goondiwindi (R)	Gympie (R)	Hinchinbrook (S)	Hope Vale (S)	Ipswich (C)	Isaac (R)	Kowanyama (S)	Livingstone (S)	Lockhart River (S)	Lockyer Valley (R)	Logan (C)	Longreach (R)	Mackay (R)	McKinlay (S)	Mapoon (S)	Maranoa (R)	Mareeba (S)	Moreton Bay (R)	Mornington (S)	Mount Isa (C)	Murweh (S)	Napranum (S)	Noosa (S)	North Burnett (R)	Northern Peninsula Area (R)	Palm Island (S)	Paroo (S)	Pormpuraaw (S)	Quilpie (S)	Redland (C)	Richmond (S)	Rockhampton (R)	Scenic Rim (R)	Somerset (R)	South Burnett (R)	Southern Downs (R)	Sunshine Coast (R)	Tablelands (R)	Toowoomba (R)	Torres (S)	Torres Strait Island (R)	Townsville (C)	Weipa (T)	Western Downs (R)	Whitsunday (R)	Winton (S)	Woorabinda (S)	Wujal Wujal (S)	Yarrabah (S)	Interstate	Overseas	Unknown
Aurukun (S)	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Balonne (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Banana (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Barcaldine (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Barcoo (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Blackall-Tambo (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Boulia (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Brisbane City North	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Brisbane City South	0%	0%	0%	0%	0%	0%	0%	75%	75%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	40%	5%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bulloo (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bundaberg (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	92%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	75%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Burdekin (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	2%	0%	0%	0%	0%	5%	0%	0%
Burke (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cairns (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	94%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	6%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Carpentaria (S)	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cassowary Coast (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	95%	0%	5%	0%	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Central Highlands (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Charters Towers (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cherbourg (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cloncurry (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cook (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%
Croydon (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Diamantina (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Doomadgee (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Douglas (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	94%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Etheridge (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Flinders (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Fraser Coast (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	93%	0%	0%	0%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Gladstone (R)	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	91%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Gold Coast (C)	0%	100%	0%	0%	0%	0%	0%	0%	20%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	85%	100%	0%	0%	0%	50%	0%	0%	0%	0%	25%	65%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%	0%	100%	6%	0%	0%	100%	0%	0%	100%	0%	0%	50%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	30%	100%	100%
Goondiwindi (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Gympie (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	78%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Hinchinbrook (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	86%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Hope Vale (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ipswich (C)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Isaac (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	88%	0%	1%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kowanyama (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Livingstone (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	84%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%
Lockhart River (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lockyer Valley (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Logan (C)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Longreach (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mackay (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	5%	0%	0%
McKinlay (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mapoon (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Maranoa (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mareeba (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Moreton Bay (R)	0%	0%	0%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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Mount Isa (C)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Murweh (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Napranum (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Noosa (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	70%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	86%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%
North Burnett (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Northern Peninsula Area (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Palm Island (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Paroo (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pormpuraaw (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Quilpie (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Redland (C)	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	25%	0%	0%	0%	0%	10%	30%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	89%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Richmond (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rockhampton (R)	0%	0%	20%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	8%	0%	0%
Scenic Rim (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Somerset (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
South Burnett (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Southern Downs (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Sunshine Coast (R)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	25%	0%	0%	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%
Tablelands (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Toowoomba (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Torres (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Torres Strait Island (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Townsville (C)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	75%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	80%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%
Weipa (T)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Western Downs (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Whitsunday (R)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	93%	0%	0%	0%	0%	0%	0%	0%
Winton (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Woorabinda (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Wujal Wujal (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%
Yarrabah (S)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%

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